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LIS 571
Organization and Control
of Recorded Information

Spring 2011

Assignments

Instructions for using the assignment templates

There are templates for the assignment answers for Word which will be emailed. Using these templates can save you some time in preparing the assignment answers. (This is a very simple example of templates as discussed in Lecture 6.1.) A template includes the assignment title, section headings where appropriate, and all worksheets. In one easy procedure you can personalize all templates so that each already has your name and mailbox number.

The templates are intended for use with a word processor. If you wish, you can also print them out and then type or handwrite; before printing adjust the space between section headings.

One *master document* allows for inserting your name into all templates at once. In word processing terminology, a master document is a collection of subdocuments (in this case one subdocument for each assignment template). You personalize the templates in the master document (applying a global change to the whole master document) and extract the individual assignment templates using the procedure described below.

Instructions for creating the templates

Word

1. Create a folder on your hard disk and move the attachment there. Then extract all files **to that folder**. **Do not just double-click** to extract the files. You need to use a process (depending on your computer) that gives you an option Extract to _____ ; there you need to type in the name of the folder you created or select it from a pop-up window. On some systems, right-clicking on the zip file and then clicking on Extract All will get you there.
2. Open the document master.doc. Click on *View*, then on *Outline*, in the Outline Toolbar click on the icon *Expand Subdocuments*.
(Mouse over the buttons in the toolbar and watch the tool tips.)
(In older versions of Word, you may need to click on *Master Document View*, then on *Expand Subdocuments*.)
3. Do a global change (you should know how to do this, else ask the GA).

<i>Find:</i>	%n
<i>Replace with:</i>	a <your name> (a for afternoon, e for evening)
4. Save the master document. This will also save the changed version of each subdocument (the individual assignment templates). Then you can now exit the master document.

Note: **This process may depend on the version of Word you are using.** If it does not work, ask the GA.

Assignments 1 - 3

Searching three information systems

Perseus (plus Freebase)	A hypermedia system on classics
Medline	A database of journal articles in medicine
OCLC WorldCat and ArticleFirst on FirstSearch	A database of books on all subjects and a database of journal articles

Objectives / concepts learned	<p>These assignments give you experience in how information retrieval (IR) systems work and provide many examples for concepts discussed throughout the course, esp. in the reading for Lecture 4.1, <i>Design of an integrated information structure interface</i>.</p> <p>The goal is to create an intuitive understanding now as the basis for more formal treatment later</p>
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These assignments relate to →LIS 518 Reference Sources and Services; they will make you a better searcher.

If you want to examine still another information system where the entity-relationship model is hard at work, look at

[/www.ontopia.net/omnigator/models/index.jsp](http://www.ontopia.net/omnigator/models/index.jsp)

(The opera example is best.)

Also <http://wiki.dbpedia.org/About> and www.freebase.com (Freebase is now part of Ass. 1)

Note on controlled vocabulary

All three assignments touch on this concept in a preliminary way. This concept will be discussed in depth later. Briefly, a controlled vocabulary is a vocabulary in which one term is chosen from a group of synonyms to represent a concept. From the terms *popular culture* and *mass culture* choose *popular culture*; *popular culture* is used in indexing and should be used in searching. This way, no matter which term the author uses, a user searching for the concept will find it.

Assignment 1
Lecture 1.2

Assigned: Jan. 19
Due: Feb. 2

Hypermedia exploration: Perseus and Freebase

Objectives	<ol style="list-style-type: none"> 1. Experience an integrated IR system that covers many entity types (art works, buildings, documents, and words) that are related in many ways. Get a good understanding how the entity-relationship approach can be used in searching through a rich network of relationships 2. Improve understanding of information structure concepts: entity-relationship modeling, conceptual data schema. 3. Understand searching through navigation and through explicit queries. Optional: First look at controlled vocabulary vs. full-text.
Deliverable	<p>Individual essay (one for each student)</p> <p>3/4 page. The Essay should be a reflection on what you experienced / learned / got out of this assignment. (Remember that we want you to become reflective practitioners.) You could analyze the system as to its strengths and weaknesses and/or think about how you might use this system (or a system like it in a different domain) in the kind of job you aspire to, or how this or a similar system could be used for the patrons of the kind of library / information system you are interested in.</p> <p>Do not write about the quirks and unreliability of the system.</p> <p>Compare Perseus and Freebase</p>
Tasks	<ol style="list-style-type: none"> 1. Do a guided exploration of Perseus. You can get a basic view or you can explore the system more fully by following the optional parts. 2. Do your own searches on Perseus. (optional)
Materials	<ol style="list-style-type: none"> 1 Description of Perseus 2 Step-by-step guide for exploring the features of Perseus <p>You need a computer with a high-speed Internet connection (your computer at home or any of the computer labs in the Lockwood Library, the Cybrary, or Capen Library).</p>
Caveat	If Perseus does not work for you exactly as it did when the assignment was last checked, “go with the flow” and figure out what to do.
Time	2 ½ hours

Assignment materials for Perseus

1 Description of Perseus and Freebase

1.1 What is Perseus? What is Freebase?

Perseus is a Web-based hypermedia and information retrieval system that contains a vast amount of information about classics (and recently other things), including descriptions and images of archaeological sites, buildings, sculpture, vases, and coins; Greek literary works and their English translations; a Greek-English dictionary; a time line of events; a classics encyclopedia.

Section 1.2 gives a more complete description of the contents in form of a *conceptual data schema*.

In the exploration, you will, among other things

- visit a Greek archaeological site, look at a site plan, get information about the buildings, and look at images of the buildings, with an excursion to an encyclopedia article about Greek theaters in general;
- consult the Perseus Encyclopedia;
- locate a passage of Greek text with links to dictionary entries;
- do some searches in the English-Greek dictionary;
- [locate literature relevant to Thucydides research and follow some hypertext links;]
- do a free-text search of the entire Perseus database.

Notes 1 Perseus is under continuous construction; as a consequence, everything work does not always work as advertised.

2 An older version of Perseus had several cool features the assignment can no longer demonstrate. These are summarized at the end of the assignment.

"**Freebase** is an open, Creative Commons licensed repository of structured data of more than 12 million entities. An entity is a single person, place, or thing." Entities are connected through binary relationships, forming statements. This can be visualized as an entity-relationship graph that users can follow starting from one entity, such the person *Verdi*, to find connected entities, such as operas he composed. There is a large community of people wh contribute data to Freebase. You will explore Freebase on your own.

1.2 Conceptual data schema for Perseus (draft, suggestions for improvements welcome)

A conceptual data schema defines the types of data that are included in an information system. In the *entity-relationship approach* (which is quite prevalent in the database world, in data representation for the semantic Web, and, since FRBR and RDA, in bibliographic cataloging), types of data are modeled by giving the types of entities covered in the information system and the types of relationships that can be used to combine entities into statements, such as:

Statement templates	Entity type <i>Relationship</i> Entity type Text object < <i>authoredBy</i> > Person	Entity type <i>Relationship</i> Entity type Building < <i>containedIn</i> > Site.
Statements	Entity value <i>Relationship</i> Entity value Case of Plataia < <i>authoredBy</i> > Crane	Entity value <i>Relationship</i> Entity Parthenon < <i>containedIn</i> > Acropolis

Why is the conceptual data schema (which is not easily visible in Perseus) elaborated here?

- 1 Understanding the conceptual data schema makes it easier to use Perseus to full advantage.
- 2 Applying a conceptual data schema in navigation / search makes it easier to understand.

Entity types

<p>Object</p> <p>Note: For many objects, a distinction between intellectual/artistic work and item (physical copy) can be made; for example, <i>The Republic</i> by Plato as an intellectual work and a particular item (physical copy) with the text of that work. (More on that in Week 7)</p> <ul style="list-style-type: none"> . MediaObject (document) <ul style="list-style-type: none"> . . TextObject <ul style="list-style-type: none"> . . . LiteraryWork . . . Text describing an object . . Image <ul style="list-style-type: none"> . . . Photograph . . . DrawingOfRealObject . . . SchematicDrawing . Art object <ul style="list-style-type: none"> . . Building . . Sculpture . . Vase . . Coin <p>Person</p>	<p>Place</p> <ul style="list-style-type: none"> . Region . Site . MapLocation (in coordinates) <ul style="list-style-type: none"> . . Spot (a specific spot on a site) <p>Direction (as in northeast)</p> <p>ObjectType</p> <p>Values are all the object types listed above and more specific object types, such as theater under building or fortified city under site; used in Perseus to find all objects of a given type.</p> <p>TimeEntity</p> <ul style="list-style-type: none"> . Period . Date <p>Event</p> <p>Language</p> <p>WordEntity</p> <ul style="list-style-type: none"> . Word (a word underlies a group of forms) . WordForm (a string of characters) <p>Concept</p> <p>identified/named by keywords in Perseus</p>
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Relationship types

When you click on a hyperlink or a *Search* button in Perseus, you follow a relationship. For example, Perseus includes the statement Troad (a Region) *contains* Assos (a Site). When Troad is highlighted, clicking the *Search* button follows the *contains* link to find Assos (and other sites). A list of Perseus relationship types, along with the entity types they connect, is given on the next page.

Relationships: Statement templates and sample statements		
Entity	<isa>	Entity (for example, concept hierarchy) (isa = is a)
Object	<isa>	Object type (building, vase, coin, document, etc)
Assos	<isa>	Site
Object	<depicts>	Entity
Schematic drawing	<depicts>	Site
(site plan)		
Tampa 82.14.1	<depicts>	Pillar (where Pillar is an Object type, "some pillar")
Image Smith 1989	<depicts>	Assos (where Assos is a specific object)
Media object	<dealsWith>	Object
	<mentions>	
Perseus Building Catalog, p. 535	<deals with>	Assos Theater
Entity	<contains>	Entity (whole-part), e.g. for example
Text object	<contains>	Text object
Text object	<contains>	Word
Region	<contains>	Site
Troad	<contains>	Assos
Site	<locatedAt>	Map location
Assos	<locatedAt>	(39.5845 N, 26.2082 E)
Site	<contains>	Building
Assos	<contains>	Assos Theater
Word	<belongsTo>	Language
polis	<belongsTo>	Greek
Text object	<writtenIn>	Language
Herodotus 9.28.6	<writtenIn>	Greek
Text object	<authoredBy>	Person,
Text object	<refersTo>	Text object
Crane 1996	<refersTo>	Herodotus 9.28.6
Text object	<translationOf>	Text object
Word	<translationOf>	Word
city	<translationOf>	polis
Word	<hasForm>	Word form
polis	<hasForm>	poleōs (poleos is the genitive singular)

Image	<takenAt>	(Spot, Direction)
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Inverse relationships		
Entity	<includesSpecific>	Entity
Object type	<includesSpecific>	Object
Site	<includesSpecific>	Assos
Entity	<depictedIn>	Object
Site	<depictedIn>	Schematic drawing (site plan)
Pillar	<depictedIn>	Tampa 82.14.1
Assos	<depictedIn>	Image Smith 1989
Object	<dealtWithIn>	Media object
Assos Theater	<dealtWithIn>	Perseus Building Catalog, p. 535
Entity	<containedIn>	Entity
Text object	<containedIn>	Text object
Word	<containedIn>	Text object
Site	<containedIn>	Region
Assos	<contained in>	Troad
Map location	<isLocationOf>	Site
(39.5845 N, 26.2082 E)	<isLocationOf>	Assos
Building	<contained in>	Site
Assos Theater	<contained in>	Assos
Language	<isLanguageOf>	Word
Greek	<isLanguageOf>	polis
Language	<isLanguageOf>	Text object
Greek	<isLanguageOf>	Herodotus 9.28.6
Person	<authorOf>	Text object
Text object	<referredToIn>	Text object
Herodotus 9.28.6	<referredToIn>	Crane 1996
Text object	<translationSourceOf>	Text object
Word	<translationSourceOf>	Word
polis	<translationSourceOf>	city

Word form	<i><isFormOf></i>	Word
pole ^u s (= city)	<i><isFormOf></i>	polis
(Spot, direction)	<i><isReferencePointFor></i>	Image

2 Step-by-step guide for exploring the features of Perseus

General Hints:

Use a computer with a fast Internet connection. Close other applications.

Perseus works better in Firefox than in Explorer, where pages often look a bit weird.

The WWW version of Perseus often shows only the top of a screen while the real results you want are further down. **Always scroll down a bit before assessing the result.**

Sometimes, Perseus opens a new browser window when you follow a link. You might have to click on the icon for that new window in the Window's task bar to actually see the window.

The Perseus system is not entirely reliable. The things in the exercise generally work, at least on the second try. Watch for your browser's indicator that it is downloading a lengthy document (esp. an image). The system did respond; it just takes a while. **Do not click the mouse while the browser is downloading the page.** The browser stores your clicks and acts on them as soon as the result of the previous click is available. So when you finally could see the results you have been waiting for, the browser immediately moves on to the next thing.

Hyperlinks, that is, elements that can be used as starting points in a next search step, are usually blue (and often underlined). Purple means you have been there.

In this assignment, an underlined word or phrase means: select this item by clicking on it.

In Perseus there are **two types of hyperlinks** (even though all hyperlinks appear the same)

- **Hardcoded hyperlinks** that lead to a specific place. These hyperlinks follow a specific relationship introduced between the two linked entities (see the conceptual data schema).
- **Hyperlinks that** simply call the *Look-up Tool* to **search** for the underlined word or phrase.

Search

Search works in two different modes.

(1) Search in document metadata. By default, when you press the search button (or just [Enter], Perseus searches only the author and the title of documents. (This is called *low exhaustivity of indexing*.)

(2) Search in full document text and for other types of entities This is a second step, invoked by clicking on [here](#) on the first result screen. Example: Search for *vase*.

Notes: (a) If none of the initial search terms occurs in the metadata, the system skips (1) and goes directly to (2). (b) Perseus looks for exactly the string you input even if "Search for all possible forms" is checked. (c) Several search terms are connected with OR as the default.

A note of caution. Perseus is a system very rich in information, linkages, and navigational possibilities. But its interface, while improved, may be hard to follow. If you are confused it might well be the system's fault. If you think there should be a better way to do some of the interactions, there probably is!

Start of exploration	
Instruction on what to do <u>Underline</u> means: Click on this	Explanation
Go the Web address: <u>www.perseus.tufts.edu</u>	Note: Access to Perseus is sometimes unstable and slow. If that happens, use at off hours or try again.
First, look at some help files	
<u>Help</u>	Inside the logo band at the top of the page. Explore help topics if you wish, for example <u>Classics Collection Overview</u> . You can follow links from there.
<u>Perseus 4 Quick Start Guide</u> <u>Searching the collection</u>	You can read this if you like; the assignment always gives you instructions what to do.
Now look for sites, buildings, and a lot of information about them. Search using navigation	
[<u>Collections/Texts</u>]	Inside the logo band at the top of the page
<u>Art & Archaeology Artifact Browser</u>	
Browse one of the following artifact types: • <u>Site</u>	This defines the target of your search , the type of entities (namely sites) you want to find. Perseus displays two ways to search for sites, allowing you to select an entity type as the starting point in the next search step .
Choose a property of the Site artifact: • <u>Region</u>	Perseus displays a list of regions (starting entity values) to choose from.
Scroll down the list. Click on <u>Troad</u>	Perseus displays a list of all sites X for which Region Troad <contains> Site X is true.

<u>Assos</u>	Leads to a full description of the site.
	We will now do a search for images of Assos
<u>View Thumbnails (89)</u>	You can look at some of the images by clicking on the thumbnail
In the search box (upper right hand corner), type Assos and press [Enter] or click on <u>Search</u>	The 89 thumbnails do not include all images of Assos. So we are going to search another way. This searches the entire collection. Look over the result screen and observe how it is divided by type of entity found
In the Artifacts section, click on <u>View</u>	An expanded list of artifacts appears, sorted by artifact type, beginning with buildings.
<u>Assos, Theater</u> [Building]	See a description of the building, found following the link Object <dealt with in> Media object Note the uniform template used for building descriptions
<u>View Thumbnails</u> [10] (you could also click on the same button in the list of buildings without looking at the description)	Lower SW corner and Upper NE section are particularly good images. These images are not among the 89 shown under Assos
	Another way to find all buildings on the site Assos
[Collections/Texts] <u>Art & Archaeology Artifact Browser</u>	
<u>Building</u>	This defines the target of your search , the type of entities (in this case buildings) you want to find. Now Perseus displays five ways to search for buildings, allowing you to specify the entity type to be used as starting point in the next search step .

<p>Choose a property of the Building artifact:</p> <ul style="list-style-type: none"> • <u>Context</u> 	Context is the same as Site. Perseus displays a list of sites (starting entity values) to choose from.
<ul style="list-style-type: none"> • <u>Assos [9 Buildings]</u> 	Displays a list of the 9 buildings. Site <contains> Building
<u>Assos, Theater</u>	Brings up a description Object <dealt with in> Media object
On the new page, click <u>Assos, Theater</u> .	
Next to <u>10 images</u> , click on [<u>Thumbnails</u>].	
Click on the thumbnail picture of the plan.	Brings up a plan of the theater.
Second example of navigation search: <i>vases showing a pillar</i>	
<u>[Collections/Texts]</u> <u>Art & Archaeology Artifact Browser</u>	
Browse one of the following artifact types: <ul style="list-style-type: none"> • <u>Vase</u> 	You want to find objects of type vase (the search target)
Choose a property of the Vase artifact: <ul style="list-style-type: none"> • <u>Keyword</u> 	You want to select a keyword as starting point for the search.
View Vases whose Keyword category is... <ul style="list-style-type: none"> • <u>Buildings [20 keywords]</u> 	Browse the keyword list by category
View Vases with keyword category: Buildings... <ul style="list-style-type: none"> • <u>pillar [8 Vases]</u> 	Now you select the specific keyword "pillar" as the starting point of your search Shows thumbnail images of 8 vases whose Keyword is "pillar" Object (Vase) <depicts> Object (Pillar)
	Vase 7, Tampa 82.14.1, has a distinct image of a pillar.
Click on the thumbnail image.	See a large image.

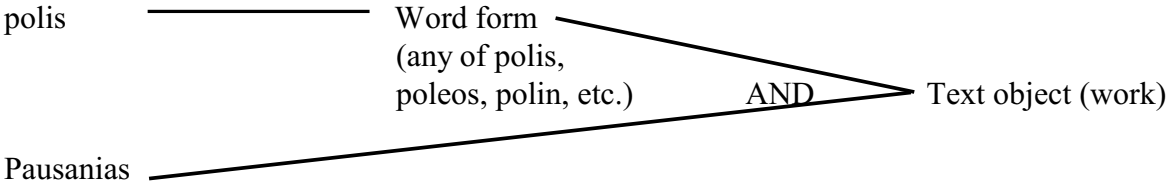
Back , then click on <u>Tampa 82.14.1</u> : Read the Decoration Description, note "pillar"	Shows record with information about the vase. Some vases have a lot more information.
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Search through the search box. Topic: vases showing a pillar	
Type "pillar" in the search box top right and click [Search]	Finds all documents, images, artifacts, and dictionary entries in some way associated with "pillar" ("pillar" occurs in the text itself or in the description of an object)
Under Matching Artifacts (33) Uncheck all object types (entity types) except vases and click [View]	Narrow the scope of the search targets All the vases from before are found, plus three more.
Explore the Perseus Encyclopedia. More hypertext examples	
In the little search box that appears in the top right of most screens, enter <i>encyclopedia</i> and click on <u>Search</u> Under 3 from Greek and Roman Materials <u>Perseus Encyclopedia:</u>	Leads to the start of the alphabetically arranged Perseus Encyclopedia. Note: There used to be a very useful table of contents by broad subject categories, each leading to a listing of encyclopedia articles in that category. The alpha table of contents is not useful.
In the search results <u>Perseus Encyclopedia</u> (English)	
In the PersEnc. box, type <i>Assos</i> and press [Enter].	The text fo this entry has not yet been entered, but there is a cross-reference
Optional Click on [XML] Go back with browser Back button	Examine the entry with XML tags
<u>Paus. 6.4.9</u>	This will open in a new tab in your browser. You may have to click on that tab to see the text. Again, you can explore the XML if you wish.
Close the Pausanias tab	
In the PersEnc. box, type <i>theater</i> and press [Enter].	Read the text. Note: <i>theater</i> and <i>theatre</i> are different strings and are treated separately. Here <i>theatre</i> does not find anything. Question: What would the system need to make it easier for the user?

Scroll down to the end. Click on the thumbnail image.	Leads to a schematic drawing of the layout of a Greek theater.
Back. Click on any of the items under see also . If the image opened in a new tab, close that tab to get back	See related encyclopedia articles.
This did not work when a tried it, but give it a try. Click on a related encyclopedia article	
Always return to Theater using Back .	

<p>Locate a passage of Greek text and follow links from there More examples of hypertext.</p>	
<p>In the menu bar on top, click on Collections/Texts Then click on <u>Greek and Roman Materials</u></p>	<p>A long list appears.</p>
<p>Find Pausanias on the page, or scroll down to it Click the triangle to its left Click <u>Description of Greece. (English)</u> In the little box where it says <i>Paus. 1.1.1</i>, change it to <i>Paus. 1.29</i> and press [Enter]</p>	
<p>Scroll down to see the entire section Click on footnote symbol 3, then click on the footnote symbol there to get back into the text. Follow a path to another cross-reference and back</p>	<p>In Explorer 8, when I click on the XML button I get a nicely formatted version of the text with XML tags. In other browsers this may not work as well. Looking at the XML is instructive</p>
<p>Move around the text. Use the browser's Find (Ctrl-F) to quickly locate theater in the text.</p>	
<p>Ctrl-Home (to get to the top) Use the right arrow at the top of the page to go to the next Section.</p>	
<p>Back to 1.29</p>	
<p>Under Places (automatically extracted) <u>View a map</u></p>	
<p>Zoom so the map focuses on the Mediterranean. Click on some of the red push-pins to see the name of the place</p>	
<p>In the bar Greek click on <u>load</u></p>	<p>Loads the Greek text on the side. (Clicking on focus puts the Greek text in the middle.) If you do not read Greek, change the preferences</p>

<p>Ctrl-End to get to the end of the page Under Display Preferences In the drop-down box Greek Display: select Latin transliteration [Update Preferences]</p>	<p>On transliteration, see See http://en.wikipedia.org/wiki/Transliteration</p>
<p>Final section of the Perseus exercise. OPTIONAL, ADVANCED</p> <p>Words as entity types of interest.</p>	
<p>Locate [2]. A few words in, click on poleôs</p>	<p>In its own browser tab (you may need to click to open this tab), displays morphological analysis for this inflected Greek word. Word form (poleôs) <<i>is form of</i>> Word (polis) polis = city, poleos is the genitive singular</p>
<p>Middle Liddell</p>	<p>Briefly study this dictionary entry. Note that users are asked to contribute word sense disambiguation data, which can be used as a training set by a computer program that learns automatic word sense disambiguation</p>
<p>Under Max, click on 1,148 The click on More to see all results (The cursor does not change as you mouse over more, but clicking on it works anyway.)</p>	<p>This uses an enhanced version of Perseus Search tool The search is for <i>polis</i> in Pausanias. Results in a list of Pausanias passages containing <i>polis</i> in various inflected forms (nominative, genitive <i>poleôs</i> etc., accusative <i>polin</i>, lemmatized search). Displays in a new browser tab. The list includes Book 1, Chapter 29. It takes quite a while for the results to display.</p>
<p>Click on the heading for a Pausanias section.</p>	<p>The full section is displayed.</p>
<p>Close the tab with the search results</p>	
<p>LSJ</p>	<p>Have a look at the entry. Each of the references to an author is a hyperlink to the passage in question. Follow on of the links; the text displays in a different tab; you may need to click on it. (If you follow an Od link, the tab will be labeled Home...)</p>

<p>Close the tab Greek Word Study Tool</p>	
<p>You should be back in the text tab. If you do not see the Pausanias text, use the browser back button until you are back there.</p>	
<p>More explanation of the Greek Word Search</p> <p>You put in two search criteria or starting points for the search:</p> <p>The Word <i>polis</i> and the Person <i>Pausanias</i></p> <p>Starting from <i>polis</i>, Perseus uses the relationship Word <<i>has-form</i>> Word form to find different forms of <i>polis</i>, such as <i>poleos</i> (genitive) and <i>polin</i> (accusative). In a second step, Perseus follows the relationship Word form <<i>contained-in</i>> Text object to find text objects (works). In parallel, Perseus starts from <i>Pausanias</i> and follows the relationship Person <<i>author-of</i>> Text object to find text objects (works). If a work is found both ways it meets both search criteria and is retrieved</p>  <pre> graph LR polis -- "Word form (any of polis, poleos, polin, etc.)" --> WO[Word form] Pausanias -- "Text object (work)" --> TO[Text object] WO --- AND[AND] AND --- TO </pre>	

Search in the dictionary.	
In the search box, type city and press [Enter] Click on here	You will do a search for all lexicon entries for which the English definition contains the word <i>city</i> . More specifically, all dictionary entries in which <i>city</i> is part of the definition of the Greek head word Note: Under All Search Options there is a Dictionary Entry Lookup, but the results are curious at best
Under Matching Dictionary Entries (134) View all 134...	This gives a (sort of) alphabetical list. It would be very nice if one could sort the list by frequency. As it is,
go to page 2 and find polis (the most frequent) Middle Liddell	The same entry you saw before when you started a word search from a word in a text
On page 1, find philopolis (Max. Inst. 30). Ctrl-F philo works best	
	In Perseus 3 one could get a list of Greek authors indicating how often each uses the word <i>philopolis</i> . One could then select an author and get to his passages in which <i>philopolis</i> appears. In Perseus 4, one can only find a list of all passages in which the word is used, sorted by author; the nice summary page is not available
In the philopolis line, click on <u>30</u> .	A list of passages from all Greek authors that include the word <i>philopolis</i> , giving the sentence in which the word occurs.
You can click on the ID of the passage (blue) to get to the full passage. From there, you can click on any word to get to its dictionary entry	
In the same way, do a dictionary search for theatre Watch the spelling, <i>theater</i> finds no dictionary entries	

After this guided tour, **do your own exploration**

You should note, that while Perseus is a wonderful system, it is quirky (especially Perseus 3), and its idiosyncracies get sometimes in the way of seeing principles. For example, in Perseus 3, full text search for a word does not find images that have been manually indexed by that word, only images that have the word in their caption. Sometimes, it just seems that the system is buggy. So if it does not do what it logically should do, that may be the reason

To log out, just close all browser windows.

Perseus 3 features lost in Perseus 4

Perseus 3 does not have as nice an interface and it is less stable, but it has a number of features that got lost in Perseus 4. Perseus 3 is still available at <http://perseus.mpiwg-berlin.mpg.de/>. An older version of the Perseus exercise using Perseus 3 will be posted on UBlerns.

The site descriptions were more complete and better structured

The sources and bibliography entries in the site descriptions were hyperlinks, and one could get a nicely formatted bibliographic record.

There was a button to plot all the sites mentioned in a site description (just as is now possible for texts)

On the site page there was a link [Buildings on this site](#) that would lead directly to a list of all the buildings on the site without having to do a search.

There was a site map with the many little circles with embedded arrows; clicking on a circle would bring up an image taken from that spot in the indicated direction. So one could take a walk around the site. Very cool, but does not work any more even in Perseus 3 on the Berlin site.

The dictionary search was more powerful, but the interface was not intuitive.

Assignment 2

Lecture 1.2

Assigned: Jan. 19**Due: Feb. 2****Bibliographic retrieval system exploration: Medline**

Objectives	<ol style="list-style-type: none"> 1 You should understand the role of hierarchy in searching. 2 Optional: You should understand some problems of free-text searching. <p>This assignment is used a lot as an example in later lectures</p>
Deliverables	<ol style="list-style-type: none"> 1 Answer Set 1 shown in Figure 4 with descriptors responsible for retrieval highlighted (for Documents 1 - 8) as explained in the assignment . 2 The filled-in work sheet (the work sheet asks some questions for analysis; it is found at the end of the assignment) (Part 1 required, Part 2 optional) 3 A brief individual essay (3/4 of a page) summing up your experience with this assignment. (What have you learned? What is the significance of it?)
Tasks (details in assignment)	<p>Analyze results of a given search</p> <ol style="list-style-type: none"> 1 to explore hierarchy and facets in searching (1a and 1b) 2 (optional) to explore free-text search: Uncontrolled vocabulary
Materials	<p>This assignment is based on a search in Medline, an online database of medical journal articles produced by the National Library of Medicine and searchable, among other places, with DIALOG (an online search system). There is no need to search Medline; the search statements and the resulting lists of references (called <i>answer sets</i>) are presented as part of the assignment, slightly reformatted for ease of analysis. In this assignment, you will first read the explanations (Section 0) and then do your own analysis (Sections 1 and 2).</p> <p>The assignment assumes that you have done some online searching so you can imagine the actual search. Even having done the Perseus assignment gives some idea, and surely everyone has searched an online library catalog. You have learned or will learn the Dialog system in LIS 518 Reference Sources and Services.</p> <p>I will try to arrange Dialog access to search Medline for those who would like to do so. Ask the GA.</p> <p>Note: You will need highlighters or colored pencils in two contrasting colors.</p>
Time	3 hrs

Note: Focus your attention on the conceptual aspects of the search. The syntax of the commands and the presentation format of the answer sets are incidental; you are not required to do your own search so you do not need to concern yourself with these details.

Outline

0 Introduction

- 0.1 General introduction: Search topic and hierarchy
- 0.2 Hierarchically expanded searching or the mighty exclamation point.
- 0.3 Searching with combination. General explanation

1 Explore hierarchy and facets in searching

- 2.1 Combination search with hierarchically expanded searching: Answer Set 1
- 2.2 Focusing the search: Using more specific descriptors or adding query components.

2 Explore free-text search: Uncontrolled vocabulary. Two searches, AND vs. (With)

0 Introduction

0.1 General introduction: Search topic and hierarchy

Medline is a database of documents, more precisely, of document records (rather than the full text). Its main entity type is Document. The relationship type of primary interest in this assignment is Document *deals with* Concept. Concepts are expressed as *descriptors* or subject headings drawn from a controlled list (*controlled vocabulary*), namely **MeSH (Medical Subject Headings)**.

The search is about the general topic of **Hearing tests** assisted by computers (**Computing methodologies**); thus the topic is a combination of **Hearing tests** and **Computing methodologies**. An important concept illustrated in this search is the use of hierarchy in searching. To this end we introduce various subtopics in which one or both components are made more specific, for example, **Audiometry** (under Hearing tests) using **Signal processing, computer-assisted** (under Computing methodologies). Relevant excerpts from the **MeSH Hierarchy ("Tree Structures")** are shown in Figure 1. Look it over so that you can recognize some of the terms as you analyze retrieval results.

C9	Otorhinolaryngologic diseases	L1	Information science
C9.218	. Ear diseases	L1.700	. Medical informatics
C9.218.458	. . . Hearing disorders	L1.700.508	. . . Medical informatics applications
C9.218.458.288	. . . . Deafness	L1.700.568	. . . Medical informatics computing
C9.218.458.500	. . . . Hearing loss, partial	L1.700.568.80	. . . . Computer systems (<i>with more NT</i>)
C9.218.458.500.481	. . . . . Hearing loss, sensorineural	L1.700.568.110	. . . . Computing methodologies
C9.218.458.500.481.432	. . . . . . Hearing loss, central	L1.700.568.110.50	. . . . . Algorithms
C9.218.458.500.481.460	. . . . . . Hearing loss, noise-induced	L1.700.568.110.65	. . . . . Artificial intelligence
C9.218.458.500.481.772	. . . . . . Presbycusis	L1.700.568.110.65.190	. . . . . Expert systems
		L1.700.568.110.65.250	. . . . . Fuzzy Logic
		L1.700.568.110.65.580	. . . . . Natural language processing
		L1.700.568.110.65.605	. . . . . Neural Networks (computer)
		L1.700.568.110.65.630	. . . . . Robotics
		L1.700.568.110.85	. . . . . Automatic data processing
		L1.700.568.110.85.800	. . . . . Punched-card systems
		L1.700.568.110.108	. . . . . Computer graphics
		L1.700.568.110.108.150	. . . . . Computer-aided design
		L1.700.568.110.160	. . . . . Computer simulation
		L1.700.568.110.308	. . . . . Image processing, computer-assisted
		L1.700.568.110.308.380	. . . . . Image-enhancement (<i>with more NT</i>)
		L1.700.568.110.680	. . . . . Mathematical computing
		L1.700.568.110.680.310	. . . . . Decision support technics
		L1.700.568.110.680.310.380	. . . . . Data interpretation, statistical
		L1.700.568.110.680.310.428	. . . . . Decision theory
		L1.700.568.110.680.310.480	. . . . . Decision trees
		L1.700.568.110.680.310.600	. . . . . Neural networks (computer)
		L1.700.568.110.680.700	. . . . . Numerical analysis, computer-assisted
		L1.700.568.110.800	. . . . . Signal processing, computer-assisted
		L1.700.568.180	. . . . . Computing milieu (<i>with more NT</i>)
		L1.700.568.810	. . . . . Software (<i>with more NT</i>)
		L1.725	. . . . . Pattern recognition
		L1.725.500	. . . . . Neural networks (computer)
		L1.737	. . . . . Publishing (<i>with more NT</i>)
		L1.906	. . . . . Systems analysis (<i>with more NT</i>)
E1	Diagnosis		
E1.276	. Diagnosis, otorhinolaryngologic		
E1.276.299	. . Diagnosis, ear		
E1.276.299.375	. . . Hearing tests		
E1.276.299.375.100	. . . . Acoustic impedance tests		
E1.276.299.375.297	. . . . Audiometry		
E1.276.299.375.297.45	. . . . . Audiometry, evoked response		
E1.276.299.375.297.92	. . . . . . Audiometry, pure-tone		
E1.276.299.375.297.105	. . . . . . Audiometry, speech		
E1.276.299.375.297.105.890	. . . . . . . Speech discrimination tests		
E1.276.299.375.297.105.902	. . . . . . . Speech reception threshold test		
E1.276.299.375.330	. . . . . Dichotic listening tests		
E1.276.299.375.570	. . . . . Recruitment detection (audiology)		
E1.276.299.816	. . . Vestibular function tests		
E1.276.299.816.250	. . . . Caloric tests		
E1.276.299.816.435	. . . . Electronystagmography		
E1.276.591	. . Laryngoscopy		
E1.276.660	. . Nasal provocation tests		

Note: The term numbers (also called codes or notations) make the connection between an alphabetical index and the hierarchy listing.

Figure 1. Medical Subject Headings (MeSH). Hierarchy ("Tree structures"). Excerpts

0.2 Hierarchically expanded searching or the mighty exclamation point.

A subject descriptor (a term or concept used to index a document), such as **Hearing tests**, that has narrower descriptors, for instance, **Audiometry**, **Acoustic impedance tests**, **Speech Discrimination Tests**, **Dichotic listening tests**, can be used for searching in two ways:

<p>Query Intro 1 general references search</p> <p>998 documents Answer Set Intro 1 see Figure 2</p>	<p>S Hearing tests</p>	<p>Simple search, narrower descriptors not included (S is DIALOG's command for entering a search statement and having the system retrieve an answer set.) Answer Set Intro #1 includes only documents indexed by the broad descriptor Hearing tests itself. This is called a <u>general references</u> search because it finds only documents that deal with Hearing tests in general.</p>
<p>Query Intro 2 inclusive search</p> <p>7667 documents Answer Set Intro 2 see Figure 3</p>	<p>S Hearing tests!</p>	<p>Inclusive search, narrower descriptors included More often than not, a user asking for a search on Hearing tests expects to find not only documents on Hearing tests in general but also documents on all the specific types of Hearing tests as shown in the MeSH hierarchy (Figure 1); this is referred to as an inclusive or hierarchically expanded search. To do a hierarchically expanded search in DIALOG, one puts an ! after the descriptor, for example.</p>

Check out the descriptors responsible for retrieval (shown in bold) in the general references search shown in Figure 2 and in the hierarchically expanded search shown in Figure 3. Of course, the hierarchically expanded search answer set includes all documents found in the general references search.

Note 1. In the document records some descriptors are marked with *. These descriptors indicate major topics in the document.

Note 2. Within a search, answer sets are numbered and within an answer set, documents are numbered.

Figure 2. **Answer Set Intro 1. General references search** (998 documents)
 (Descriptors responsible for retrieval are shown in **bold**)

Query 1	<p>?B 154 File 154:MEDLINE®) 1985-1998/Feb W4</p> <p>?S hearing tests Result: S1 998 documents found</p> <p>?T 1/8/1-5</p>	<p>Begins a new search in database (file) 154, Medline ? is the Dialog prompt, followed by the Dialog command</p> <p>General references search</p> <p>Print (Type) from set 1 in format 8 (title and descriptors) records 1-5.</p>
<p>1/8/1</p> <ul style="list-style-type: none"> ● Speech perception performance of children with a cochlear implant compared to that of children with conventional hearing aids. II. Results of prelingually deaf children. <p><i>Tags:</i> Human <i>Descriptors:</i> *Cochlear Implants; *Deafness--Rehabilitation; *Hearing Aids; Age of Onset; Deafness--congenital; Deafness--Etiology; Hearing Tests; Meningitis--Complications; Speech Discrimination Tests</p> <p>1/8/2</p> <ul style="list-style-type: none"> ● Speech perception performance of children with a cochlear implant compared to that of children with conventional hearing aids. I. The "equivalent hearing loss" concept. <p><i>Tags:</i> Comparative Study; Human <i>Descriptors:</i> *Cochlear Implants; *Deafness--Rehabilitation; *Hearing Aids; *Hearing Loss, Partial--Rehabilitation; *Speech Perception; Child ; Hearing Tests; Speech Discrimination Tests</p> <p>1/8/3</p> <ul style="list-style-type: none"> ● Audiometric evaluation of hearing loss in children. <p><i>Tags:</i> Human <i>Descriptors:</i> *Deafness--Diagnosis--DI; Child, Preschool; Cochlear Implantation; Deafness--Rehabilitation; Hearing Aids; Hearing Tests; Infant; Infant, Newborn</p> <p>1/8/4</p> <ul style="list-style-type: none"> ● Desferrioxamine in chronic progressive multiple sclerosis: a pilot study. <p><i>Tags:</i> Female; Human; Male <i>Descriptors:</i> *Antidotes--Pharmacology; *Deferoxamine--Pharmacology; *Multiple Sclerosis--Drug Therapy; Adult; Chronic Disease; Hearing Tests; Middle Age; Neurologic Examination; Pilot Projects</p> <p>1/8/5</p> <ul style="list-style-type: none"> ● Functional hearing results in revision stapes surgery. <p><i>Tags:</i> Comparative Study; Female; Human; Male <i>Descriptors:</i> *Hearing Loss, Conductive--Diagnosis; *Hearing Loss, Conductiveiology; *Ossicular Prosthesis; *Prosthesis Failure; *Reoperation; *Stapes Surgery--Adverse Effects; Adult; Aged; Auditory Threshold; Ear Ossicles--Surgery; Follow-Up Studies; Hearing Tests; Middle Age; Retrospective Studies</p>		

Figure 3. **Answer Set Intro 2. Hierarchically expanded search** (7667 documents found)

Query 2	?S hearing tests! Result: S2 7667 documents found. ?T 2/8/1-30	! means hierarchically expanded or inclusive search Print from set 2 in format 8 records 1-30
<p>2/8/1</p> <ul style="list-style-type: none"> ● Comparison of TEOAE with Play audiometry for screening hearing problems in children. <i>Tags:</i> Comparative Study; Female; Human; Male <i>Descriptors:</i> *Audiometry, Pure-Tone; *Auditory Threshold--Physiology; *Mass Screening; *Otoacoustic Emissions, Spontaneous--Physiology; *Play and Playthings; Acoustic Impedance Tests; Child, Preschool; Hearing Loss, Conductive--Diagnosis; Hearing Loss, Conductive--Prevention and Control; Hearing Loss, Conductive--Physiopathology; Hearing Loss, Sensorineural--Diagnosis; Hearing Loss, Sensorineural--Prevention and Control; Hearing Loss, Sensorineural--Physiopathology; Reference Values; Sensitivity and Specificity <p>2/8/5</p> <ul style="list-style-type: none"> ● Electrocochleographic evaluation of the guinea pig model of endolymphatic hydrops. <i>Tags:</i> Animal; Comparative Study; Female; Male <i>Descriptors:</i> *Audiometry, Evoked Response--Methods; *Disease Models, Animal; *Endolymphatic Hydrops--Diagnosis; Action Potentials; Auditory Threshold; Dehydration--Complications; Endolymphatic Hydrops--Chemically Induced; Glycerol; Guinea Pigs; Meniere's Disease--Physiopathology; Osmolar Concentration; Recruitment (Neurology); Reproducibility of Results; Urea <p>2/8/8</p> <ul style="list-style-type: none"> ● Otitis-prone children and controls: a study of possible predisposing factors. 2. Physical findings, frequency of illness, allergy, day care and parental smoking. <i>Tags:</i> Female; Human; Male; Support, Non-U.S. Gov't <i>Descriptors:</i> *Otitis Media--Etiology; Acoustic Impedance Tests; Acute Disease; Audiometry; Case-Control Studies; Causality; Child Care; Child, Preschool; Hypersensitivity--Complications; Otitis Media--Microbiology; Otorhinolaryngologic Diseases--Complications; Parents; Physical Examination; Questionnaires; Recurrence; Retrospective Studies; Smoking--Adverse Effects <p>2/8/13 = 1/8/3</p> <ul style="list-style-type: none"> ● Audiometric evaluation of hearing loss in children. <i>Tags:</i> Human <i>Descriptors:</i> *Deafness--Diagnosis; Child, Preschool; Cochlear Implantation; Deafness--Rehabilitation; Hearing Aids; Hearing Tests; Infant; Infant, Newborn <p>2/8/34</p> <ul style="list-style-type: none"> ● Frequency discrimination of stylized synthetic vowels with a single formant. <i>Tags:</i> Female; Human; Male; Support, Non-U.S. Gov't <i>Descriptors:</i> *Phonetics; *Speech Perception; *Speech, Alaryngeal; Adult; Middle Age; Speech Discrimination Tests; Time Factors <p>2/8/44</p> <ul style="list-style-type: none"> ● Developmental instability and cerebral lateralization. <i>Tags:</i> Female; Human; Male <i>Descriptors:</i> *Developmental Disabilities--Physiopathology; *Laterality--Physiology; Adolescence; Adult; Child; Cognition--Physiology; Developmental Disabilities--Psychology; Dichotic Listening Tests; Face; Middle Age; Neuropsychological Tests; Psychomotor Performance--Physiology 		

0.3 Searching with combination. General explanation

The topic of this search has two components, **Hearing tests** and **Computing methodologies**. Each component expresses a different aspect or **facet** of the search topic, namely **Diagnosis** and **General methodology** (with the more specific concept **Computing methodology** under it). **Both** component descriptors must be present to make a document relevant; the descriptors are combined with Boolean **AND**.

Hearing tests AND Computing methodologies.

The hierarchy under each descriptor is shown in Figure 1.

The user may be interested in all **Computing methodologies** (hierarchically expanded search) or only in a specific type, e.g. **Signal processing, computer-assisted**, or the user's interests may lie in between: She may need all documents that deal with, **Signal processing, computer-assisted** or **Computer simulation**, or both; the descriptors are combined by **OR**.

Signal processing, computer-assisted OR Computer simulation

Continuing the search, here is an example of the difference between general reference and hierarchically expanded searching when combining two descriptors (just look at the numbers):

?S computing methodologies	Result: S3	31 documents found
?S computing methodologies!	Result: S4	73447 documents found
?S hearing tests AND computing methodologies	Result: S5	0 documents found
?S hearing tests! AND computing methodologies!	Result: S6	214 documents found

1 Explore hierarchy and facets in searching

We now start a new search to explore the effects of using more and more specific descriptors in the query formulation and of adding more components joined with AND. Answer sets are numbered from 1 in the new search.

?B 154

Begin a new search

File 154:MEDLINE®) 1985-1998/Feb

?limitall/maj, eng

Limits the search to major descriptors (documents in which the topic is major), and to documents in English in all subsequent searches

1.1 Combination search with hierarchically expanded searching: Answer Set 1

<p>Query 1</p>	<p>?S hearing tests! AND computing methodologies! (now limited to major descriptors, English)</p> <p>Result: S1 29 documents found Answer Set 1, shown in Figure 4</p> <p>?T 1/8/1-29 Print Answer Set 1 in format 8</p>
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Figure 4. **Answer Set 1. Combination search with hierarchic expansion** (For Tasks 1a and 1b)

Task 1a: Visualize the combination of descriptors from two facets in retrieval, with hierarchy in each facet. For Documents **1 - 8** (enough to get the idea), highlight the descriptors responsible for retrieval, using red for the descriptors from the **Diagnosis facet** (e.g., **Hearing tests** or **Audiometry**) and green for the descriptor from the **Methodology facet** (e.g., **Algorithms**) (see hierarchy in Figure 1 or Figure 5) (any other contrasting color pair will do). The descriptors of interest are bolded to facilitate your task. In this search only major descriptors (marked with *) are used for retrieval. **To be handed in.**

Answer Set 1/Format 8/Document no	For the analysis required in 1.2, you need the answer sets in which document is included as given here.
1/8/1	Answer Set 1
<ul style="list-style-type: none"> ● Speech recognition in noise. Development of a computerized test and preparation of test material. <p><i>Tags:</i> Human <i>Descriptors:</i> *Computer-Aided Design; *Noise--Adverse Effects; *Speech Perception; *Speech Reception Threshold Test; Audiometry, Speech ; Hearing Loss, Sensorineural</p>	
1/8/2	Answer Sets 1, 2, 3, 4, 5
<ul style="list-style-type: none"> ● Effect of sampling frequencies and averaging resolution on medical parameters of auditory brainstem responses. <p><i>Tags:</i> Human <i>Descriptors:</i> *Audiometry, Evoked Response--Methods; *Evoked Potentials, Auditory, Brain Stem--Physiology; *Signal Processing, Computer-Assisted; Acoustic Stimulation; Adolescence; Adult; Aged; Artifacts; Child; Child, Preschool; Middle Age; Pattern Recognition; Reaction Time</p>	
1/8/3	Answer Set 1
<ul style="list-style-type: none"> ● Composite probability modeling of increasing resolution where diagnostic covariates are unmeasurable for some subjects. <p><i>Tags:</i> Human <i>Descriptors:</i> *Algorithms; *Audiometry, Evoked Response--Statistical and Numerical Data; *Evoked Potentials, Auditory, Brain Stem--Physiology; *Models, Statistical; *Neuroma, Acoustic--Diagnosis; *Reaction Time--Physiology; Adult; Brain Stem--Physiopathology; Cochlear Diseases--Diagnosis; Cochlear Diseases--Physiopathology; Diagnosis, Differential; Neuroma, Acoustic--Physiopathology; Prognosis; ROC Curve; Sensitivity and Specificity</p>	
1/8/4	Answer Set 1
<ul style="list-style-type: none"> ● A neural network approach to the prediction of pure tone thresholds with distortion product emissions. <p><i>Tags:</i> Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't <i>Descriptors:</i> *Audiometry, Pure-Tone; *Auditory Threshold; *Hearing Disorders--Diagnosis; *Neural Networks (Computer); *Otoacoustic Emissions, Spontaneous; Adolescence; Adult; Aged; Aged, 80 and over; Discriminant Analysis; Middle Age; Predictive Value of Tests; Reproducibility of Results</p>	
1/8/5	Answer Set 1
<ul style="list-style-type: none"> ● Automated electrophysiologic hearing testing using a threshold-seeking algorithm. <p><i>Tags:</i> Female; Human; Male; Support, U.S. Gov't, P.H.S. <i>Descriptors:</i> *Algorithms; *Audiometry, Evoked Response--Methods; *Auditory Threshold; *Hearing Disorders--Diagnosis; Adolescence; Adult; Aged; Aged, 80 and over; Audiometry, Pure-Tone; Child, Preschool; Diagnosis, Computer-Assisted--Methods; Evoked Potentials, Auditory, Brain Stem; Infant; Middle Age; Regression Analysis; Reproducibility of Results</p>	

1/8/6

Answer Sets 1, 2

- Measurement of acoustic impedance and reflectance in the human ear canal.

Tags: Female; Human; Male

Descriptors: ***Acoustic Impedance Tests**; ***Computer Simulation**; *Ear Canal--Physiology; *Hearing--Physiology; Adolescence; Adult; Auditory Threshold--Physiology; Calibration; Neural Networks (Computer) ; Pitch Perception--Physiology; Reference Values

1/8/7

Answer Sets 1, 2, 3, 4, 5

- Electrocochleography in syphilitic hearing loss.

Tags: Female; Human; Male

Descriptors: ***Audiometry, Evoked Response**--Instrumentation; *Labyrinthitis--Diagnosis; *Neurosyphilis--Diagnosis; ***Signal Processing, Computer-Assisted**--Instrumentation; Adult; Aged; Deafness, Sudden--Diagnosis; Deafness, Sudden--Physiopathology; Diagnosis, Differential; Edema--Diagnosis; Edema--Physiopathology; Endolymph--Physiology; Hearing Loss, Sensorineural--Diagnosis; Hearing Loss, Sensorineural--Physiopathology; Labyrinthitis--Physiopathology; Meniere's Disease--Diagnosis; Meniere's Disease--Physiopathology; Microcomputers; Middle Age; Neurosyphilis--Physiopathology

1/8/8

Answer Sets 1, 2, 3, 4, 5

- Intraoperative electrocochleography of endolymphatic hydrops surgery using clicks and tone bursts.

Tags: Female; Human; Male

Descriptors: ***Audiometry, Evoked Response**--Instrumentation; *Edema--Surgery; *Endolymph--Physiology; *Endolymphatic Shunt; *Intraoperative Monitoring--Instrumentation; *Meniere's Disease--Surgery; ***Signal Processing, Computer-Assisted**--Instrumentation; Acoustic Stimulation--Methods; Adolescence; Adult; Aged; Child; Cochlear Nerve--Physiopathology; Edema--Physiopathology; Meniere's Disease--Physiopathology; Middle Age

1/8/9

Answer Sets 1, 2, 3

- An inexpensive alternative for recording middle ear muscle activity (MEMA) during sleep.

Tags: Comparative Study; Female; Human; Male

Descriptors: ***Acoustic Impedance Tests**--Instrumentation; *Ear, Middle--Physiology; *Muscle Contraction--Physiology; *Polysomnography--Instrumentation; ***Signal Processing, Computer-Assisted**--Instrumentation; *Sleep Stages--Physiology; *Transducers, Pressure; Adult; Arousal--Physiology; Equipment Design; Middle Age; Reference Values

1/8/10

Answer Set 1

- Komputerowa analiza, identyfikacja i graficzna prezentacja badan ABR--system audiometrii klinicznej. [Computer analysis, identification and graphic representation of ABR research--clinical audiometric system]

Tags: Human

Descriptors: ***Audiometry, Pure-Tone**; ***Computer Graphics**; *Diagnosis, Computer-Assisted; *Hearing Disorders--Diagnosis; *Microcomputers; Programming Languages; Software Design

1/8/11

Answer Sets 1, 2, 3, 4

- Analysis of the analog circuit's SNR in the selection of ADC bit resolution [letter; comment]

Tags: Human

Descriptors: ***Audiometry**--Instrumentation; *Equipment Design--Standards; ***Signal Processing, Computer-Assisted**--Instrumentation; *Speech Intelligibility

1/8/12

Answer Sets 1, 6

- New draft ANSI standard enhances efforts in hearing conservation.

Tags: Human

Descriptors: ***Audiometry--Methods**; ***Data Interpretation, Statistical**; *Ear Protective Devices--Standards; *Hearing Loss, Noise-Induced--Prevention and Control; *Mass Screening--Methods; *Occupational Diseases--Prevention and Control; Databases, Factual; Equipment Failure; United States

1/8/13

Answer Sets 1, 2, 3

- Simulating reflex induced changes in the acoustic impedance of the ear.

Tags: Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: ***Acoustic Impedance Tests--Instrumentation**; *Reflex, Acoustic; ***Signal Processing, Computer-Assisted--Instrumentation**; Auditory Threshold; Equipment Design; Reference Values

1/8/14

Answer Sets 1, 2, 3, 4, 6

- An evaluation of two signal-processing hearing aids.

Tags: Comparative Study; Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Hearing Aids; *Hearing Loss, Sensorineural--Rehabilitation; ***Signal Processing, Computer-Assisted--Instrumentation**; ***Speech Reception Threshold Test**; Aged; Equipment Design; Middle Age; Perceptual Masking

1/8/15

Answer Sets 1, 2

- Optimization of automated hearing test algorithms: a comparison of data from simulations & young children.

Tags: Comparative Study; Human; Support, U.S. Gov't, P.H.S.

Descriptors: ***Algorithms**; *Auditory Threshold; ***Computer Simulation**; ***Hearing Tests--Methods**; *Models, Biological; Analysis of Variance; Child, Preschool; Infant

1/8/16

Answer Sets 1, 2

- Optimization of automated hearing test algorithms: simulations using an infant response model.

Tags: Human; Support, U.S. Gov't, P.H.S.

Descriptors: ***Algorithms**; *Auditory Threshold; ***Computer Simulation**; ***Hearing Tests--Methods**; *Models, Biological; Analysis of Variance; Infant

1/8/17

Answer Sets 1, 2, 3, 4

- New hearing threshold measurements for pure tones under free-field listening conditions.

Tags: Female; Human; Male; Support, Non-U.S. Gov't

Descriptors: ***Audiometry, Pure-Tone--Instrumentation**; *Auditory Threshold; ***Signal Processing, Computer-Assisted--Instrumentation**; Loudness Perception; Psychoacoustics; Reference Values

1/8/18

Answer Sets 1, 2, 3, 4, 6, 7

- On enhancement of spectral contrast in speech for hearing-impaired listeners.

Tags: Female; Human; Male; Support, U.S. Gov't, P.H.S.

Descriptors: *Hearing Aids; *Hearing Loss, Sensorineural--Rehabilitation; *Microcomputers; ***Signal Processing, Computer-Assisted--Instrumentation**; *Sound Spectrography--Instrumentation; ***Speech Discrimination Tests**; Adult; Phonetics; Sensory Thresholds

1/8/19

Answer Sets 1, 6

- Classification of audiograms by sequential testing using a dynamic Bayesian procedure.

Tags: Human; Support, U.S. Gov't, P.H.S.

Descriptors: ***Algorithms**; ***Audiometry, Pure-Tone--Classification--CL**; *Bayes Theorem; *Hearing Loss, Sensorineural--Diagnosis; Attention; Auditory Threshold; Computer Simulation; Reproducibility of Results

1/8/20

Answer Sets 1, 2, 3, 4

- A comparison of the variability in thresholds measured with insert and conventional supra-aural earphones.

Tags: Comparative Study; Human

Descriptors: ***Audiometry--Instrumentation**; ***Audiometry, Pure-Tone--Instrumentation**; *Auditory Threshold; ***Signal Processing, Computer-Assisted**; Adult; Equipment Design; Middle Age; Reference Values

1/8/21

Answer Sets 1, 2

- Computer simulation of the patient for training in audiometry.

Tags: Human

Descriptors: ***Audiometry**; ***Audiometry, Pure-Tone**; ***Computer Simulation**; Allied Health Personnel--Education

1/8/22

Answer Set 1

- Comparison of manual and computer-controlled self-recorded audiometric methods for serial monitoring of hearing.

Tags: Comparative Study; Human

Descriptors: ***Algorithms**; ***Audiometry--Methods**; ***Audiometry, Pure-Tone--Methods**; ***Automatic Data Processing**; Auditory Threshold--Physiology; Evaluation Studies; Follow-Up Studies

1/8/23

Answer Sets 1, 2, 3, 4, 5, 6, 7

- Auditory brainstem evoked potentials peak identification by finite impulse response digital filters.

Tags: Female; Human; Male

Descriptors: ***Audiometry, Evoked Response--Instrumentation**; *Brain Stem--Physiopathology; *Hearing Loss, Central--Diagnosis; *Hearing Loss, Sensorineural--Diagnosis; ***Signal Processing, Computer-Assisted**; Adult; Algorithms; Evoked Potentials, Auditory; Hearing Loss, Central--Physiopathology; Hearing Loss, Sensorineural--Physiopathology; Reaction Time--Physiology

1/8/24

Answer Sets 1, 2, 3, 4

- Developmental changes in high-frequency sensitivity.

Tags: Female; Human; Male; Support, Non-U.S. Gov't

Descriptors: ***Audiometry--Instrumentation**; ***Audiometry, Pure-Tone--Instrumentation**; *Child Development; *Hearing Loss, High-Frequency--Diagnosis; *Microcomputers; *Pitch Discrimination; ***Signal Processing, Computer-Assisted**; Adolescence; Adult; Auditory Threshold; Child; Child, Preschool; Hearing Loss, Noise-Induced--Diagnosis; Hearing Loss, Partial; Infant; Reference Values; Sound Localization

1/8/25

Answer Sets 1, 2, 3, 4

- A comparison between coupler gain and insertion gain of hearing aids as used in partially hearing units in five schools in Belfast.

Tags: Comparative Study; Human

Descriptors: ***Audiometry--Instrumentation**; ***Audiometry, Pure-Tone--Instrumentation**; *Deafness--Rehabilitation; *Education, Special; *Hearing Aids; *Microcomputers; ***Signal Processing, Computer-Assisted**; Auditory Threshold; Child; Psychoacoustics

1/8/26

Answer Sets 1, 2

- Evaluation of stopping rules for audiological ascending test procedures using computer simulations.

Tags: Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: ***Audiometry--Standards**; ***Computer Simulation**; *Models, Statistical; Auditory Threshold; Psychometrics; Random Allocation; Sampling Studies

Documents 27 - 29 skipped to save space

1.2 Focusing the search: Using more specific descriptors or adding query components.

(Continuation of the search started in 1.1, answer set numbering continues)

This page presents the remainder of the search statements (query formulations) for the main search. The answer sets are not printed; Figure 4 records for each document the answer sets in which it is included. The hierarchy of the search statements is shown in Figure 6 and the search results are summarized in Figure 7.

Task 1b: Analyze the results and answer questions 1.1 - 1.4 in the worksheet on p. 45.

Query 2	?S hearing tests! AND (signal processing, computer-assisted OR computer simulation) Result: S2 20 documents found. Answer Set 2 ?T 2/6/1-20 (only two sample documents shown) 2/6/1 ● Effect of sampling frequencies and averaging resolution on medical parameters of auditory brainstem responses. 2/6/2 ● Measurement of acoustic impedance and reflectance in the human ear canal.	Second component narrowed
Query 3	?S hearing tests! AND signal processing, computer-assisted Result: S3 15 documents found. Answer Set 3 Note: The print statements are not shown in the remainder	Second component narrowed further
Query 4	?S audiometry! AND signal processing, computer-assisted Result: S4 11 documents found. Answer Set 4	First component narrowed
Query 5	?S audiometry, evoked response AND signal processing, computer-assisted Result: S5 4 documents found. Answer Set 5	First component narrowed further
Query 6	?S s1 AND hearing loss, sensorineural! Result: S6 6 documents found. Answer Set 6	Third component added, further restricting results
Query 7	?S s6 AND adult Result: S7 3 documents found. Answer Set 7	Fourth component added, still further restricting results

C9	Otorhinolaryngologic diseases	L1	Information science
C9.218	. Ear diseases	L1.700	. Medical informatics
C9.218.458	. . Hearing disorders	L1.700.508	. . Medical informatics applications
C9.218.458.288	. . . Deafness	L1.700.568	. . . Medical informatics computing
C9.218.458.500	. . . . Hearing loss, partial	L1.700.568.80	. . . . Computer systems (<i>with more NT</i>)
C9.218.458.500.481	. . . . . Hearing loss, sensorineural	L1.700.568.110	. . . . . Computing methodologies
C9.218.458.500.481.432	. . . . . . Hearing loss, central	L1.700.568.110.50	. . . . . Algorithms
C9.218.458.500.481.460	. . . . . . . Hearing loss, noise-induced	L1.700.568.110.65	. . . . . Artificial intelligence
C9.218.458.500.481.772	. . . . . . . . Presbycusis	L1.700.568.110.65.190	. . . . . . Expert systems
		L1.700.568.110.65.250	. . . . . . . Fuzzy Logic
		L1.700.568.110.65.580	. . . . . . . Natural language processing
		L1.700.568.110.65.605	. . . . . . . Neural Networks (computer)
		L1.700.568.110.65.630	. . . . . . . Robotics
		L1.700.568.110.85	. . . . . . . Automatic data processing
		L1.700.568.110.85.800	. . . . . . . Punched-card systems
		L1.700.568.110.108	. . . . . . . Computer graphics
		L1.700.568.110.108.150	. . . . . . . Computer-aided design
		L1.700.568.110.160	. . . . . . . Computer simulation
		L1.700.568.110.308	. . . . . . . Image processing, computer-assisted
		L1.700.568.110.308.380	. . . . . . . Image-enhancement (<i>with more NT</i>)
		L1.700.568.110.680	. . . . . . . Mathematical computing
		L1.700.568.110.680.310	. . . . . . . Decision support technics
		L1.700.568.110.680.310.380	. . . . . . . Data interpretation, statistical
		L1.700.568.110.680.310.428	. . . . . . . Decision theory
		L1.700.568.110.680.310.480	. . . . . . . Decision trees
		L1.700.568.110.680.310.600	. . . . . . . Neural networks (computer)
		L1.700.568.110.680.700	. . . . . . . Numerical analysis, computer-assisted
			. . . . . Signal processing, computer-assisted
			. . . . . Computing milieu (<i>with more NT</i>)
			. . . . . Software (<i>with more NT</i>)
			. . . . . Pattern recognition
			. . . . . Neural networks (computer)
			. . . . . Publishing (<i>with more NT</i>)
			. . . . . Systems analysis (<i>with more NT</i>)
E1	Diagnosis	L1.700.568.110.800	
E1.276	. Diagnosis, otorhinolaryngologic	L1.700.568.180	
E1.276.299	. . Diagnosis, ear	L1.700.568.810	
E1.276.299.375	. . . Hearing tests	L1.725	
E1.276.299.375.100	. . . . Acoustic impedance tests	L1.725.500	
E1.276.299.375.297	. . . . . Audiometry	L1.737	
E1.276.299.375.297.45	. . . . . . Audiometry, evoked response	L1.906	
E1.276.299.375.297.92	. . . . . . . Audiometry, pure-tone		
E1.276.299.375.297.105	. . . . . . . Audiometry, speech		
E1.276.299.375.297.105.890	. . . . . . . . Speech discrimination tests		
E1.276.299.375.297.105.902	. . . . . . . . . Speech reception threshold test		
E1.276.299.375.330	. . . . . . . . . Dichotic listening tests		
E1.276.299.375.570	. . . . . . . . . Recruitment detection (audiology)		
E1.276.299.816	. . . . . Vestibular function tests		
E1.276.299.816.250	. . . . . . Caloric tests		
E1.276.299.816.435	. . . . . . . Electronystagmography		
E1.276.591	. . . Laryngoscopy		
E1.276.660	. . Nasal provocation tests		

Note: The term numbers (also called codes or notations) make the connection between an alphabetical index and the hierarchy listing.

Figure 5. Medical Subject Headings (MeSH). Hierarchy ("Tree structures"). Excerpts (Figure 1 repeated)

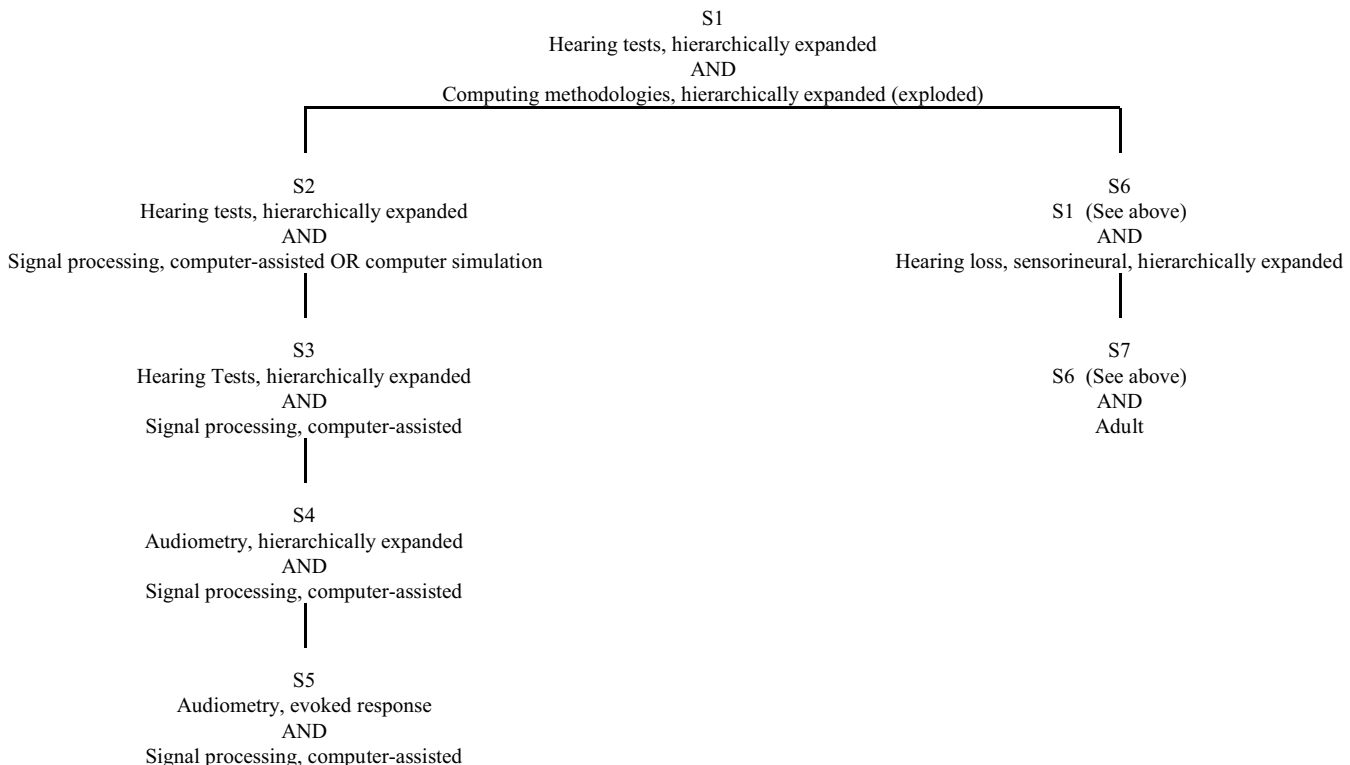


Figure 6: Hierarchy of query formulations

		includes						
	First title words	S1	S2	S3	S4	S5	S6	S7
1	Speech recognition in noise	•						
2	Effect of sampling frequency	•	•	•	•	•		
3	Composite probability model	•						
4	A neural network approach	•						
5	Automated electrophysiologic	•						
6	Measurement of acoustic	•	•					
7	Electrocochleography in syph	•	•	•	•	•		
8	Intraoperative electrocochleog	•	•	•	•	•		
9	An inexpensive alternative	•	•	•				
10	Komputerwa analiza, identyf	•						
11	Analysis of the analog circ	•	•	•	•			
12	New draft ANSI standard	•					•	
13	Simulating reflex induced	•	•	•				
14	An evaluation of two signal-	•	•	•	•		•	
15	Optimization...children	•	•					
16	Optimization...infant	•	•					
17	New hearing threshold meas	•	•	•	•			
18	On enhancement of spectral	•	•	•	•		•	•
19	Classification of audiograms	•					•	
20	A comparison of the variabil	•	•	•	•			
21	Computer simulation of the	•	•					
22	Comparison of manual and	•						
23	Auditory brainstem evoked	•	•	•	•	•	•	•
24	Developmental changes in	•	•	•	•			
25	A comparison between coupl	•	•	•	•			
26	Evaluation of stopping rules	•	•					
27	Validation of addition and	•						
28	Temporal characteristics of	•	•	•				
29	Click-evoked oto-acoustic	•	•	•			•	•

Figure 7: Search result summary. Documents found with search statements S1 - S7

2 Exploring free-text search: Uncontrolled vocabulary. AND vs. (With)

(Task 2, Worksheet questions 2.1 - 2.3 on p. 46) This section is optional

<p>Query 8</p>	<p>?S hearing/ti AND test?/ti</p> <p>Result: S8 183 documents found Answer Set 8, Figure 8.</p>	<p>Search words in the title (not assigned descriptors) The title must contain both words somewhere ? is the truncation symbol (test, tests, testing are all found)</p> <p>75% of the documents found are relevant (the restriction to title words helps); the selection here over-represents false retrieval so that the reasons for false retrieval can be explored.</p>
<p>Query 9</p>	<p>?S hearing/ti (W) test?/ti</p> <p>Result: S9 36 documents found Answer Set 9, Figure 9.</p>	<p>Search in the title, word 1 followed immediately by word 2.</p> <p>97% of all documents found are relevant</p>

Figure 8. Answer Set 8: hearing/ti AND test?/ti

<p>8/8/1</p> <ul style="list-style-type: none"> ● Hearing tests in extended high frequency range in pre-school age children. Initial results <i>Tags:</i> Female; Human; Male <i>Descriptors:</i> *Audiometry, Pure-Tone--Instrumentation; *Hearing Loss, High-Frequency--Prevention and Control; *Mass Screening; Adult; Auditory Threshold; Berlin; Child; Child, Preschool; Hearing Loss, High-Frequencyiology; Reference Values <p>8/8/2</p> <ul style="list-style-type: none"> ● IHAFf loudness contour test: reliability and effects of approach mode in normal-hearing subjects. <i>Tags:</i> Comparative Study; Human <i>Descriptors:</i> *Hearing--Physiology; *Loudness Perception; Audiometry, Pure-Tone; Hearing Aids; Random Allocation; Reproducibility of Results; Speech Perception <p>8/8/3</p> <ul style="list-style-type: none"> ● Effects of otitis on hearing in dogs characterised by brainstem auditory evoked response testing. <i>Tags:</i> Animal; Support, Non-U.S. Gov't <i>Descriptors:</i> *Dog Diseases--Physiopathology; *Evoked Potentials, Auditory, Brain Stem--Physiology; *Hearing Loss, Functional--Veterinary; *Otitis--Veterinary; Dogs; Hearing Loss, Functional--Complications; Hearing Tests--Methods; Hearing Tests--Veterinary; Otitis--Complications; Otitis--Physiopathology

8/8/4

- New computerized Finnish speech in noise **test** and binaural **hearing**.

Tags: Human

Descriptors: *Hearing--Physiology; *Speech Perception--Physiology--PH ; *Speech Reception Threshold Test--Methods; Reference Values

8/8/6

- Otoacoustic emission and auditory efferent function **testing** in normal subjects and patients with sensori-neural **hearing** loss

Tags: Human

Descriptors: *Auditory Pathways--Physiopathology; *Cochlea--Physiopathology; *Hearing Loss, Sensorineural--Physiopathology; *Otoacoustic Emissions, Spontaneous; Acoustic Impedance Tests; Adult; Evoked Potentials, Auditory, Brain Stem; Neuroma, Acoustic--Physiopathology

8/8/7

- **Test** of the health promotion model as a causal model of construction workers' use of **hearing** protection.

Tags: Female; Human; Male; Support, U.S. Gov't, P.H.S.

Descriptors: *Ear Protective Devices; *Health Promotion; *Hearing Loss, Noise-Induced--Prevention and Control; *Models, Nursing; *Models, Psychological; *Occupational Diseases--Prevention and Control; Adult; Analysis of Variance; Factor Analysis, Statistical; Health Behavior; Knowledge, Attitudes, Practice; Predictive Value of Tests; Questionnaires; Reproducibility of Results

8/8/8

= 9/8/1

- Preauricular tags and pits in the newborn: the role of **hearing tests**.

Tags: Human

Descriptors: *Audiometry; *Ear, External--Abnormalities; Evoked Potentials, Auditory, Brain Stem; Hearing Disorders--Congenital; Hearing Disorders--Complications; Infant; Infant, Newborn; Prospective Studies

8/8/11

= 9/8/2

- Use of the distraction **hearing test** in children with congenital ocular motor apraxia.

Tags: Case Report; Female; Human

Descriptors: *Apraxia--Complications; *Hearing Loss, Sensorineural--Complications; *Hearing Loss, Sensorineural--Diagnosis; *Hearing Tests--Methods; Child; Eye Movements

8/8/21

= 9/8/5

- Early **hearing testing** of still critically ill neonates.

Tags: Female; Human; Male; Support, Non-U.S. Gov't

Descriptors: *Audiometry, Evoked Response--Methods; *Hearing Loss, Sensorineural--Diagnosis--DI; *Intensive Care Units, Neonatal; Audiometry, Evoked Response--Instrumentation; Chi-Square Distribution; Critical Illness; Evoked Potentials, Auditory, Brain Stem

8/8/22

- Computer-stimulated **test** fitting of an implantable **hearing** aid using implantable **hearing** aid using three-dimensional CT scans of the temporal bone: preliminary study.

Tags: Human

Descriptors: *Cochlear Implant; *Image Processing, Computer-Assisted; *Prosthesis Fitting; *Temporal Bone--Radiography; *Tomography, X-Ray Computed; Deafness--Rehabilitation

8/8/29

- Efficiency of screening procedures for assigning levels of the Stanford Achievement **Test** (eighth edition) to students who are deaf or hard of **hearing**.

Tags: Human

Descriptors: *Deafness; *Educational Measurement; *Mathematics; *Reading

8/8/36

- Classroom attributes and achievement **test** scores for deaf and hard of **hearing** students.

Tags: Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Achievement; *Deafness; *Hearing Disorders; Adolescence; Child; Cohort Studies; Mathematics; Reading; Schools; Students

8/8/41

= 9/8/7

- Correlation between the American Academy of Otolaryngology-Head and Neck Surgery five-minute **hearing test** and standard audiologic data.

Tags: Female; Human; Male

Descriptors: *Hearing Disorders--Diagnosis; *Hearing Tests; Aged; Middle Age; Questionnaires; Sensitivity and Specificity

8/8/47

= 9/8/8

- Automated electrophysiologic **hearing testing** using a threshold-seeking algorithm.

Tags: Female; Human; Male; Support, U.S. Gov't, P.H.S.

Descriptors: *Algorithms; *Audiometry, Evoked Response--Methods; *Auditory Threshold; *Hearing Disorders--Diagnosis; Adolescence; Adult; Aged; Aged, 80 and over; Audiometry, Pure-Tone; Child, Preschool; Diagnosis, Computer-Assisted--Methods; Evoked Potentials, Auditory, Brain Stem; Infant; Middle Age; Regression Analysis; Reproducibility of Results

8/8/54

= 9/8/11

- Fair **hearing testimony**.

Tags: Female; Human

Descriptors: *Medical Staff Privileges--Standards; *Obstetrics --Standards; *Physicians, Family; Cesarean Section; Expert Testimony; Missouri; Pregnancy; Societies, Medical; United States

8/8/65

- RNs **testify** at DHS **hearing**: 'our patients need protection!'

Tags: Human

Descriptors: *Health Services--Legislation and Jurisprudence; *Nurses ; *Patient Advocacy--Legislation and Jurisprudence; California; Expert Testimony; Societies, Nursing

8/8/68

● New immunobiological **tests** in the investigation of Meniere's disease and sensorineural **hearing** loss.

Tags: Female; Human; Male

Descriptors: *Autoantibodies--Analysis; *Hearing Loss, Sensorineural --Immunology; *Labyrinth--Immunology; *Meniere's Disease --Immunology; Adult; Autoantigens--Immunology; Blotting, Western; Hearing Loss, Sensorineural--Diagnosis; IgG--Analysis; Lymphocyte Transformation--Immunology; Meniere's Disease--Diagnosis--DI CAS Registry No.: 0 (Autoantibodies); 0 (Autoantigens); 0 (IgG)

8/8/98

● A **test** suite for **hearing** aid evaluation.

Tags: Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Acoustics; *Hearing Aids--Standards; *Signal Processing, Computer-Assisted; Analog-Digital Conversion; Mathematical Computing; Sound

8/8/115

● Carolina Picture Vocabulary **Test**: validation with **hearing**-impaired students.

Tags: Comparative Study; Female; Human; Male

Descriptors: *Deafness--Psychology; *Intelligence Tests; *Manual Communication; *Sign Language; *Vocabulary; Child; Wechsler Scales

8/8/129

● New **tests** for identifying **hearing**-impaired students with visual perceptual deficits: relationship between deficits and ability to comprehend sign language.

Tags: Human

Descriptors: *Hearing Loss, Partial--Diagnosis; *Manual Communication ; *Perceptual Disorders--Diagnosis; *Psychological Tests; *Sign Language; *Visual Perception; Cognition; Psychometrics; Students --Psychology

8/8/155

● Classification of **hearing** loss in industrial workers for the purpose of expert **testimony**

Tags: Human

Descriptors: *Expert Testimony; *Hearing Disorders--Classification; *Mining; *Occupational Diseases--Classification; Disability Evaluation; Hearing Loss, Noise-Induced--Classification; Noise, Occupational --Adverse Effects; Poland

8/8/159

● The use of acoustical **test** fixtures for the measurement of **hearing** protector attenuation. Part II: Modeling the external ear, simulating bone conduction, and comparing **test** fixture and real-ear data.

Tags: Human

Descriptors: *Bone Conduction; *Ear Protective Devices--Standards; *Ear, External--Physiology; *Models, Anatomic; *Protective Devices --Standards; Auditory Threshold; Ear Canal--Physiology--PH; Perceptual Masking; Pitch Discrimination; Psychoacoustics

Figure 9. Answer Set 9: hearing/ti (W) test?/ti

9/8/1 = 8/8/8

- Preauricular tags and pits in the newborn: the role of **hearing tests**.

Tags: Human

Descriptors: *Audiometry; *Ear, External--Abnormalities; Evoked Potentials, Auditory, Brain Stem; Hearing Disorders--Congenital; Hearing Disorders--Complications; Infant; Infant, Newborn; Prospective Studies

9/8/2 = 8/8/11

- Use of the distraction **hearing test** in children with congenital ocular motor apraxia.

Tags: Case Report; Female; Human

Descriptors: *Apraxia--Complications; *Hearing Loss, Sensorineural --Complications; *Hearing Loss, Sensorineural--Diagnosis; *Hearing Tests--Methods; Child; Eye Movements

9/8/5 = 8/8/21

- Early **hearing testing** of still critically ill neonates.

Tags: Female; Human; Male; Support, Non-U.S. Gov't

Descriptors: *Audiometry, Evoked Response--Methods; *Hearing Loss, Sensorineural--Diagnosis; *Intensive Care Units, Neonatal; Audiometry, Evoked Response--Instrumentation; Chi-Square Distribution; Critical Illness; Evoked Potentials, Auditory, Brain Stem

9/8/7 = 8/8/41

- Correlation between the American Academy of Otolaryngology-Head and Neck Surgery five-minute **hearing test** and standard audiologic data.

Tags: Female; Human; Male

Descriptors: *Hearing Disorders--Diagnosis; *Hearing Tests; Aged; Middle Age; Questionnaires; Sensitivity and Specificity

9/8/8 = 8/8/47

- Automated electrophysiologic **hearing testing** using a threshold-seeking algorithm.

Tags: Female; Human; Male; Support, U.S. Gov't, P.H.S.

Descriptors: *Algorithms; *Audiometry, Evoked Response--Methods; *Auditory Threshold; *Hearing Disorders--Diagnosis; Adolescence; Adult; Aged; Aged, 80 and over; Audiometry, Pure-Tone; Child, Preschool; Diagnosis, Computer-Assisted--Methods; Evoked Potentials, Auditory, Brain Stem; Infant; Middle Age; Regression Analysis; Reproducibility of Results

9/8/11 = 8/8/54

- Fair **hearing testimony**.

Tags: Female; Human

Descriptors: *Medical Staff Privileges--Standards; *Obstetrics --Standards; *Physicians, Family; Cesarean Section; Expert Testimony; Missouri; Pregnancy; Societies, Medical; United States

Worksheet for Assignment 2. Medline

Questions on the main search queries using assigned subject descriptors (Section 1.2, Task 1.2)

- 1.1 What effect does focusing the query formulation have on the number of documents found?

Note for questions 1.2 - 1.4: The listing for Answer Set 1 (Figure 4) also gives for each document the other answer sets in which it was found.

- 1.2 Which descriptors are responsible for retrieving Document 6 into Answer Set 2? How about Document 7? Why is Document 7 retrieved into Answer Set 3 but not Document 6?
- 1.3 Why is Document 18 retrieved into Answer Set 4 but not into Answer Set 5?
- 1.4 In Answer Set 6 (Query: **s1 AND hearing loss, sensorineural!**), Documents 14, 18, 19, 23, and 27 all have the descriptor **hearing loss, sensorineural**, but why was Document 12 retrieved?

Over

Questions on the free-text queries (Section 2, Task 2) (optional)

- 2.1 In this question you compare the controlled vocabulary search (based on descriptors / subject headings assigned from a controlled list) with free-text search (based on words occurring in the document; in our search restricted to title, but one could also look in the abstract or the full text). Look at Answer Set 1 (Figure 4); among the first 10 documents, how many would be retrieved by free-text query 8, **hearing/ti AND test?/ti**?

- 2.2 Comparing Answer Sets 8 and 9, would you advise a user who needs complete retrieval to use query 9? Why does query 9 miss so many relevant documents?

- 2.3 Answer Set 8 includes a number of irrelevant documents. List the reasons for false retrieval that you can observe. Which of these reasons persist into query 9?

Assignment 3

Lecture 1.2

Assigned: Jan. 19

Due: Feb. 2

Online Catalog Search

Objective	Students should understand the significance of catalog structure, especially the record format used, for searching.
Deliverables	No deliverable. (This assignment is like a reading: You are expected to know what can be learned from it.)
Task	Explore OCLC’s Connexion system for searching. This is OCLC's system for information professionals; later you will use this system for cataloging. OCLC's system for the public is FirstSearch, which can be used for searching several databases, including WorldCat and ArticleFirst.
Time	1.5 hrs

Many of the examples are based on the following record from the model catalog.

Deese-Roberts, Susan		
Library instruction : a peer tutoring mode. / [by] Susan Deese-Roberts [and] Kathleen Keating		
Englewood, Colo. : Libraries Unlimited, 2000.		
xiv, 212 p. : ill. ; 26 cm		
Bibliography: p. 359-356		
1563086522 (pbk.)		
Z711.2	371.2	00-55850
[LC Call no.]	[Dewey no.]	[LC Card no.]
1. Library orientation for college students -- United States. 2. Peer-group tutoring of students -- United States. I. Deese-Roberts, Susan, 1953- , joint author. II. Keating, Kathleen,; 1958- joint author. III. Title (Series)		

You will search for Seymour Lubetzky, the preeminent nt figure in cataloging in the 20th century

To save time, in the searches described below, you can copy the queries from the emailed Word document and paste them into the *Search for* box. (Windows tip: Use Alt-Tab (hold down the Alt key while pressing Tab) to switch between the browser and Word.)

Search on OCLC/Connexion

Log in`

<http://connexion.oclc.org/>

Authorization: Authorization: 100062747

Password: SILS2

Click on Logon

In the bar on the top,

click on ⇒Search

Note: You can also explore other functions in Connexion, especially the Resource Catalog (Cataloging > Search > select Resource Catalog in drop-down box). It lets you view bibliographic records for all kinds of documents, including many Web sites, in a variety of formats, including MARC and Dublin Core.

Note: The prompt numbers you see may be different from the ones given in the following instructions. The prompt numbers may change from session to session.

Searching in OCLC/Connexion

This will all become obvious as you do it.

In the drop-down box under *Search*, select WorldCat

In the top box labeled **Search for:** enter search criteria, then click on [Search].

Searching in the top box is easiest. Use Boolean AND to combine search criteria. Prefixes that specify the role of the search criterion, such as **au:** for Author or **su:** for Subject can be found in the drop down box associated with the second Search for box.

In the result list, click on an item number to see the detailed record. If you want to step through the entire list looking at detailed records, click on arrow next to the little box that shows the result number.

To go back to the result list, click on [Search Results] (the browser's Back button does not work)

. You can edit the **Search for** box and click on the [Search] button for a new search. Of course, you can copy and paste to and from the **Search for** box.

There are more things you can explore following the instructions on the screen

To learn more, consult Help (not needed for this assignment)

Introduction

To search for books authored by Seymour Lubetzky, that is

<authorOf>

Seymour Lubetzky (known starting point) ————— Book X (unknown, to find)

enter **au: Seymour Lubetzky** and click search (Lubetzky as author is in field 100 or 700)

or to search for books about Seymour Lubetzky, that is

<treatedIn>

Seymour Lubetzky (known starting point) ————— Book X (unknown, to find)

enter **su: Seymour Lubetzky** and click search (Lubetzky as subject is in MARC field 600)

The box **Indexed in:** has a drop-down list of field labels (corresponding to relationship types).

Start of searching (instructions are first detailed, then you just follow the same pattern)

in the Search for box, enter **au: Seymour Lubetzky** and click [Search]

In Group 2, click on Books

In the Search results, click on no. 96

You see a MARC (MACHine Readable Cataloging) record. Ignore the top gray box. You can also ignore the field tags and just read the data in the record (scroll down to the end of the record). Or you can go to Model Catalog document (the first reading) to see what the tags mean)

To see a more user-friendly record, In the drop-down box labeled **View** select **Display Find in a Library**. A new browser tab opens. Look at the record

Note: You can click on anything blue to start a new search. For example, you could start an author search for Robert L Maxwell by just clicking on the name. Or you could search for either of the subject headings displayed.

You can find libraries based on you zip code, but that is not the focus here

Next search: **su: Seymour Lubetzky**

Select result 10 (author Hayes) and display in the same way

In the library display screen, be sure to examine the entire record (scroll all the way down)

For the rest of the exercise, just search queries are given with very few further instructions or comments. Select one or two items to display for each search; generally the MARC record will do.

au: Seymour Lubetzky AND su: Seymour Lubetzky

su: Henry Kissinger AND au: Henry Kissinger Autobiographies

au: Susan-Deese-Roberts

au: Kathleen Keating (there are several people by that name who authored books)

au: Kathleen Keating AND ti: instruction

Next search for all documents whose title (or subtitle) starts with *library instruction*. This is called a **phrase search** and indicated by = after the field label.

First try

ti: library instruction (searched as ti: library AND ti: instruction)

Finds all documents for which both words *library* and *instruction* occur anywhere in the title, the subtitle, or an alternate title, or field 5xx. **Finds too many documents.** If we could restrict the search to the title proper, it might be ok. This is a question of exhaustivity of indexing, as we shall see.

Now do

ti= library instruction

Finds only documents for which the phrase *library* and *instruction* occurs at the beginning of the title, the subtitle, or an alternate title, or field 5xx (*the* and other articles at the beginning are ignored). Instead of over 2000 records, this finds 59

Examine the results. Note the duplication of the same title, either referring to exactly the same work or to different editions. (Note: If there was a book titled *The library instruction manual*, it would also be found)

bn: 1563086522 International Standard Book Number

As you surely have noticed in earlier searches: One book, many records in OCLC

The remainder of this exercise is concerned with **subject searching**. The sample topic is *library instruction*. There are two dimensions of the query formulation that can be varied independently:

1 Format of the search argument, which can be

- **words** (which can optionally be truncated) connected with AND
- **words connected with a proximity operator** (several choices specifying distance and whether or not sequence should be preserved). We just do w1 (words with at one word in between, sequence does not matter)
- a **phrase** (phrase must be at the beginning of an element in the record, such as title, subtitle, subject heading, or subheading)

2 Choice of data field(s) to search

All available fields are listed in the drop-down box *Indexed in*: Some important fields:

- kw title, subject headings, and other fields that contain words (not se or co)
- ti only title-like fields
- su subject headings and other MARC 6XX fields (also de for descriptor)
- lc Library of Congress Classification class number
- dd Dewey Decimal Classification class number
- other fields, such as **series**, **corporate name**, **conference name**

Try the searches in the table and compare the results. You may need to look at a full record to understand why a document was found. (CTRL-F in the browser will help you find the word you are looking for on the page displayed.)

To get search results of manageable size, append to each query **and yr: 2000-2009**

	Boolean	Proximity	Phrase
kw	kw: library AND kw: instruction	kw: library w1 kw: instruction	
ti	ti: library AND ti: instruction	ti: library w1 ti: instruction	ti= library instruction
su	su: library AND su: instruction	su: library w1 su: instruction	su= library instruction

Notes:

From left to right, the searches go from broad to more focused.

In Boolean searches, the words could be searched in different fields, for example one word in ti, the other in kw.

It is also possible not to specify a field at all. For example, searching for just *amaranth* finds documents by or about people or organizations whose name includes Amaranth, or whose title includes amaranth (referring to the grain, a person, or a place, such as Amaranth, ON), or that are indexed by the subject heading amaranth.

Assignment 4

Lecture 3.1

Assigned: Feb. 2**Due: Feb. 9****Analytical description of an information system**

Objectives	<ol style="list-style-type: none"> 1 You should enhance your understanding of the framework for the analysis of an information system, esp. the ISAR system component, as developed in the text, Chapter 5 by applying it to an actual library or other information system. 2 You should develop analytical skills in general.
Deliverables	Your paper can be in the form of a large diagram with explanations typed in the boxes. Or it can be in text form (2 - 3 pages), with a heading and brief text (telegraphic style is ok) for each function and file. Functions and files can be discussed separately or in one integrated sequence.
Tasks	<p>Analyze and describe the organizational and technical set-up of the library or information center or library where you work or some other system to which you have access. If you work in a branch library, your analysis needs to cover central functions where these are essential to the operations of your branch. Your analysis must include the following information (you may use your own arrangement):</p> <ol style="list-style-type: none"> 1 Identify the organizational units performing the functions (processes) shown in the combined information system diagram (see Materials below) (If there is no unit for a given function, please say so.) Briefly indicate how each function is performed. 2 Identify the files shown in the diagram. Briefly indicate for each file purpose and form (computer file, card file, book, etc.). 3 Name the document(s) that describe the conceptual data schema and other rules used in the system; characterize the rules briefly. <p>The closer you follow the combined system diagram (Notes for Lecture 3.1) the better.</p>
Materials	<p>Text Chapter 5, especially Sections 5.1 and 5.3. The combined information systems diagram given in the Lecture Notes for Lecture 3.1 or in the text Figure 5.1c, <i>Information systems. Complete structure</i>, and Figure 5.6, <i>The structure of an ISAR system</i></p> <p>Three sample analyses from students in previous semesters.</p>
Time	3 hours

Darling High School Library
by Ruth Milin

1. Purpose Profile of DHS (included here for illustration, not required in the assignment)

Some priority is set for (1a), provide references relevant to search requests (or tools to get such references), whether or not the corresponding documents are actually stored within the system. The emphasis in purpose at DHS is (1b), physically store books and other documents and make them available. Purpose (2), providing tailor-made packages of substantive data, is given minimum priority at DHS, except to a small degree in the area of extracting and providing immediate data. There is practically no priority given to analysis of documents or preparation of state-of-the-art reports.

2.A.

Process	Organizational unit
Identification of user needs, general	central system library office and head librarian
Identification of user needs, specific	head librarian, assistant librarian
Acquisition of documents	selection-head librarian, assistant librarian with suggestions from teachers, students, and administration buying-system library office - acquisitions dept.
Formulating search requests in terms of descriptors	system library office-cataloging dept.
Indexing	system library office-cataloging dept.
Feeding into storage	system library office-cataloging dept. at school - clerk, student assistants with head or assistant librarian checking the work.
Comparison, match	system office - cataloging office school - head librarian, assistant librarian
Check whether satisfactory	system office - cataloging office school - head librarian, assistant librarian
Make material available to user	clerk, student assistants
Public relations librarian	head librarian, assistant

FILE	LOCATION
People having problems and info arising from there	school-wide-students, teachers, administrators
Documents, data, knowledge "floating around"	"floating around"
Information on user needs in general	curriculum lists and school interests in general cabinet file in librarian's work room
Interest profile/search request, as acquired	Current Interest File in librarian's Current Interest File in librarian's office
Documents, data, as required	books kept at central acquisitions office until cataloged. Sent to school where kept in storage room at rear of library until cards etc. pasted in books and ready to be put out on the shelves.
Store 1 - Interest profile/request formulations in terms of descriptors	Current Interest File in librarian's office
Store 2 - Document representations in terms of descriptors	file in cataloging dept. of center office. Entered in Sears Catalog in library workroom. Index file - card catalog file at center of school library. File of documents - books on shelves in library at school second floor, rear of school.
Documents, data selected (retrieved)	school library
Material processed, according to user needs	school library card catalog, Sears Cat.
Output: potential users know about services available	announcements over p.a., bulletin boards and display cases around school publicity records kept in file cabinet in workroom of school library.
Output: User has information available	school, school library

Note: Information about the conceptual data schema / system rules is missing from this example.

The structure of information systems in our public schools

By Karen Levitan

Introduction

Observations were made at two Montgomery county school media centers, East Silver Spring Elementary School and Montgomery School and Montgomery Blair Senior High School, both in Silver Spring, Maryland. These two schools were chosen for the following reasons: 1) they provided a basis for a gross comparison between information systems for young children and those for adolescents; 2) they represented "average" media centers in terms of available funds, age of school, background of community; 3) they were conveniently located for the researcher. The objective behind this gross comparison was to ascertain a general description of information systems in our public schools, point out similarities and differences between elementary and senior high media centers, and identify areas where research and further study and development are needed.

Purpose profiles

Again, this is included here only for illustration of the functions (Text, Section 2.6). This section is no longer required in the assignment.

Montgomery Blair Sr. High Media Center (2100 students, 118 teachers, 3 librarians, 3 aides). Montgomery Blair's primary purpose is to provide access to materials. At least 90% of the center's activities deals with storage and availability of print and nonprint media. Approximately 10% of its work is to provide references relevant to search requests. No attempt is made to analyze data, to extract data for bibliographic or state-of-the-art reports or to repackage data in any way.

Each Silver Spring¹ Elementary School Media Center (500 students, 18 teachers, 1 librarian working ½ day, 1 aide). The main purpose of the ESS media center is to store and make available print and nonprint media. Approximately 92% of its activities deal with this function, while about 8% of its work revolves around reference services. There is no attempt to analyze or repackage data for users.

¹ Hereafter cited as ESS.

Searching line		
Process and File	Montgomery Blair	ESS
Identification of user need, general	Information of needs of students and teachers in general derived from curriculum guides published by Montgomery County and from general curriculum goals of the individual schools.	
Identification of user need, specific	No interest profiles are kept on teachers or students. Some attempt is made to learn of interests of students and teachers through personal contact on a totally informal basis. Otherwise, user needs are learned at time of search requests.	No interest profiles. Little rapport between teachers and librarians.
Search requests in terms of descriptors	All search requests are translated by user or librarian into descriptors appropriated to Dewey notation.	

Storage line		
Process and File	Montgomery Blair	ESS
Acquisition	Head librarian is 75% responsible for acquisitions, with 20-25% input from teaching staff.	95% of acquisitions made by librarian, with 5% input from staff.
Documents, data as required	<p>Documents acquired through Montgomery County School System. Time lag between order and possession of data is between 6 mo. and 2 years. In both schools print media is shelved in reading room; nonprint media is shelved in another room across from media center.</p> <p>Montgomery Blair librarians purchase books personally in neighborhood book stores to meet demands of users.</p> <p>Departmental collections are housed throughout the building in appropriate rooms. (This point should actually be mentioned later, D.S.)</p>	

Storage line (continued)		
Process and File	Montgomery Blair	ESS
Indexing	Print and nonprint media are indexed using Dewey schedule by catalogers of Montgomery County School System. Indexing of data acquired prior to establishment of county system is done by individual librarians using Dewey notation and Sears headings.	
Feeding into storage	Student aides perform this function.	Library aide performs this.
Storage	The files are organized on card catalogues located in the center of the reading room. Easily accessible . All print and non-print documents plus department collections and textbooks are indexed in the file.	The card catalogue is located alongside the circulation desk. Very inconvenient.

Retrieval		
Process and File	Montgomery Blair	ESS
Documents retrieved	User or librarian retrieve data, which is immediately for use either in media center, in class or at home. Student aides carry on circulation functions, supervised by librarian.	Library aide handles circulation.
Further process of material	None	None
Public relations	Librarians print and distribute to teachers monthly lists of new materials. Sophomores receive a general orientation to the media center in one assembly program. Nothing else.	None

Conclusion

Information systems for children and adolescents based on these two schools show strong similarities. Their purpose is to store and make available documents. They are libraries first, in spite of their fancy new name of "media center." Functions and files on the storage line are far more developed than those on the searching line. The entire area of user needs requires exploration and creativity.

The public relations function is another area worthy of study and improvement, since it barely exists at all in the schools observed for this report.

Space and money will be important to bring changes, but just as crucial to change is the need for creative personnel, not just librarians but teachers, as well, since they are the users and can direct their students to the media center. It would be interesting to study what and how teachers are taught in the use of media centers as part of their teaching strategies.

With such a heavy emphasis on the storage function it is no wonder that children grow up thinking that libraries are static. An emphasis on the searching line is due to change this imbalance.

Charles E. White Chemistry Library

Conceptual data schema

The conceptual data schema, or rules for cataloging, is described in the **Anglo-American Cataloging Rules (AACR2)**. The rules indicate how items in the library must be described and how subject headings (access points or descriptors) should be established. The conceptual data schema is extended by the **Library of Congress Subject Headings**, which lists allowable values for subject headings, and the **Library of Congress Classification System**, which gives allowable values for classification numbers. Therefore, these two documents serve as the thesauri for the system.

The AACR2 document specifies the data which must be stored for the entities and, for manual card catalog entries, indicates how the data should be displayed on the catalog card. For the on-line catalog system, the system's computer programs impose further rules for how query and entity data should be input into the system, as well as how it is displayed on the terminal screen.

The **Journal Shelving Authority File** gives rules for the physical arrangement of journals. The physical arrangement of books is based on the **Library of Congress Classification System**.

Files and processes

File 1: People with problems and resulting needs. The primary component of this file is faculty members and undergraduate and graduate students in the chemistry, biochemistry, and microbiology departments. The file could also contain other members of the university community and the public at large. Their needs could be information required for problems in course work, research, or general interest.

Process 1: Identification of needs in general. Setting priorities. The library views the users' needs as the need for access to a comprehensive collection of information and materials in the areas of chemistry, biochemistry, and microbiology.

File 2: File of needs in general. A formal information directory of user needs is not maintained.

Process 2: Acquisition of the needs of specific users. In many cases, the student or faculty member analyzes his problem himself and has a clear idea of the nature of his need. In other cases, when the user is inexperienced or when the problem is complex, one of the librarians assists in the determination of the specific need by conducting a reference interview.

File 3: Query statements as acquired. This consists of a statement of the user's problem in natural language. It is located in the user's and/or librarian's memory, and may also be written on a piece of paper.

Process 3: Formulating in terms of entities and relationships. This is performed by the user, sometimes with the assistance of the librarian, and involves the determination of descriptors which will be used in the search. If the need is very specific (i.e. the user needs a specific book or work by a specific author), the title or author's name to be used as an access point is determined. If the user simply needs information on a topic, the relevant subject heading(s) which describe the user's problem are determined.

Process 4: Feeding into storage. For a search in the card catalog, the user or librarian writes the descriptor(s) on a piece of paper, or may simply store them in memory.

For a search in the online catalog (OPAC), the user or librarian selects the proper descriptor type (AUT, TIL, or SUB) and then keys in the desired descriptor.

File 4: Query store. For a search in the card catalog, this consists of a list of author(s), title(s), or subject heading(s) stored in the user's or librarian's memory or written on a piece of paper.

For a search in the online catalog, this consists of a title, author, or subject heading stored in the memory of the computer at McKeldin. Query 'files' are temporary; since there is no SDI function, no queries are stored in permanent computer files.

File 5: Information or entities. This file could be defined as the entire body of the world's recorded knowledge; a more realistic definition might include only published "knowledge".

Process 5: Selection and acquisition of entities and information. The library's goal is to maintain a comprehensive collection of 'the best' materials on chemistry, biochemistry, and microbiology.

The selection function is performed by the two librarians at the Chemistry library using the following three methods:

- (1) Books which match the library's 'profile' are selected by the Ballen book approval plan.
- (2) Faculty and graduate students recommend books and journals.
- (3) Librarians select books and serials described in marketing materials received from publishers.

Librarians forward a list of desired materials to the Acquisitions unit at McKeldin. This unit types orders and mails them to the publishers.

Shipments of books are received at McKeldin from the publishers about once a week. Before cataloging is performed, Chemistry librarians examine books selected via the book approval plan and may reject ones which they do not want; rejected books are returned to the publisher.

Serials are received by the chemistry library directly.

File 6: Entities and information as acquired. This consists of uncataloged books at McKeldin library and unprocessed serials at the chemistry library.

Processes 6 and 7 must be considered together as a 4-step process.

Process 6: Indexing, intellectual process. Establishing relationships between entities.

Classification assignment and preliminary cataloging. This is performed by the Catalog Management unit at McKeldin, who assign the call number and decide upon the form of the author and title under which the book will be cataloged. The call number is pasted on the book.

Process 7: Feeding into storage. Building and maintaining the database. This is performed by the Library Technical Assistant at Chemistry library, with the help of student assistants, in the following steps:

- (1) Make preliminary entry (call number, author, title, CSN number only) into the online catalog, so that books may circulate.
- (2) Make entry in New Acquisitions Card Catalog.
- (3) Shelve book on New Book Shelf for a week.
- (4) After a week, shelve book in stacks.

Process 6: Indexing, intellectual process. Establishing relationships between entities.

Final cataloging. This is performed by the Catalog Management unit at McKeldin. The MARC catalog record is received from OCLC and revised if necessary to produce a final catalog entry. In some cases, original cataloging must be done.

Process 7: Feeding into storage. Building and maintaining the database. This is performed by Catalog Management unit at McKeldin. The preliminary entry in the online catalog system is overlaid with a final catalog entry.

File 7: Entity store, database.

- (1) Book Stacks. This contains books shelved in order by classification number.
- (2) New Book Shelf. This contains books acquired during the past week. They are not shelved in any particular order and may not circulate.
- (3) Current Serials Shelves. This contains serial issues published during the past two months. They are shelved in alphabetical order by authority title.

- (4) Bound Serials Stacks. This contains serial issues published three or more months ago. Usually, all issues for a volume are bound together. The shelved in alphabetical order by authority title.
- (5) Online Catalog. This is a computer file maintained on a computer in the basement of McKeldin library. It contains bibliographic records (entities) which are representations of materials added to UMCP libraries since 1983 (including items in 1-4 above). Entities are indexed by author, title, and subject heading.
- (6) Card Catalog. This is a file of 3x5 cards, maintained in the Chemistry library, which contains bibliographic records which are representations of materials acquired by the Chemistry Library before 01/01/87. Entities are indexed by author, title, and subject heading.
- (7) New Acquisitions Catalog. This is a file of 3x5 index cards, which contains bibliographic records which are representation of materials acquired by the chemistry library since 01/01/87. Entities are indexed by title only.

Process 7 also includes the reshelving of materials which were previously retrieved from the database. This is performed by student assistants.

Process 8: Comparison-match, display. If the query is processed using the card catalog, this is performed by the user or librarian. He searches for card(s) containing the proper descriptor (author, title, subject heading) in the catalog. The card(s) found will display bibliographic data (descriptive data and access point) about the entities which have been indexed with the descriptor.

If the query is processed using the online catalog, the computer program performs the match and display. The system attempts to match the descriptor entered on the screen (Query Store file) with index terms in the bibliographic record file. If it finds a match, it displays the bibliographic data about the entity on the screen.

The user, occasionally with the assistance of the librarian, then uses the information displayed on the card or screen to locate the materials on the shelves.

File 9: Entities or information retrieved. This consists of materials retrieved from the Book Stacks, New Book Shelf, Current Serial Shelves, or Bound Serials Stacks.

Process 9: Check whether satisfactory. The user examines the materials retrieved to determine whether they are relevant to his problem.

Process 10: Further processing (data analysis, extracting substantive data). This function is not performed by the library.

- File 10: Materials processed according to user needs.** This file is not used by the library.
- Process 11: Making material available to user.** Users may check out many of the books found in the book stacks. This circulation process is performed at the service desk by any of the 14 employees. Other materials may not be checked out and are thus photocopied by the user if he wishes to take a copy out of the library. Alternatively, he may simply read the materials at the library.
- File 11: Output: User has information or entities available.** This consists of a student, faculty member, or other person who has the information he needs.
- Process 12: Public relations.** The library publishes a brochure describing its services. The librarians also make presentation to new graduate students in chemistry, biochemistry, and microbiology, as well as some undergraduate classes, about the library's services.
- File 12: Output: Potential users know about services available.** This consists of the part of the academic community which has at least a basic knowledge of the library's services.

Assignment 5
Lecture 4.2

Assigned: Feb. 9
Due: Feb. 16

Developing a conceptual data schema

Objective	<p>Gain a deeper understanding of the concepts discussed in Text Chapter 3 and Section 9.1 by applying them to a concrete example.</p> <p>In particular, you should be able to</p> <ol style="list-style-type: none"> 1 identify entity types that reflect only intrinsic properties and not relationships to other entities (Person not Author, Text not Title); 2 identify relationship types; 3 find easy-to-understand terms for entity types and relationship types.
Deliverables	<p>A list of sample questions</p> <p>An entity-relationship conceptual data schema</p>
Tasks	<p>Picture the information system for one of the following types of business:</p> <ul style="list-style-type: none"> • a hospital • a movie production company • an airline <p>Design a conceptual data schema for the information system you selected. Start from 5 - 7 sample questions that the information system must be able to answer.</p> <p>List the entity types and relationship types required.</p> <p>For each entity type, indicate how the permissible values are specified.</p> <p>For each relationship type (statement template) give one example of an actual statement that would be included in the database</p> <p>Focus on some of the central functions of the business that are supported by data in a database. Your schema need not be complete; order of magnitude: 10 entity types, 10 relationship types.</p>
Time	1.5 hours

Definition of *conceptual data schema* on next page

Definition of *conceptual data schema* (as a reminder)

The conceptual data schema of an information system is a specification of the types of information to be stored. In this course, this specification is given by listing the entity types that are covered in the information system and the relationship types that can be used to combine entities into statements. Put differently, the conceptual data schema defines statement templates:

Relationship type,

Statement template,

connects entity types, part of the conceptual data schema

entity type

Book, intellectual work <*authoredBy*>

entity type

Person

Each piece of information in the system can be seen as a statement that follows one of these statement templates, replacing each entity type, such as Person, by an entity value belonging to that type, such as Eye, Glen G. For example:

Statement,

connects entity values, not part of the conceptual data schema

entity value

ISBN-0060419512 <*authoredBy*>

entity value

Eye, Glen G.

Put differently, each entity type in a statement template is a place holder for an entity value. By filling in the empty spaces with entity values we get a statement. For a given statement template, there may be thousands or even millions of statements that follow the template. In this assignment, you need to give for each relationship type / statements template on actual statement; this is to make sure that the statement template makes sense.

Examples of poor and good questions

Since this assignment is about developing the conceptual data schema for a database, good questions are questions that would be answered from a database rather than questions that would be answered from a policies and procedures manual, as illustrated below,

Policies and Procedures Manual question	Database question
Database for the operation of an airline	
What are the maximum dimensions for carry-on?	On which flight is the bag with tag UA32651?
How many pieces of luggage can I bring on a flight?	
Does the airline serve food? Note: For a single airline, this is a policy question. For a database of all the world's airlines, this would be a database question	What meals are served on Flight 763? (if the airline serves food)
How can I upgrade to first class?	Are upgrades available on Flight 763 on February 22, 2010?
How do I book a flight online?	Is there an aisle seat available on Flight 212 on March 15, 2010
Database for the operation of a university	
What is the procedure for making up an Incomplete?	Give me a list of all students who have an Incomplete
How do I change my advisor?	Who is the advisor of Joseph Smith?
	I need a list of advisees of Prof. Jeng
What is the first day of registration?	How many spaces are open in LIS 581 (as of today)
	What are the prerequisites for LIS 569?
	Am I eligible to take LIS 569? (as of today) (inferred from prerequisite information and the courses the student asking the question has completed)

Assignment 6.
Lecture 5.1

Assigned: Feb. 16
Due: Feb. 23

Restructuring a semantic network

Objectives	Solidify understanding of hierarchical inheritance and its role in efficient information storage.
Deliverables	<ol style="list-style-type: none"> 1 The graphically restructured network (p. 72) 2 The restructured set of records (p. 73)
Tasks	<ol style="list-style-type: none"> 1 Restructure a semantic network given in a graphic representation. 2 Restructure a set of records for more efficient storage. <p>Note: In essence, these two tasks are the same. The same information is represented in two different ways that are completely equivalent; one representation can be transformed into the other without difficulty</p>
Further Explanation	<p>In the semantic network detect commonalities among the bottom nodes and introduce new nodes that capture the commonalities. (These nodes would be above the bottom nodes.)</p> <p>In the database detect commonalities among the records and create new, generic records that capture the commonalities. Indicate the hierarchical inheritance relationships among the records in the restructured database.</p>
Time	1.5 hours

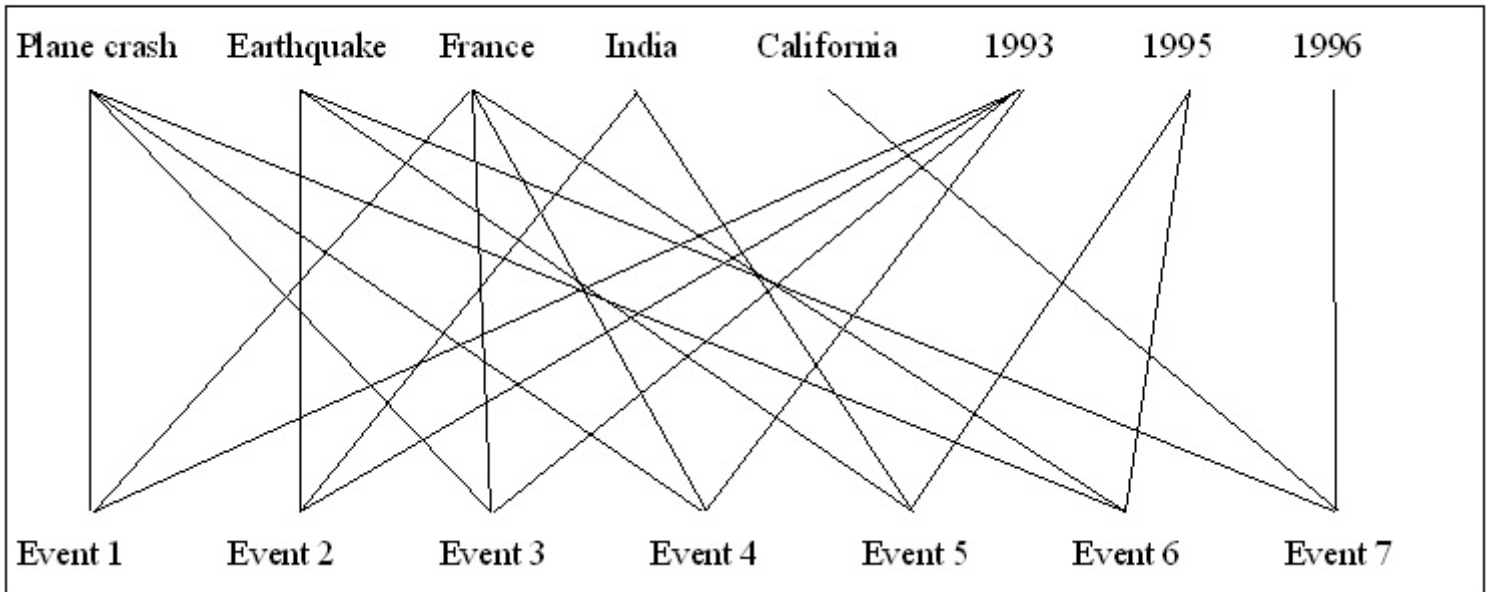
Semantic network and database to be restructured

Next page

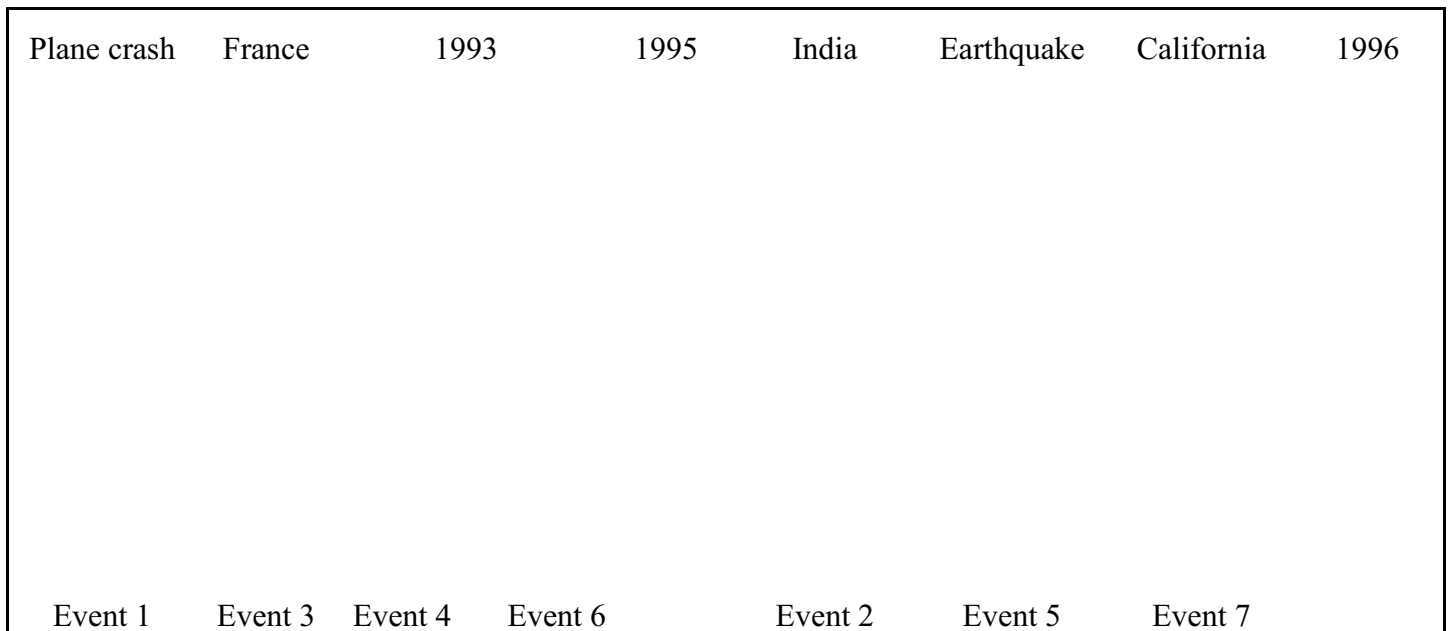
Note:

The semantic network and the database are two different representations of the same underlying data.

Original semantic network



Restructured semantic network



Note 1: The original semantic network is drawn from the original database by drawing from each event a line to its *Type*, *Place*, and *Time*. So the database shown on the next page and the semantic network represent exactly the same data.

Note 2: In the outline for the restructured semantic network the events have been reordered to make drawing the restructured network easier.

Original database**Event no. 1**

Type: Plane crash
Place: France
Time: 1993
Number killed: 10

Event no. 2

Type: Earthquake
Place: India
Time: 1993
Number killed: 20

Event no. 3

Type: Plane crash
Place: France
Time: 1993
Number killed: 100

Event no. 4

Type: Plane crash
Place: France
Time: 1993
Number killed: 30

Event no. 5

Type: Earthquake
Place: India
Time: 1995
Number killed: 400

Event no. 6

Type: Plane crash
Place: France
Time: 1995
Number killed: 20

Event no. 7

Type: Earthquake
Place: California
Time: 1996

Restructured database

Term paper assigned: Feb. 16
Description (this form) due: Mar. 2
Term paper due: May 16

Name:

Term paper description

Title:

One-sentence statement of purpose (absolutely required):

Description (½ page):

See back for further instructions for the term paper
You may discuss your topic with the instructor

Term paper — end-of-term essay.

A reflective essay on a theme of your choice, guideline 4,000 - 5,000 words. Make connections between ideas gleaned from the readings, assignments, and class discussions. Reflect on what you have learned and what insights you gained. Consider implications and applications, particularly to your present or expected future work or other courses. You can identify issues, questions, problems for further study. This can be a personal essay that reflects your personal experience and views.

As one option, you may analyze an information system – existing or to be built – with focus on the information retrieval (IR) system, applying all the concepts from the course. This option may help you to better understand course concept by seeing how they work together in one system. For this option:

- Focus on the IR subsystem; do not do the entire information system (as you did in Ass 4).
- Begin with a section on user needs.
- Include an entity-relationship (E-R) conceptual data schema.
- Analyze the index language(s) used.
- Analyze the indexing process and the parameters of indexing.
- Discuss how searches can be done (through queries or through navigation).
- Be critical, considering how well the system, and its different components, serve user needs; for example, does the conceptual data schema provide for all the types of information needed to answer users' questions. You can intersperse critique throughout or have a section at the end.

Throughout the course, as ideas and connections occur to you, jot them down.

This essay can be written based on the required readings and lectures without the need for consulting further sources. This is a task of integration, not of expansion. In the past some students have chosen topics that required further reading due to their own interests; not prohibited, but not encouraged.

Format The paper must have a title

Begin with a one-sentence statement of the general purpose of your essay. The remainder of the first paragraph should elaborate on the purpose, possibly stating several specific purposes. Enlighten the reader as to why s/he should read your paper.

Divide the paper into **numbered sections with informative headings.**

See “Soergel’s supplemental style rules” in the readings for Lecture 6.2

To make application of course concepts explicit, include at least five specific references to readings or lectures. Only if your essay does draw on other sources are further citations required in line with general practice; citation format is up to you.

Length. Expected 4,000 - 5,000 words, single spaced, 1" margins, Times Roman 12 points (8 - 10 pages), no upper limit. Ultimately it is the content that matters.

Term paper grading criteria. The following criteria contribute to a holistic assessment

- Level of understanding of course concepts shown in the paper. Insights discussed
- How well are ideas integrated and related
- How well are course concepts applied in discussing the term paper topic or in analyzing or designing an information system.
- Connections drawn to other courses
- Implications for present and/or future work
- Innovative and interesting ideas

Assignment 7
Lecture 5.2B and Lecture 6.1

Assigned: Feb. 23
Due: Mar. 2

Applying linguistic techniques to retrieval problems

Objectives	<p>Understand, through exploration, the possible improvements in free-text retrieval that can be achieved through linguistic techniques such as</p> <ul style="list-style-type: none"> • word sense disambiguation by syntactic analysis to determine part of speech and by semantic interpretation (from the multiple meanings of a homonym or polyseme, pick out the one that applies in the context); • using all terms that designate a query concept (all synonyms of the query term); and • resolution of anaphoric references (what do <i>it, she, they, the machine, ...</i> refer to).
Deliverables	<p>The filled-out table. A list of linguistic retrieval techniques indicating the passages affected.</p>
Tasks	<p>Explore possible improvements in free-text retrieval through linguistic techniques, using the example on the next page: some short passages of text and a query to be applied to this “collection”.</p> <ol style="list-style-type: none"> (1) analyze retrieval performance of a query using the ws operator and (2) (main task) to suggest linguistic techniques that could be added to the retrieval system to improve retrieval. See the next page for more detailed instructions. You should still adhere to the requirement that the two concepts must be mentioned in the same sentence.
Explanation of the query.	<p>The proximity operator ws requires that the two words occur within the same sentence. Thus the query formulation <i>forest ws fire</i> retrieves all passages in which the two words occur in the same sentence. This is the operator used in the baseline query formulation in the assignment.</p> <p>Most IR systems will take this query quite literally and look for the <u>words</u> (and that is how you need to analyze retrieval performance in Task 1. But the user is interested in the close mention of two <u>concepts</u>. That is where linguistic techniques come in.</p>
Time	2 hours

- (1) **Prelude:** Check all passages that are relevant to the user's need as expressed in the query. Then check all passages that are retrieved by the query formulation. Fill in the 3x3 grid and compute performance measures: recall, discrimination, precision.
- (2) **Main point:** What **linguistic** techniques could be used to improve free-text retrieval performance? (Adding index terms to the passages is not an option.) You can analyze each passage in turn, giving for each the applicable linguistic technique(s). Which of these techniques improve recall, which improve discrimination, which improve both?

Query statement (description of information need / topic): **Forest fires**

Query formulation: forest ws fire* (fire* finds fire or fires)

Passage	R e l e v a n t	R e t r i e v e d
1. Forest fires in Indonesia cause serious air pollution in South East Asia.		
2. The fire in Yellowstone Park destroyed 25% of the forest.		
3. The fire station is located behind the city forest.		
4. With fire in her eyes she chased him through the forest.		
5. The soldiers opened fire into the forest.		
6. The fire went out of control. It reached the forest and destroyed many acres.		
7. The animal got scared by the fire burning in the field. It ran into the forest.		
8. He asked whether he should fire the forest workers.		
9. Many square miles of forest in the West are burning.		
10. The dry wooded area went up in flames.		

	Relevant	Not relevant	All
Retrieved			
Not retrieved			
All			

Recall: _____

$\frac{\textit{relevant correctly retrieved}}{\textit{all relevant}}$

Discrimination: _____

$\frac{\textit{irrelevant correctly rejected}}{\textit{all irrelevant}}$

Precision: _____

$\frac{\textit{relevant correctly retrieved}}{\textit{all retrieved}}$

Assignment 8

Lecture 7.2A

Assigned: Mar. 2**Due: Mar. 23****Problems of entry**

Objectives	<ol style="list-style-type: none"> 1 Improve understanding of the problems in determining entries. 2 Gain enough familiarity with AACR2 rules for entry to find the rule that applies to a given situation.
Deliverables	The pages <i>Sample documents . . .</i> (or a copy) with your answers written in.
Tasks (If you have trouble, see the GA)	<p>For the starred items in the attached <i>Sample documents for analyzing author entry according to Lubetzky</i> (copied from Lecture 7.2) indicate</p> <ul style="list-style-type: none"> • The Lubetzky condition that applies to this case (see reading and the overview in the notes for Lecture 7.2A) • The AACR2 rule that applies (see reading) • The correct author entry formatted according to AACR2 (no other entries are required; for example, do not do title or subject entries)
Materials / reading	This assignment is based on Part 2 of AACR2, Chapter 21 - 26 (not in your package, multiple copies of AACR2 are available in Baldy 14A). Skim the pages listed in the AACR2 reading; get the gist of the rules, no need to read all examples. Use the entire book for reference when doing the assignment. Alternatively you can use RDA, also in Baldy 14A
Time	1.5 hours

Note on the concept of entry	<p>(As defined in AACR2 reading) An author entry is simply the name of a person or corporate body under which the document should be found in a catalog. For actual cataloging in the US, and for this assignment, the name should be given in the form prescribed by AACR2. In a MARC record, these names go into fields 100 or 110 (if the main entry) or in fields 700 or 710 if an added entry (any entry other than the main entry).</p> <p>So for the Assignment 8 deliverable you need to give for each of the documents marked with * the personal or corporate name(s) which should be used as entries (you need not be concerned with specifying which is the main entry). You do need to give for each entry the Lubetzky condition that applies and the applicable AACR2 rule(s) that you used</p> <p>(A) in the decision to make an entry for this person or organization and</p> <p>(B) in determining the form of the name to be used in the catalog record.</p>
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Sample documents for

- **analyzing author entry according to Lubetzky and**
- **determining author entry according to AACR2**

(selected from the longer list used in Lecture 7.2A)

Use a separate line for each entry

(b)* ***Studies in the social psychology of adolescence*, by J. E. Richardson, J. F. Forrester, J. K. Shukla, and P. J. Higginbotham; edited with a foreword by C. M. Fleming.**

Lubetzky condition:

AACR2 rule:

Entries:

(e)* ***Chisholm's handbook of commercial geography*, entirely rewritten by L. Dudley Stamp and S. Carter Gilmour.**

Lubetzky condition:

AACR2 rule:

Entries:

(f)* ***Making magical apparatus*, by Jane Reid (i.e. Mrs. David Johnstone).**

Lubetzky condition:

AACR2 rule:

Entries:

over

(m)* ***Schubert: thematic catalogue of all his works in chronological order***, by **Otto Erich Deutsch** in collaboration with **Donald R. Wakeling**.

Lubetzky condition:

AACR2 rule:

Entries:

(n)* ***A concordance to the poems of William Wordsworth***, by **Lane Cooper**.

Lubetzky condition:

AACR2 rule:

Entries:

(o)* ***The poetical works of Wordsworth***, edited by **E. de Selincourt**.

Lubetzky condition:

AACR2 rule:

Entries:

Assignment 9

Lecture 7.2A

Assigned: Mar. 2**Due: Mar. 23+****Descriptive Cataloging Practice**

Objectives	<ol style="list-style-type: none"> 1 To gain an understanding of what it takes to describe a work and to determine the entries according to AACR2, consulting the rules in all but the simplest cases, using both the MARC format and the Dublin Core to structure the bibliographic records. 2 Gain minimal experience with another cataloging code (e.g., APA style). 3 Do not spend too much time on getting every detail right; concentrate on the general idea.
Deliverables	<p>Three MARC records (typed or printed), one Dublin Core record., one APA-style record.</p> <p>You can work on this assignment in teams but you must hand in the deliverable individually.</p>
Tasks	See detailed description on the next page
Materials	<p>Excerpts from AACR2, Part 1 in the readings APA rules short in the readings Note: We did not talk about this in class yet; the readings should do it</p>
Time	4 hours
Note on limitations	<p>The objective of this assignment is just to give you a first taste of descriptive cataloging. You need not be concerned with the intricacies of the MARC format. Emulating the Model Catalog records (especially for the Web page) is ok, even encouraged. Do not be obsessed with details; as long as you get the basic record correct and are aware that there are many detailed rules, you are ok even if you do not get all the details exactly right.</p> <p>More information about the MARC format can be found at lcweb.loc.gov/marc/marcdocz.html</p> <p>and, for cataloging Web documents, at oclc.org/support/documentation/worldcat/cataloging/electronicresources/default.htm</p>
Descriptive cataloging clinic	This assignment should be easy, but some students are still in awe of cataloging. The GA will make several times available for going over this assignment and helping students through it. Or make your own appointment with the GA (preferably 2 - 4 students at a time).

<p>Task 1 MARC records</p>	<p>Prepare MARC records for documents 1 - 3. (deliverable)</p> <p>The model catalog has a listing of the MARC fields and many sample records; Record 26 illustrates the cataloging of a Web site. For a simplified record as required in this assignment see below.</p> <p>For one of these documents prepare a Dublin Core record. (deliverable)</p> <p>Use AACR2 rules.</p> <ol style="list-style-type: none"> 1 Lewis, Differentiating the teaching staff 2 Silberman, The open classroom reader 3 MathMagic (Web site) <p>Use the second level of description (as defined in AACR2) unless indicated otherwise. Use only MARC fields 100 - 599, 700-759 (added author/title entries), and 800-840 (series added entries), as they apply to the document being cataloged. Optionally you may use subfield indicators which divide the information in a MARC field further, indicated by \$a, \$b, or #a, #b etc.</p> <p>Use the <i>Dublin Core Metadata Template</i> at worthingtonmemory.org/DC_Form.cfm to make the Dublin Core record. Simply copy and paste the information from your MARC record into the appropriate slots.</p> <p>Title page and verso (back of title page) for each item are attached. The number of pages is indicated on the verso if necessary; the physical dimensions of the book can be seen from the title page copy. The books themselves can be examined in a location yet to be determined.</p>
<p>Task 2</p>	<p>Examine documents A1- A4 (title page and verso attached) for descriptive cataloging problems (no deliverable)</p> <ol style="list-style-type: none"> A1 Women's organizations and leaders directory A2 Social science data file directory A3 Inventory of information resources in the social sciences A4 Anglo-American cataloging rules. 2. ed. 1988 rev
<p>Task 3 APA style record</p>	<p>Prepare an APA-style record for Silberman, The open classroom reader. (deliverable)</p> <p>A compilation of key APA rules, sufficient for this assignment, is included in the readings for Lecture 7.1.</p>

Sample MARC records

The records you create should look like this

100	\$a Conant, James Bryant, \$d 1893-1978.
245	\$a The comprehensive high school; \$b a second report to interested citizens, \$c by James B. Conant.
250	\$a [1st ed.]
260	\$a New York, \$b McGraw-Hill \$c [1967]
300	\$a vi, 95 p. \$c 21 cm.

100	\$a Richards, James McDowell, \$d 1931-
245	\$a Assessing student performance in college, / \$c James M. Richards, Jr.
260	\$a Washington: \$b ERIC Clearinghouse on Higher Education, George Washington University \$c [1970]
300	\$a 12 p. \$c 28 cm.
410	\$a ERIC Clearinghouse on Higher Education \$t Report; \$f 1970, v no. 2
505	\$a Bibliography: p. 10-12.
710	\$a ERIC Clearinghouse on Higher Education

Materials for assignment 9, also Traffic Quarterly article inserted here

must be even number of pages, each title page on a front.

Assignment 10
Assigned in Week 7 for Lecture 8.1

Assigned: Mar. 2
Due: Mar. 8 - 10

Free indexing of three documents and preparation for Small Groups 1

Objectives	<ol style="list-style-type: none"> 1 To get a sense of how free indexing works in preparation for Small Groups 1. 2 To prepare for seeing the contrast to request-oriented indexing as done in Assignment 11.
Deliverables	The sheet Document abstracts for free indexing filled in.
Tasks	<ol style="list-style-type: none"> 1 Free indexing. Index the three documents given on the page Document abstracts, using whatever terms you can think of as good access points for finding this document. 2 Look over the tasks for Small Groups 1 and the accompanying materials in the notes for Lecture 8.1 (Small Groups 1) <p>You need to complete both tasks before the Small Groups 1</p>
Time	2 hours
Materials (attached)	A page with three document abstracts

Document abstracts for Assignment 10**Document 1**

N69-17257 *# National Aeronautics and Space Administration. Langley Research Center. Langley Station, VA

Supersonic transport operating practices during simulated operations in future air traffic control systems environments

Milton D. McLaughlin and Richard H. Sawyer Washington Feb. 1969 65 p refs (NASA-TN-D-5018) Avail: CFSTI CSCL 01B

Operating practices of the supersonic transport (SST) during simulated operations in air traffic control (ATC) system environments conceived for the time period of introduction of the SST into service are presented. An SST flight simulator and the Federal Aviation Administration ATC simulation facilities were used to create the real-time simulations. The SST flight simulator was operated by airline crews and the ATC simulation facilities by experienced air traffic controllers. The test program included departure and arrival operations under instrument flight rule conditions in the New York and Los Angeles terminal areas with two design study configurations of the SST. The design study configurations were representative of variable-sweep and fixed-wing design. Both designs had a variable-incidence forebody.

Free index terms**Document 2****A Plan for a New Consolidated Passenger Ship Terminal in the Port of New York.**

Distributed free by Port of New York Authority, 111 Eighth Avenue, New York, NY 10011. 1967. pp. iv+102.

Passenger ship activity in New York, existing passenger ship piers, design criteria, alternate solutions, proposed custom examination system, proposed terminal layout.

Free index terms

Document 3 A system for bus rapid transit on urban freeways.

Traffic Quarterly Oct. 1969

Describes the design of a system of buses sharing the general freeway lanes with regular traffic but having separate entrance and exit ramps. A sophisticated traffic control system would give preference to buses to guarantee predictable travel times. Compares cost and effectiveness (as measured by passengers carried in peak travel times) with other rapid transit systems.

Free index terms

Assignment 11
Lecture 8.2B, Text Chapter 13

Assigned: *Mar. 9*
Due: *Mar. 23*

Request-oriented indexing

Objectives	<ol style="list-style-type: none"> 1 Gain experience with the checklist technique of indexing 2 Practice building precombined descriptors with a faceted classification
Deliverables	Three filled-in document indexing forms
Tasks	<ol style="list-style-type: none"> 1 Checklist indexing. Index three documents with the attached index language (a faceted classification of transportation), consciously applying the checklist technique of indexing. 2 Building precombined descriptor for arrangement. After you have assigned the applicable elemental descriptors, make a precombined descriptor for the document.
Materials	<p>Document indexing forms for three documents, the same documents you indexed with free terms in Assignment 10</p> <p>An example of a filled-in document indexing form is included in the materials for this assignment</p>
Time	2 hours

The pages in this assignment are organized as follows:

First the **index language** to be used, a faceted classification of transportation
Have a look at it so that the explanation of the tasks makes more sense.

Then **detailed explanations of Task 1 and Task 2** with examples.

And last the Document Indexing Forms

Index language / classification for request-oriented indexing

This is a faceted classification of transportation to be used for Assignment 11.

For indexing use the **Indexer's classification display** included here.

For the in-class searching exercise building on this assignment you will use the **File builder's and searcher's classification display** included in the Lecture Notes.

The descriptors shown in italics with numbers D1.xx are precombined descriptors. Each system using this index language would decide whether to use these precombined descriptors (such as *D1.20 Aircraft*) or whether to index with the corresponding elemental descriptors (in the example D1 Air transport and E6 Vehicles) instead. **For this assignment use only elemental descriptors for indexing.**

Outline: Facets

B	Division by mode of transportation
E	Transportation system components
F	Power supply for vehicles
G	Type of propulsion
H	Materials to build facilities or vehicles
J	Passenger transport vs. freight transport
K	Traffic operations
L	Transportation providers
M	Creation of traffic systems and components
N	Organization, administration
Q	General and other concepts
R	Geographic range
S	Geographic location

The three facets used for arrangement are shown in **bold**.

A Transportation and traffic**B Mode of transportation**

- B1 . Ground transport
- B2 . . Rail transport
- B2.3 . . . *Intercity railroad BT R4*
- B2.7 . . . *Local rail transit BT R2*
- B4 . . Road transport
- B6 . . Pipeline transport
- B7 . . Pedestrian mode
- B8 . . Multi-modal ground transport
- C1 . Water transport
- C3 . . Inland water transport
- C7 . . Ocean Transport
- D1 . Air transport
- D1.10 . . *Air transport facilities BT E1*
- D1.20 . . *Aircraft BT E6*
- D1.30 . . . *Airplanes*
- D1.35 *Conventional airplanes*
- D1.40 *New generation airplanes*
- D1.44 *VTOL*
- D1.45 *STOL*
- D1.46 *Variable geometry airplanes*
- D1.60 . . . *Helicopters*
- D4 . . Supersonic air transport
- D7 . Multi-modal transport
- D98 . Other specific modes of transportation
- D99 . Mode of transportation not applicable

E Transportation system components

- E1 . Traffic facilities NT D1.10
- E2 . . Traffic ways
- E3 . . Traffic stations
- E4 . . Stationary equipment
- E5 . Methods to move persons or freight
- E6 . . Vehicles NT D1.20, F, G
- E7 . . . Air cushion craft
- E8 . . Containers
- E9 . . Self-transport
- E98 . Other concepts
- E99 . Transp. system elements not applicable

F Power supply for vehicles BT E6

- F1 . Hydrocarbons
- F2 . . Gasoline
- F3 . . Diesel fuel
- F4 . . Hydrocarbons from renewable sources
- F5 . Electric power
- F6 . Nuclear power
- F7 . Animate power
- F98 . Other power supply
- F99 . Power supply not applicable

G Type of propulsion BT E6

- G1 . Engine
- G2 . . Combustion engine
- G3 . . . Cylinder engine
- G4 . . . Rotary engine
- G5 . . Steam engine
- G6 . Turbines
- G7 . Walking
- G98 . Other type of propulsion
- G99 . Type of propulsion not applicable

H Materials to build facilities or vehicles

- H12 . Soils, aggregates
- H14 . Bitumen
- H16 . Cement, Concrete
- H18 . Metal
- H22 . Marking or coating materials
- H24 . Adhesives, seals
- H26 . Ceramics, glasses
- H28 . Fibers, textiles
- H32 . Plastics
- H34 . Rubbers
- H36 . Wood, paper
- H38 . Petroleum products
- H98 . Other specific materials
- H99 . Material not applicable

J Passenger transport vs. freight transport

- J3 . Passenger transport
- J4 . Freight transport
- J6 . . Transport of material of heavy weight
- J7 . . Transport of bulk material
- J99 . Passenger vs. freight transp. not applicable

K Traffic operations

- K1 . Traffic communication, control, safety
- K2 . . Traffic communications
- K3 . . Traffic control
- K4 . . Traffic safety
- K5 . Routes and schedules
- K6 . . Routes, route systems, traffic networks
- K7 . . Schedules
- K8 . Handling, loading, unloading
- K98 . Other specific traffic operations
- K99 . Traffic operations not applicable

L Transportation providers

- L2 . Organizations, companies
- L6 . Personnel, operators
- L99 . Transportation providers not applicable

M Creation of traffic systems and components

- M1 . Research, design, and evaluation
- M2 . . Research and development
- M3 . . Planning
- M4 . . Design
- M5 . . Testing, demonstration, evaluation
- M6 . Manufacturing, construction
- M7 . Acquisition
- M8 . Training
- M9 . Maintenance
- M98 . Other specific activities in system creation
- M99 . System creation not applicable

N Organization, administration

- N2 . Administration, management
- N4 . Costs, financing
- N6 . Marketing
- N8 . Legal aspects
- N98 . Other specific topics in organization
- N99 . Organization, administration not applicable

Q General and other concepts

- Q22 . Traffic flow
- Q24 . Simulation
- Q40 . System characteristic
- Q41 . . Noise, vibration
- Q42 . . Pollution
- Q43 . . Quality, performance
- Q44 . . Durability, life, reliability
- Q45 . . Demand, use
- Q46 . . Human characteristics
- Q47 . . Community characteristics
- Q49 . . Other characteristics
- Q60 . Small vs large capacity
- Q63 . . Small capacity
- Q67 . . Large capacity
- Q70 . Civilian vs military
- Q73 . . Civilian
- Q77 . . Military
- Q98 . Other general concepts
- Q99 . None of these concepts applicable

R Geographic range

- R1 . Local systems
- R2 . . Urban systems NT B2.7
- R3 . . Rural systems
- R4 . Beyond local systems NT B2.3
- R5 . . Interurban systems
- R6 . . State-wide systems
- R7 . . National systems
- R8 . . International systems
- R98 . Other specific range
- R99 . Geographic range not applicable

S Geographic location

- S1 . North and Central America
- S2 . . U.S.
- S3 . . Central America
- S4 . South America
- S5 . Europe
- S6 . Asia
- S7 . Australia
- S8 . Africa
- S98 . Other geographic locations
- S99 . Geographic location not applicable

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Detailed explanations and instructions for Tasks 1 and 2

Have a look at the sample document indexing form given below and examine the index language following the explanation of Task 2 it so you have concrete examples in mind as you read the explanations.

Task/step 1. Index the documents with elemental descriptors

The elemental descriptors are found in the faceted classification *schedule*. Use the indexing forms provided. In the space for each facet, enter the applicable descriptor(s) from that facet. When a facet does not apply to a document, you must explicitly certify this by circling *Not applicable*; you cannot skip over a facet without making an explicit decision.

Use the most specific descriptors that cover the subject. Use C3 *Inland water transport* if the document addresses just *inland water transport* (transport on rivers and lakes); use C1 *Water transport* only if the document addresses all kinds of *water transport* (inland and ocean). Hierarchically expanded searching (searching with hierarchic expansion as practiced in the Medline exercise) will make the specific documents accessible through the broader term, so there is no need to index with the broader term.

Elemental descriptors support computer searching using Boolean query formulation, but they do not support meaningful arrangement of documents as in a display of a large number of search results, in a Web subject directory, or on library shelves. For meaningful arrangement we need to build precombined descriptors.

Thus when a faceted classification is to be used for arrangement, we need an additional step as detailed in Task 2

Indexing and building precombined descriptor. Sample document

Antwerp's new container dock, K.W.Flitcroft for the Antwerp Harper Committee. Dock & Harbor Authority v 49 n 571 May 1968 p 28-30.

Dock described is protected by locks from rise and fall of tides; spreader is employed in lifting of containers and is adaptable in spread to handle both long and short types; containers can be stored on quay and special connections for powering of plants of refrigerated containers are set in concrete paving every 10 ft.; set of rail tracks runs along quay between high legs of container cranes to bring rail-hauled containers directly for lifting off.

Precombined descriptor: E3C7J4 Traffic stations > Ocean transport > Freight transport
--

Write in appropriate concept(s)		merely circle
B-D Mode of transportation	C7 Ocean transport	not applicable
E Transp. system elements	E3 Traffic stations	not applicable
F Power		<u>not applicable</u>
G Propulsion		<u>not applicable</u>
H Materials to build		<u>not applicable</u>
J Passenger vs. freight	J4 Transport of freight, material, cargo	not applicable
K Operations	K8 Handling, loading, unloading	not applicable
L Provider		<u>not applicable</u>
M Creation		<u>not applicable</u>
N Administration		<u>not applicable</u>
Q General and others		<u>not applicable</u>
R Geographical range	R8 International system	not applicable
S Geographical location	S5 Europe	not applicable

Task/step 2. Build a precombined descriptor

For purposes of this assignment, we will consider only 3 of the 13 facets for arrangement; so we will combine only the elemental descriptors from these three facets:

- B Division by mode of transportation
- E Transportation system elements
- J Passenger transport vs. freight transport

To represent the precombined descriptor, we combine the notations of the assigned elemental concepts into a notation string (see the example; for more examples see the Model Catalog, indexing with the London Education Classification). Descriptors from the other facets are not used for arrangement but they provide a more complete document representation and can be used for retrieval in a computerized system.

This raises the question: **In what order should the elemental notations be combined?** (**combination order**; the technical term used in the theory of faceted classification is *citation order*.) The combination order determines the arrangement of documents and document records (on the shelves, in a Web subject directory, in a display of search results, etc.).

The combination order must be determined in accordance with user needs. Assume the users are **engineers**. Civil engineers deal with building roads, harbors, airports, etc. while mechanical engineers deal with building vehicles. So the primary basis for arrangement should be the distinction between *traffic facilities* and *vehicles* made in Facet E, transportation system elements. Next in importance from the point of the engineer is *mode of transportation – ground, water, air*. (From an engineering standpoint, a passenger airplane has more in common with a cargo airplane than with passenger automobile.) So the combination order should be **E - B - J**.

Question: From the point of view of a **user of transportation services**, what should the combination order be? Or, as another example, consider **education with** three facets: *Grade level*, *Subject*, and *Type of student* (gifted, handicapped, etc.). Pick a user group for educational materials and determine what the combination order should be. Keep in mind that material on the facet listed first is kept together in the arrangement, material on the facet listed second is scattered, but still in "clumps", and material on the last facet is completely scattered in tiny pieces.

Arrangement of sample precombined descriptors in transportation

E1

Traffic facilities

- E1B1 . Traffic facilities > Ground transport
- E1B1J3 . . Traffic facilities > Ground transport > Passenger transport
- E1B1J4 . . Traffic facilities > Ground transport > Freight transport
- E1C1 . Traffic facilities > Water transport
- E1C1J3 . . Traffic facilities > Water transport > Passenger transport
- E1C1J4 . . Traffic facilities > Water transport > Freight transport
- E1D1 . Traffic facilities > Air transport
- E1D1J3 . . Traffic facilities > Air transport > Passenger transport
- E1D1J4 . . Traffic facilities > Air transport > Freight transport

E2

Traffic ways

- E2B1 . . Traffic ways > Ground transport
- E2B1J3 . . . Traffic ways > Ground transport > Passenger transport
- E2B1J4 . . . Traffic ways > Ground transport > Freight transport
- E2C1 . . Traffic ways > Water transport
- E2C1J3 . . . Traffic ways > Water transport > Passenger transport
- E2C1J4 . . . Traffic ways > Water transport > Freight transport
- E2D1 . . Traffic ways > Air transport
- E2D1J3 . . . Traffic ways > Air transport > Passenger transport
- E2D1J4 . . . Traffic ways > Air transport > Freight transport

E3

Traffic stations

- E3B1 . . Traffic stations > Ground transport
- E3B1J3 . . . Traffic stations > Ground transport > Passenger transport
- E3B1J4 . . . Traffic stations > Ground transport > Freight transport
- E3C1 . . Traffic stations > Water transport
- E3C1J3 . . . Traffic stations > Water transport > Passenger transport
- E3C1J4 . . . Traffic stations > Water transport > Freight transport
- E3C7 . . . Traffic stations > Ocean transport
- ▶E3C7J4 **Traffic stations > Ocean transport > Freight transport**
- E3D1 . Traffic stations > Air transport
- E3D1J3 . Traffic stations > Air transport > Passenger transport
- E3D1J4 . Traffic stations > Air transport > Freight transport

E6

Vehicles

- E6B1 . Vehicles > Ground transport
- E6B1J3 . . Vehicles > Ground transport > Passenger transport
- E6B1J4 . . Vehicles > Ground transport > Freight transport
- E6C1 . Vehicles > Water transport
- E6C1J3 . . Vehicles > Water transport > Passenger transport
- E6C1J4 . . Vehicles > Water transport > Freight transport
- E6D1 . Vehicles > Air transport
- E6D1J3 . . Vehicles > Air transport > Passenger transport
- E6D1J4 . . Vehicles > Air transport > Freight transport

Document 1. **Supersonic transport operating practices during simulated operations in future air traffic control systems environments**

Operating practices of the supersonic transport (SST) during simulated operations in air traffic control (ATC) system environments conceived for the time period of introduction of the SST into service are presented. An SST flight simulator and the Federal Aviation Administration ATC simulation facilities were used to create the real-time simulations. The SST flight simulator was operated by airline crews and the ATC simulation facilities by experienced air traffic controllers. The test program included departure and arrival operations under instrument flight rule conditions in the New York and Los Angeles terminal areas with two design study configurations of the SST. The design study configurations were representative of variable-sweep and fixed-wing design. Both designs had a variable-incidence forebody.

Precombined descriptor:

Write in appropriate concept(s)	merely circle
B-D Mode of transportation	not applicable
E Transp. system elements	not applicable
F Power	not applicable
G Propulsion	not applicable
H Materials to build	not applicable
J Passenger vs. freight	not applicable
K Operations	not applicable
L Provider	not applicable
M Creation	not applicable
N Administration	not applicable
Q General and others	not applicable
R Geographical range	not applicable
S Geographical location	not applicable

Document 2 **A Plan for a New Consolidated Passenger Ship Terminal in the Port of New York.**

Passenger ship activity in New York, existing passenger ship piers, design criteria, alternate solutions, proposed custom examination system, proposed terminal layout.

Precombined descriptor:

Write in appropriate concept(s)	merely circle
B-D Mode of transportation	not applicable
E Transp. system elements	not applicable
F Power	not applicable
G Propulsion	not applicable
H Materials to build	not applicable
J Passenger vs. freight	not applicable
K Operations	not applicable
L Provider	not applicable
M Creation	not applicable
N Administration	not applicable
Q General and others	not applicable
R Geographical range	not applicable
S Geographical location	not applicable

Document 3 **A system for bus rapid transit on urban freeways.**

(the document from Traffic Quarterly that you did in Assignment 9)

Traffic Quarterly Oct. 1969

Describes the design of a system of buses sharing the general freeway lanes with regular traffic but having separate entrance and exit ramps. A sophisticated traffic control system would give preference to buses to guarantee predictable travel times. Compares cost and effectiveness (as measured by passengers carried in peak travel times) with other rapid transit

Precombined descriptor:

Write in appropriate concept(s)	merely circle
B-D Mode of transportation	not applicable
E Transp. system elements	not applicable
F Power	not applicable
G Propulsion	not applicable
H Materials to build	not applicable
J Passenger vs. freight	not applicable
K Operations	not applicable
L Provider	not applicable
M Creation	not applicable
N Administration	not applicable
Q General and others	not applicable
R Geographical range	not applicable
S Geographical location	not applicable

Assignment 12
Lecture 9.2, Text Chapter 14

Assigned: Mar. 23
Due: Apr. 6

Conceptual analysis and synthesis

If possible, do 12.1 and 12.2 and at least start 12.3a before you come to the Small Groups 3, but do not spend a lot of time when you get stuck. Having tried will help you understand the Small Groups 3 session Hand all in on Nov.9

Objectives	<p>Solidify understanding of classificatory structure through practicing the process of conceptual analysis and synthesis as discussed in Chapter 14 and illustrated through the in-class exercise. Specifically:</p> <ol style="list-style-type: none"> 1. Understand semantic factoring through practicing it (the only way). 2. Understand how to build a hierarchy through applying the pragmatic definition of <i>A is broader than B</i> in a limited set of elemental concepts. 3. Understand the interaction between concept combination and hierarchy.
Tasks	See individual assignments in this group

Each part of the assignment is concerned with one step in the process:	
Assignment 12.1	Semantic factoring (results in a list of elemental concepts).
Assignment 12.2	Arranging the elemental concepts in a well-structured hierarchy.
Assignment 12.3	Fit compound concepts into the framework of the hierarchy (if compound concepts need to be dealt with explicitly)
	Assignment 12.3a is an exercise in facet combination unconnected to the set of concepts from Assignment 12.1.
	Assignment 12.3b returns to the set of concepts from Assignment 12.1, applying the principles learned from Assignment 12.3a

Note: The list of concepts given for Assignment 12.1 deliberately covers two domains, *Medicine* and *Transportation*. There might be elemental concepts that apply to both!

Assignment 12.1**Assigned: Mar. 23****Due: Mar. 29 - 31****Semantic factoring*****Do before you come to Small Groups 3.***

Objectives	Inherited
Deliverables	<ol style="list-style-type: none"> 1 A list of the compound concepts with their semantic factors. (You can write the semantic factors on the assignment sheet and hand that in or you can use the template.) 2 A list of the elemental concepts used, each concept on its own line. (This will be the basis for Assignment 12.2.)
Tasks	<p>Determine the semantic factors of each of the concepts designated by the following terms, that is, express each concept by a combination of elemental concepts (or what you consider elemental concepts). Some definitions to help you with this task are given on the next page. If you cannot find semantic factors, or if there are different sets of semantic factors because of term ambiguity, write a comment.</p> <p>Since you have no list of elemental concepts to choose from, you must make up your own elemental concepts and choose the terms to express them. (This happens often in the construction of index languages.) But be consistent: if the same elemental concept occurs more than once, use the same term each time.</p> <p>Note: Use the most specific elemental concept for each aspect of the concept to be expressed. For example, if the disease is a type of cancer, use the specific elemental concept <i>cancer</i> as the semantic factor, not the more general elemental concept <i>disease</i>.</p> <p>When you are finished with semantic factoring, prepare a list of the elemental concepts you used. For example, your list should have one entry for <i>cancer</i>, which occurs several times as a semantic factor. This list will be the basis for Assignment 12.2.</p>
Time	1.5 hours

Definitions you may need

Leukemia	Cancer of white blood cells (also called leukocytes)
Mononucleosis	An infectious disease of white blood cells caused by a virus
Pneumonia	An inflammation of the lungs
Conjunctiva	The mucous membrane covering the anterior surface of the eyeball and lining the eyelids Note: Consider body parts to be elemental concepts
Conjunctivitis	An inflammation of the conjunctiva. Some forms of conjunctivitis are infectious, others are not.
Wind tunnel	A tubular chamber or structure in which a steady current of air can be maintained at controlled velocity, equipped with devices for measuring [the aerodynamic] forces and moments on scale models of complete aircraft [or cars] or of their parts or of full-scale aircraft [or cars] or their parts. (Random House Dictionary)

Assignment 12.1. Concept list for semantic factoring

1.	Leukemia
2.	Leukemia - diagnosis
3.	Leukemia - drug therapy
4.	Leukemia - radiation therapy
5.	Pneumonia
6.	Pneumonia treatment
7.	Lung cancer
8.	Mononucleosis
9.	Conjunctival cancer
10.	Conjunctival cancer - radiation treatment
11.	Conjunctivitis
12.	Conjunctivitis - drug therapy
13.	Highway repair
14.	Diagnosis of car problems
15.	Car repair
16.	Wind tunnel

Assignment 12.2*Assigned Mar. 23**Due: Mar. 29 - 31***Building a hierarchy of elemental concepts***Do before you come to Small Groups 3.*

Objectives	Inherited
Deliverables	A hierarchy of <u>elemental</u> concepts shown as a linear arrangement with indentation (with cross-references as needed) Use the list of elemental concepts you prepared in Assignment 12.1
Tasks	See next page
Time	1.5 hours

over

Task:	Build a hierarchy of elemental concepts
Include only elemental concepts	<p>In Assignment 12.1 you started from a list of compound concepts and derived elemental concepts through semantic factoring. You prepared a list of elemental concepts.</p> <p>Here you start from this list (do not include any other concepts) and establish the hierarchical relationships among them. For example, in the hierarchy</p> <p style="padding-left: 40px;">do include <i>Cancer</i> (elemental concept)</p> <p style="padding-left: 40px;">do not include <i>Leukemia (Cancer of Leukocytes)</i> (compound concept)</p> <p>You will have a chance to fit compound concepts into a hierarchy in Assignment 12.3b, where you will build a hierarchy that includes all the concepts used in Assignment 12.1 in a well-structured arrangement..</p> <p>Note: In a hierarchy such as</p> <p style="padding-left: 40px;">Cancer Diagnosis</p> <p>“Diagnosis” does not refer to the elemental concept <i>Diagnosis</i> but to the combination</p> <p style="padding-left: 40px;"><i>Cancer > Diagnosis</i></p> <p>So this should not be included in a hierarchy of elemental concepts.</p>
All hierarchical relationships	<p>Be sure to introduce all hierarchical relationships that are useful for searching and/or the checklist technique of indexing.</p> <p>Before you stipulate that concept A has a Narrower Term B, ask: Does a user searching for A want to find all entities dealing with or relevant for B?</p>
May need additional broad concepts	<p>You may need to introduce additional <u>broad</u> concepts to make for a more logical, more easily understood hierarchy. In many places additional <u>specific</u> concepts will suggest themselves from the logic of your hierarchy; you need not add those, but you may add a few examples.</p>
Overall arrangement	<p>Your hierarchy may include one part for <i>Medicine</i>, one part for <i>Transportation</i>, and one part for concepts needed in both domains (if any) or not fitting in any of the two domains.</p>
Represent hierarchy in outline format	<p>Any hierarchical relationship A has Narrower Term B should be shown by arrangement and indention (outline format) where possible and through a cross-reference otherwise. A hierarchy shown in a linear arrangement is often easiest to construct and always easiest to read. Since the hierarchy contains only elemental concepts there will be few if any cross-references needed.</p>

Assignment 12.3a

Assigned: Mar. 23

Due: Mar. 29 - 31

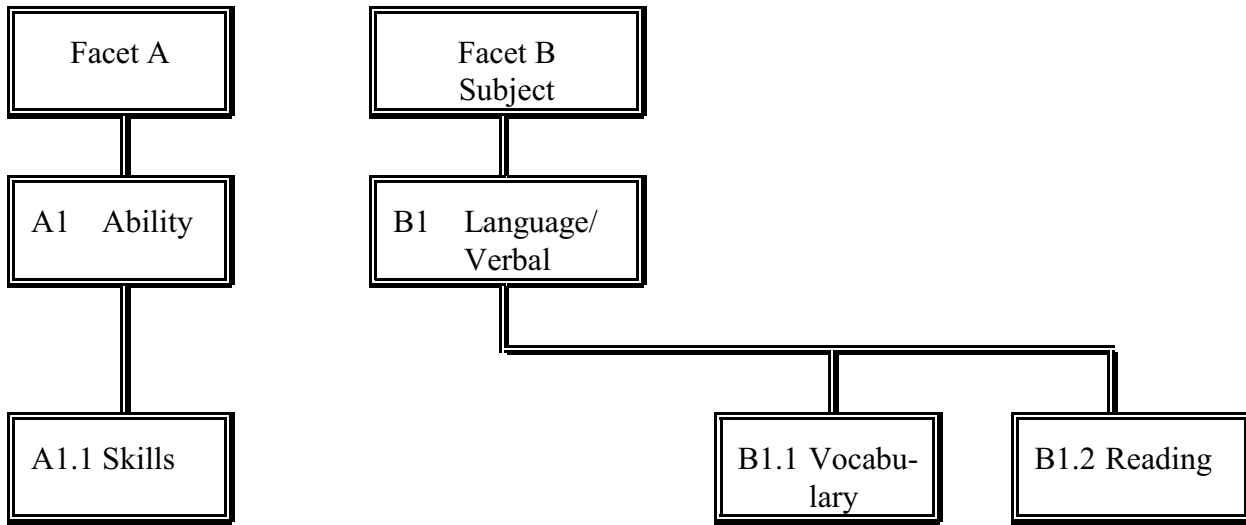
Hierarchy from facet-combination. General practice

Before Small Groups 3, read through this assignment and do as much (or as little) of it as you can do easily. After Small Groups 3, complete or revise your answer.

Objectives	Inherited
Deliverables	<ol style="list-style-type: none"> 1 Hierarchy in graphical arrangement (can be on the assignment sheet). 2 Hierarchy in linear arrangement with indention, with cross-references. 3 Hierarchy in another linear arrangement with indention, with X-ref.
Tasks	<p>Construct the hierarchy of elemental and compound concepts generated by the two facets given on the following sheet. Use only between-facet combinations, that is, only combinations of an A-concept with a B-concept. Do not combine the facet headings (Facet A, Facet B) with anything. Represent this hierarchy graphically. (You can draw on the assignment sheet.)</p> <p>Then represent the hierarchy in outline form (a linear arrangement with indention) with cross-references. Repeat this choosing a different possibility for the linear sequence.</p> <p>Note 1: When you do a linear arrangement with cross-references, many hierarchical relationships are shown by the arrangement. These relationships do not need to be shown again through cross-references. Only relationships <u>not</u> shown through the arrangement require cross-references.</p> <p>Note 2. This assignment uses classification concepts and procedures already discussed but you may still find it difficult, particularly since this is the first case with hierarchy in both generating facets. This assignment shows you (and the instructor) to see just what you do or do not know and forces you to thoroughly think about the problem. The assignment prepares you for Small Groups 3.</p> <p>Note 3: This assignment deals with the problem of constructing a hierarchy from facet combination in the context of a simple example unconnected to the set of concepts from Assignment 12.1. You deal only with the concepts given on the following page and their combinations; do not introduce any other concepts.</p>
Time	2 hours

Name:

Assignment 12.3a



To be handed in

Assignment 12.3b**Assigned: Mar. 23****Due: Apr. 6**

**Hierarchy from facet-combination.
Application to the set of concepts from Assignment 12.1**

Do after Small Groups 3.

Objectives	Inherited
Deliverables	A hierarchy in linear arrangement with indention and cross-references
Tasks	See next page
Time	2 hours

over

Task

You will now apply the principles you have learned from Assignment 12.3a to the set of concepts from the Assignment 12 domain. Arrange all the concepts from Assignments 12.1 and 12.2 (both the compound concepts which are given and the elemental concepts that you derived) in a hierarchy. Represent the hierarchy in a linear arrangement with cross references; **graphical representation is not required** nor particularly useful (there are too many concepts).

Start from the hierarchy of elemental concepts you developed in Assignment 12.2 and fit the compound concepts given in Assignment 12.1 into the structure. A compound concept has more than one broader concept; choose one place for the arrangement and make a cross-reference from the other. **No need to create all possible combinations of elemental concepts (as you did in Assignment 12.3a); just use the compound concepts actually listed in Assignment 12.1**, possibly adding a few new concepts to fill in hierarchical steps or otherwise make the hierarchy more logical .

Hints

You will get a clearer view of your hierarchy if you use a word processor rather than handwriting. You can just copy the text from Assignment 12.2 and insert the compound concepts.

Write out each term so it can stand on its own outside the hierarchy

Not

Lung cancer
. Therapy

But

Lung cancer
. Lung cancer - Therapy [LCSH form. Yahoo form: Lung cancer > Therapy]

Do not introduce cross-references for hierarchical relationships that can be seen from the arrangement. Cross-references are used to show **additional** hierarchical relationships.

Assignment 13 (Lecture 10.2)**Analysis of and practice with index languages/classification schemes****Information that applies to ALL Assignments 13.1-13.4 (inherits down)**

Objectives	<p>Be able to use index languages/classifications to index and to search.</p> <p>1 General: Understand the principles governing the structure of index languages/classifications and be able to apply these principles to an analysis of existing schemes</p> <p>2 Specific: Gain some familiarity with the index languages covered and grasp their basic structure and be able to use them to index documents and to formulate queries in simple cases.</p>
Schemes covered	<p>13.1 Dewey Decimal Classification (DDC): Due Apr. 13, Discussed on Apr.6</p> <p>13.2 ERIC Thesaurus: Due Apr. 20, Not Discussed</p> <p>13.3 Library of Congress/Sears Subject Headings (LCSH): Due Apr. 20, Not Disc.</p> <p>13.4 Yahoo: Yahoo classification (a semi-faceted scheme)</p> <p>OR LCC: Library of Congress Classification: Due May 4, Discussed Apr. 20</p>
Deliverables	<p>For all schemes: The filled-in worksheet</p> <p>For all schemes: The filled-in document forms and query forms</p> <p>For LCSH:</p> <p>The filled-in Outline for the analysis of Knowledge Organization Systems</p>
Tasks and materials See next page	
Pages for each scheme	<p>Overview, list of readings and other materials (yellow)</p> <p>Worksheet and Introduction to electronic version, if any (white)</p> <p>Outline for the analysis of Knowledge Organization Systems (purple)</p> <p>Instructions for indexing and query formulation (white)</p> <p>Sample pages from print version</p>
Indexing and query forms used for all schemes	<p>Document indexing forms A -C</p> <p>Query forms D - F</p> <p>The same documents and queries are used for all schemes</p> <p>Title page and other relevant pages from the documents to be cataloged are found at the end of the assignment packet. (white)</p>

You can work on these assignments in study groups.

You may want to schedule a lab session with instructor or GA.

You must hand in the deliverables individually.

Tasks for each assignment

1. Guided exploration (worksheet)	<ul style="list-style-type: none"> • Read introductory materials. • Familiarize yourself with the scheme and how it is presented. • Work through a worksheet and the electronic version exercise as applicable.
2. Indexing and query formulation	See front page of Indexing and Query Forms for specific instructions.
3. Summary analysis	For LCSH fill in the Outline for the analysis of Knowledge Organization Systems (in the materials, purple), using the filled-in forms for Yahoo and DDC as examples. Telegraphic style ok. If an answer would require extensive study, give your best guess and mark it "(guess)".

Method and materials

Readings	<p>Needham, <i>Organizing knowledge in libraries</i>, Chapter 7, Classification, p. 109-132 (review of classification principles, esp. facet analysis and synthesis) and Chapter 8, Schemes of classification, esp. p. 133, p.140-152 (DDC), p. 163-168 (LCC) (General introductory reading)</p> <p>Other readings given with the schemes and in the weekly schedule</p> <p>The Model catalog is helpful as a source of examples</p>
Model catalog	(Paper and electronic) Covers 25 education documents indexed and arranged by the various index languages. Can be used to study the application of the various index languages and to compare them.

Assignment 13.1**Assigned: Apr. 6****Due: Apr. 13****Dewey Decimal Classification**

Objectives	Inherited from Assignment 13
Deliverables	The filled-in worksheet, parts 1 - 4 (5 will be done in class) The filled-in document forms and query forms (Examine the <i>Outline for the analysis of Knowledge Organization Systems</i> , which is already filled-in)
Tasks	Inherited from Assignments 13 Complete the DDC worksheet except Section 5 which will be done in class . Do the exploration of WebDewey (which follows the worksheet) as part of the first task in the worksheet; then you can use it in subsequent parts. Login information to WebDewey is given in the WebDewey Exploration.
Materials	<ol style="list-style-type: none"> 1. The newest edition is edition 22 (2003), but you can also work with edition 21(1996) available in Baldy 14A or many libraries. There is also WebDewey (by no means an improvement over the CD-ROM Dewey for Windows, which is no longer available). DDC22 may also be available in your public library. The structural principles and the basic layout of the scheme have remained the same over time. 2. General summary of DDC and more detailed summaries of the areas of Education (included in this package, following this page). 3. Resources on the Web (optional). http://www.oclc.org/dewey/
Readings	For further study Chan, Lois Mai; Comaromi, John P.; Satija, Mohinder P. 1994 Dewey decimal classification. a practical guide. 2. rev. ed. Albany, NY: Forest Pr.; 1996. Z696.D7C48.1994
Time	6 hours (first half - 3 hours; second half - 3 hours)

DDC Worksheet

Name:

65 min. 1. General layout and principles of use of DDC	
General layout	<p>Look at the volumes and familiarize yourself with the general layout of the classification by reading through the first and second "summary" (including the summary of the "Tables"). Then skim the third summary, reading thoroughly only the section 370, 380, and 620 (all attached). Then skim 370 and 380 in the schedules (vol. 2), skim 629.2 (vol.3).</p> <p>Do the WebDewey exercise (attached), parts A and B now, part C later..</p>
Fundamental rules of use	<p>(1) Never assign a class number simply taken from the alphabetical index; always check the number in the schedules before using it. Finding the appropriate class number is often quicker in the schedules (scan the right section) than in the alphabetical index with subsequent check in the schedules.</p> <p>(2) Always read the instructions given in the schedules and in the manual very carefully. There are many exceptions to general rules!</p>
Focus of document	<p>For determining the proper DDC class always ask yourself:</p> <p>What is the focus of this document? Where does this document belong basically? See examples on the next page</p>

Document focus examples

Example 1. Sheep

The anatomy of sheep	Keeping sheep. A farmer's manual	Sheep hunting for profit and pleasure
500 Natural sciences and mathematics 590 . Animals [natural history and descriptive biology] 599 . . Mammalia (Mammals) 599.6 . . . Ungulates 599.64 Bovidae 599.649 Sheep	600 Technology (Applied Sciences) 630 . Agriculture and related 636 . . Animal husbandry 636.3 . . . Sheep	700 The arts. Fine & decorative 790 . Recreational and performing 799 . . Fishing, hunting, shooting 799.2 . . . Hunting 799.27 Specific big game 799.27|6 Ungulates 799.27|64 Bovidae 799.27|649 Sheep

- **Always interpret the meaning of a class caption in context**
 599.649 means the *natural history and descriptive biology of sheep*
 799.27|649 means the *hunting of sheep*
- The classes 799.27|6, 799.27|64, and 799.27|649 are built from the pattern under 599; more on building classes in Section 3. (the symbol | separates components of a built class number.)
- All these numbers are found under *sheep* in the relative index where you can also see that *sheep's milk* and *sheep's wool* are in different places still.

Example 2. Taxicabs. Document: **Urban transportation services using taxicabs**

The document is clearly focused on *Commerce, communication, transportation*, specifically local transportation. It would therefore be wrong to use

629.222 32 Taxicabs

which is part of 600 *Technology* and means *Technical aspects of taxicabs*. The correct class is

300	The social sciences (the main class)
380	. Commerce, communication, transportation
388	. . Ground transportation
388.4	. . . Local transportation [<i>Urban transportation</i> is local]
388.41	. . . . Vehicular and pedestrian traffic
388.413	. . . . . Activities and services
388.413 2	. . . . . Vehicular services
388.413 21	. . . . . Services by private passenger automobiles
388.413 214	. . . . . Taxicabs and limousines

Now try

The economics of trucking services (Hint: check out 629.22 and 388.3 and note that trucking services could be local or long-distance, thus do not fit under 388.4):

►A

40 min.	2. Building new precombined classes	May need to ask in class about this
Introduction	<p>The DDC schedules (vols 2 and 3) enumerate many precombined descriptors, but packing all the concepts of a document theme into one class often requires still more precombination. DDC allows for building new precombined descriptors (classes). Since each built class is represented by a built class number, this is often called number building.</p> <p>Any Dewey class number (enumerated or built) has a decimal point after the third digit and a blank space after the sixth digit. We show the division of a built number into its components through |. (The symbol | setting off components of a built number is not part of the “official” Dewey number. Nevertheless, in this assignment include the | for your own understanding.)</p> <p>To build the number for a new precombined class, one starts with a class number given in the schedule and appends digits from another place, often from a table, as explained in this part of the worksheet.</p> <p>Note: In Dewey number building instructions, “add” it means “append”. In LCC number building instructions, “add” means “use a calculator”.</p>	

2.1 Building new precombined classes 1: General tables	
General tables	<p>The most prominent number-building feature in DDC is the use of the general <i>Tables</i> (v. 1), which apply to all Dewey classes. Numbers from these tables are never used alone but combined with base numbers from the schedules.</p> <p>The following instructions introduce Table 1. Standard subdivisions and Table 2. Geographical areas.</p>
Table 1. Standard Subdivisions	<p>Numbers from Table 1 may be combined freely with any number from the schedules, e.g.,</p> <p><i>modern Indic languages</i> (491.4), <i>classification of</i> (Table 1 / -012): 491.4|012.</p> <p>(Note: The '-' in front of 012 just shows that this number must not be used alone; the hyphen does not become part of the number: 491.4-012 is wrong!)</p> <p>Example 2:</p> <p>530|.0712 <i>12th grade physics</i> (530 Physics, Table 1 / -0712 Secondary ed.)</p> <p>Now build the class number for</p> <p>Railroads (385) directory (of persons and organizations) (T1 / -025):</p> <p>►B</p>

2.1 Building new precombined classes 1: General tables, continued

Table 2.
Areas.

Areas from Table 2 can be added according to the following rules:

(1) **By direct addition when so noted in an instruction in the schedules**

Examples:

378.73 Higher education in the US (as instructed at 378.4-.9)

372.9 *Historical, geographical, persons treatment of elementary education* has a note to add directly from Table 2, T2 / -52 is *Japan*, thus

372.9|52 *Elementary education in Japan*

(2) **Through the interposition of "Standard Subdivisions" notation -09 from Table 1** whenever there is no special instruction.

Example:

385 *Railroad transportation* has no special instruction about adding areas directly, thus

385|.09|52 *Railroad transportation in Japan*

The "linkage" function of the standard subdivision -09 is fully explained under

Table 1, -093-099 Treatment by specific continents, countries, localities; extraterrestrial worlds
History and description by place, by spec. instance of the subject

Add "Areas" notation 3-9 from Table 2 to base number - 09. e.g., the subject in the *United States* - 09|73, in *Brazil* -09|81, in *North America* -09|7.

Class persons associated with the subject regardless of area, region, place in -092; treatment by areas, regions, place not limited by continent, country, locality in -091; history and description of the subject among groups of specific kinds of persons in -088, among specific racial, ethnic, national groups nondominant in their continents, countries, localities in -089.

Now build class numbers for the following::

River transportation (386.3) in the U.S. (T2 / -73) (no instruction with 386.3)

►C

The role of trucks in transportation in Germany (area -43)

►D

Again: Add area numbers without intervening 09 only if instructed to do so.

2.1 Building new precombined classes 1: General tables, continued	
Other general tables	Never add numbers from Tables 3-7 unless an instruction tells you that they can be used.
Combination from several tables	When so instructed (and only then), you can build a very specific class by adding from two tables. As an example, go to Table 1 / -025 and read the instruction. You see that one can build the class 385|.025|52 <i>Railroad directories for Japan</i> .

15 min.	2.2 Building new precombined classes 2: Local tables
	<p>Local tables are found in the schedules and apply only to a specified range of classes. For example, at the beginning of 372.3 - 372.8 <i>Elementary education in specific subjects</i> (DDC21 vol.2, p. 779), there is a table that applies only to this range of classes. This table “hijacks” -04 of Table 1. Read this table and the instructions, and then build the number for</p> <p>Curriculums for elementary school science:</p> <p>►E</p> <p>For a more extensive local table see 362-363 <i>Specific social problems and services</i> (vol.2, p.682), which gives such concepts as 1 <i>Social causes</i> and 62 <i>Standards</i>, or 616.1- 616.9 <i>Specific diseases</i> (v 3, p.68).</p>

15 min. 2.3 Building new precombined classes 3: Applying the pattern of subdivision found in a different place in the schedules as a model	
Pattern models	<p>Consider a variation on the taxicab example from Section 1 (Example 2). In Section 1 emphasis was on transportation services using a type of vehicles, here the focus is on the vehicles themselves, but in a transportation context (rather than their technical construction), such as a document that is a register of taxicabs in Chicago. This is an example of choosing the proper class based on focus on a detailed level, but the main focus here is on building classes. There is no enumerated class for this topic, the classification only goes as far as shown here:</p> <pre> 300 The social sciences (the main class) 380 . Commerce, communication, transportation 388 . . Ground transportation 388.3 . . . Vehicular transportation 388.34 Vehicles </pre> <p>To class more even more specifically, follow the instruction given for 388.342-.348: Add to 388.34 the numbers following 629.22 in 629.222-228, e.g., <i>taxicabs</i> 388.34|232. In other words, the subdivision of vehicles given in the technical class is reused here, saving space in the schedule.</p> <p>Now build the class number for</p> <p>Trucks (transportation focus)</p> <p>►F</p>

2.4 More examples for building classes	
More examples	<p>For further examples see the model catalog. But note that in the model catalog, numbers for area and historical period have been added far beyond what is usual, resulting in long numbers. The common practice often omits the area 73 U.S. and the modern time periods. DDC 18 allowed for even more specific (and longer) numbers: 09 followed by area notation followed by time notation taken from 930-990; the official rules of DDC21 (started in DDC19) allow only subdivision by place and not further subdivision by time.</p> <p>Example:</p> <pre> DDC18: 386.4|09|73|0917 Canal transportation in the U.S. in the Administration of Franklin D. Roosevelt DDC21: 386.409|73 Canal transportation in the U.S. </pre> <p>Any individual system can, of course, apply DDC any way its designers see fit if they are not worried about compatibility.</p>

45 min.

3. Probing the conceptual cross-reference structure (BT, NT, RT)**Cross-reference structure**

For each example, give the class number and list 5 - 7 cross-references that *should* be there, followed by (Sched) if they are given in the schedules, (Rel) if they can easily and obviously be located through the Relative Index, and (No) if they are not given either place. Remember that semantic factoring can be used to detect cross-references needed. Use the Relative Index to find the class numbers for the concepts to which cross-references should be made, but do not spend more than 45 min. on this section.

Note: A cross-reference "should" be there if it would help the user to know about the classes referred to. Of the cross-references that should be there by this definition, Dewey includes very few. Your task is to supply the missing cross-references, or at least some of them.

School nursing services

▶G

Blind students

▶H

Elementary education in music composition

▶I

4. Comparison of exhaustivity and specificity of indexing in two schemes

Introduction and definition of task

Exhaustivity and specificity of indexing are important parameters that affect retrieval performance. (See Organizing Information, Chapter 16, for definitions.) This part of the assignment will help you gain a better understanding of these parameters. For three documents, you will compare DDC with the faceted London Education Classification (LEC).

Examine the entries for the three documents below (each has a grid to be completed by you). Your task is to compare the exhaustivity and specificity achieved with the LEC with that achieved with DDC (the one Dewey class used for the call number) as shown in the example.

The descriptors from LEC and; the Dewey class are given. As discussed in Chapter 16, in order to compare exhaustivity and specificity of two sets of descriptors assigned to the same document, one must first semantic factor the descriptors to arrive at two lists of elemental concepts, which can then be compared. The LEC concepts are already elemental. **Determine the semantic factors of the Dewey class; all you need for this is the class caption, such as *Organization and activities in secondary education > curricula*. Enter the resulting elemental concepts in column 2, matching them up with the LEC concepts where possible.** Use the blank row if there is a concept from DDC without a corresponding concept from LEC. The elemental concept from the Dewey class may be broader or narrower than the LEC concept. For some LEC concepts there may be no elemental concept from the Dewey class; conversely, an elemental concept from the DDC class may have no corresponding LEC concept. In column 3 circle or underline the scheme that has the more specific concept. Can you detect a pattern? Discuss below at ►J.

LEC outline		Some LEC examples	
B	Education: foundations, principles, policy, etc	Bap	Educational opportunities; Bep Statistics of educ. Betm Financial resources; Bid Government Center
D	School buildings, bldg. services, equipment	Def	Music Room; Dvo Computer
F	The teaching profession, personnel management	Fal	Responsibility; Fas Recruitment
G	Type of personnel in education	Gan	Dean; Get Librarian; Gon Nurse
H	Management of educational institutions	Hab	Management of education; Heb Admission
Hs-z	Human biology. Health and hygiene	Htw	Motor ability; Huv Neurosis
J	Psychology of education. Educ. measurement	Jze	Emotion; Jed Student discipline; Jud Counseling
K	Educand's work (study method, interests, voluntary vs. compulsory work)	Kad	Study methods; Kib Children as writers
L	Teaching method	Lah	Team teaching; Lep Group work; Lus Library
M-P	Subject taught (Curriculum)	Mab	Curriculum, syllabus, in general; Mok Biology
Rab-Sus	Grade level and type of institution	Rib	Comprehensive school; Rek Secondary school - upper
Svb-Tvp	Educands (by age, by exceptional requirements, and other characteristics)	Svg	School child, pupil; Teb Blind and partially sighted

Example

373.19 Organization and activities in secondary education > curricula

Note: This class caption is all you need to semantic factor the DDC class to arrive at the elemental concepts to put in column 2.

Conant, James Bryant, 1893-1978

The comprehensive high school; a second report to interested citizens

LEC concepts	Elemental concepts from DDC class	Which scheme is more specific?		
Rib Comprehensive (type of school)		SAME LEC DDC		
Rek Secondary school-upper	Secondary education	SAME <u>LEC</u> DDC		
Mab Curriculum, syllabus, in general	Curricula	<u>SAME</u> LEC DDC		
Bept Statistics of education		SAME LEC DDC		
Bap Educational opportunities, access to education		SAME LEC DDC		
No. of concepts		1	1	0

Exhaustivity		Specificity	
LEC elemental concepts	5	LEC same as DDC	1
DDC elemental concepts	2	LEC more specific	1
		DDC more specific	0
More exhaustive: LEC		Overall more specific: LEC	

In this example: LEC indexing has 5 concepts, DDC indexing 2, thus LEC is more exhaustive

Of the two common concepts, one is more specific in LEC and one is the same specificity, thus, for this document, indexing with LEC is more specific overall.

Example, repeated**373.19 Organization and activities in secondary education > curricula**

Conant, James Bryant, 1893-1978

The comprehensive high school; a second report to interested citizens

LEC concepts	Elemental concepts from DDC class	Which scheme is more specific?		
Rib Comprehensive (type of school)		SAME LEC DDC		
Rek Secondary school-upper	Secondary education	SAME <u>LEC</u> DDC		
Mab Curriculum, syllabus, in general	Curricula	<u>SAME</u> LEC DDC		
Bept Statistics of education		SAME LEC DDC		
Bap Educational opportunities, access to education		SAME LEC DDC		
	No. of concepts	1	1	0

Exhaustivity		Specificity	
LEC elemental concepts	5	LEC same as DDC	1
DDC elemental concepts	2	LEC more specific	1
		DDC more specific	0
More exhaustive: LEC		Overall more specific: LEC	

In this example: LEC indexing has 5 concepts, DDC indexing 2, thus LEC is more exhaustive. Of the two common concepts, one is more specific in LEC and one is the same specificity, thus, for this document, indexing with LEC is more specific overall.

Document 1

378.111 **Higher Education > Organization and activities in higher education > Personnel management > Administrators**

Dibden, Arthur James, 1919-

The academic deanship in American colleges and universities

LEC concepts	Elemental concepts from DDC class	Which scheme is more specific?		
Sab Institutions of Higher Education		SAME LEC DDC		
Hab Management of Education		SAME LEC DDC		
Gan Dean		SAME LEC DDC		
Ban Sociology of Education		SAME LEC DDC		
		SAME LEC DDC		
	No. of concepts			

Exhaustivity		Specificity	
LEC elemental concepts		LEC same as DDC	
DDC elemental concepts		LEC more specific	
		DDC more specific	
More exhaustive:		Overall more specific:	

Document 2

379.1214 **Public policy issues in education > Specific elements of support and control of public ed. > Support by specific level of government > Support by national governments > National support of higher ed.**

Wakefield, Rowan Albert, 1919-

Sources of Federal support for higher education. Experimental systems for a national information network.

LEC concepts	Elemental concepts from DDC class	Which scheme is more specific?		
Sab Higher education		SAME LEC DDC		
Dvo Computer		SAME LEC DDC		
Buxt Information services		SAME LEC DDC		
Bid Government: central		SAME LEC DDC		
Betm Financial resources		SAME LEC DDC		
Bepd Economics and education		SAME LEC DDC		
		SAME LEC DDC		
	No. of concepts			

Exhaustivity		Specificity	
LEC elemental concepts		LEC same as DDC	
DDC elemental concepts		LEC more specific	
		DDC more specific	
More exhaustive:		Overall more specific:	

Document 3

027.8 School libraries

Delaney, Jack J.

The school librarian. Human relations problems.

LEC concepts	Elemental concepts from DDC class	Which scheme is more specific? LEC or DDC		
Svg School child, pupil		SAME LEC DDC		
Rag School education and systems		SAME LEC DDC		
Lus Library		SAME LEC DDC		
Jed Discipline (psychological aspects of relationship)		SAME LEC DDC		
Hab Management of education		SAME LEC DDC		
Get Librarian, teacher librarian		SAME LEC DDC		
Fal Role, responsibility		SAME LEC DDC		
		SAME LEC DDC		
	No. of concepts			

Exhaustivity		Specificity	
LEC elemental concepts		LEC same as DDC	
DDC elemental concepts		LEC more specific	
		DDC more specific	
More exhaustive:		Overall more specific:	

Brief discussion of what you saw from these examples:

►J

The last task in this worksheet will be done in class

30 min.	5. Further probe into the structure of DDC
More DDC structure	<p>Analyze two cases of instructions in the DDC schedules. Discuss each instruction briefly.</p> <ol style="list-style-type: none">(1) with respect to combination order (in Case 1, is the order Level of education – Subject or the other way around?)(2) with respect to the effect on the (2.1) exhaustivity and (2.2) specificity of indexing (how many of the aspects for which a document is relevant are represented in the Dewey class (precombined concept) to be used; at what level of specificity); and(3) with respect to the effect on retrieval.

Example

Consider the two books and their Dewey classes

Two facets are coded as follows: **Process** *Organ system*

(I) The action of Robitussin on the bronchi

615.72 Pharmacology and therapeutics > Pharmacodynamics > Drugs
affecting the *respiratory system*

(ii) Drug therapy of bronchial disease

616.23|0 61 Diseases > Dis. of spec. systems and organs > Dis. of the nose, larynx, and
access organs > Diseases of the *trachea and bronchi* > Drug therapy

Analysis using the framework given

(1) Combination order

(I) books on drug action: **Process** – *Organ system*

(ii) books on drug therapy: **Disease** – *Organ system* – **Process**

(2.1) Exhaustivity of indexing – which facets are represented in the class?

(a) books on drug action: Both **process** and *organ system* are indexed

(b) books on drug therapy: Same

(2.2) Specificity of indexing – how specific is the concept from each facet?

(a) books on drug action: **Process:** Broad *Organ:* Broad (respiratory. system)

(b) books on drug therapy: **Process:** Broad *Organ:* Specific (trachea and bronchi)

(3) Effect on retrieval (recall and discrimination). Consider the query topics

(question 1) Drug action AND *Bronchi*;

(question 2) Drug therapy AND *Bronchi*

q1 cannot be searched specifically, need to broaden *Bronchi* to *Respiratory system*, low discrimination. q2 can be searched specifically.

Advanced example (optional): (question 3) Drug action or therapy AND *Bronchi*

Very tricky: if it is posed as given, it will find documents under 615.23|0 61, but not under 615.72, giving low recall. Broadening the organ component will increase recall but in this case lower discrimination.

In Case K and Case L you will analyze these problems in the area of education, exploring the effects of the following instruction with 370 Education (slightly edited):

Case K: Level of education versus subject

<p>(a) Class special education in a specific subject in 371.9 This takes precedence, (b) and © apply only if not special education</p>
<p>(b) Class elementary education in a specific subject in 372.3-372.8.</p> <p>Example: a book on <i>Physics experiments for third grade</i> would be classed under 372.35 Elementary education in specific subjects > Science and technology</p>
<p>© Class works on secondary, higher, and adult education in a specific subject with the subject plus the appropriate number under 071 from Table 1 Standard subdivisions</p> <p>Example: The book <i>12th grade physics</i> would be classed under 530|.0712 (530 Physics; 0712 Secondary education, from Table 1)</p> <p><i>Freshmen physics</i> under 530|.0711 (0711 Higher education, from Table 1)</p>

Case K deals with (b) and ©, Case L takes up (a)

K Analyze Case K; write your answers in the proper slots.

(1) Combination order (**Level** – *Subject* or *Subject* — **Level**)

(a) books on the elementary level:

(b) secondary or higher level:

(2.1) Exhaustivity of indexing — which facets are represented in the class?

(a) elementary level:

(b) secondary or higher level:

(2.2) Specificity of indexing — how specific is the concept from each facet?

(a) elementary level: **Level:** *Subject:*

(b) secondary or higher level: **Level:** *Subject:*

(3) Effect on retrieval (recall and discrimination)

Consider the query topics

Physics AND Elementary school versus

Physics AND Secondary education

Write a very brief analysis

Case L: Special education, level of education, and subject (Advanced, optional)

Dewey rules	
At 370 Education	Remember from the instruction with 370 Education: Class special education in a specific subject in 371.9 Special education.
At 371.9 Special education	<p>To each subdivision identified by * add (append) the numbers following 371.904 in 371.904 3 - 371.904 7. At 371.904 4 Programs in specific subjects we are further instructed to add (append) the number following 372 in 372.3 - 372.8</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Example 1: the book <i>High school physics for blind students</i> would be classed under 371.911|4|35 Special education > Blind students > in specific subjects/ Science and technology</p> <p>Class number built following instructions at 371.9, which inherit down to 371.911 as indicated by the *: 4 is from 371.904 4 Programs in specific subjects 35 is from 372.35 [Elementary education in] Science and Technology</p> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Example 2: the book <i>Accommodations for blind students in high school</i> would be classed under 371.911|73 73 is from 371.904 73 Special education at secondary level</p> </div>
Note	Class 371.9 provides a rich example for this kind of analysis. In Dewey 20 it was possible to specify both educational level and subject within subdivisions of special education.

L Analyze Case L; write your answers in the proper slots. (Advanced, optional)

(1) Combination order

(2.1) Exhaustivity of indexing — which facets are represented in the class?

(2.2) Specificity of indexing — how specific is the concept from each facet?

:

(3) Effect on retrieval (recall and discrimination)

Invent some query topics for illustration

Write a very brief analysis

WebDewey Exploration

Introduction	<p>WebDewey allows for</p> <ul style="list-style-type: none"> A. navigation in the classification and B. for specific search by class number or word. <p>This provides power not available with the printed version. However, the printed version has its own advantages. Compare!</p> <p>You should know your way in Windows (e.g., know how to minimize a window or how to copy and paste text from WebDewey and save some time).</p> <p>You may use WebDewey for any part of the Dewey assignment, but you should also gain some experience with using the printed volumes so that you can compare.</p>
To start	<p>You can access WebDewey on OCLC Connexion as follows</p> <p>http://connexion.oclc.org/</p> <p>Authorization: 100-043-237</p> <p>Password: land1 (that is <i>land</i> followed by the digit 1)</p> <p>Click on Logon</p> <p>In the bar on the top,</p> <p style="padding-left: 40px;">click on ⇒DeweyServices</p> <p>Note: You can also explore other functions in Connexion, especially the Resource Catalog (Cataloging > Search > select Resource Catalog in drop-down box). It lets you view bibliographic records for all kinds of documents, including many Web sites, in a variety of formats, including MARC and Dublin Core.</p>
Note`	<p>The prompt numbers you see may be different from the ones given in the following instructions. The prompt numbers may change from session to session.</p>

A Navigation-based search of the classification

A1 Walking down (and up) the hierarchy – schedule and tables	
Navigate hierarchy	<p>In the bar near the top, click on Browse.</p> <p>In lower half of screen, click on Go to: <u>Main Classes</u> or Tables.</p> <p>Click your way down the tree: 300 370 372-374 (observe the Notes) . . .</p> <p>Hint: In this display, you must click on the class text, called caption.</p> <p>Next, click on Tables (this opens a new browser window).</p> <p>Explore Table 1 (see the notes), especially T1– 07 several levels down.</p>

A2 Browsing page-by-page	
Browse page	<p>Be sure you are in the browser window labeled OCLC Connexion in the task bar</p> <p>Click down to make 372.35 *Science and technology the active term (bold).</p> <p>Now, in the upper right, click the Browse button.</p> <p>Page up (button on upper left); look at the pages to get an idea, until you see</p> <p style="padding-left: 40px;"><i>372.1262 Standardized tests--elementary education</i></p> <p>Click on that. You are now back in the walk-up-and-down hierarchy display.</p> <p>Note that 372.1262 <i>Standardized testing</i> is a built class.</p> <p>Click on 372.11-372.18 to see the rule for building the classes under 372.1</p> <p>Note: The Browse display does not show whether a class is enumerated in the printed schedule or built. For WebDewey this may not make much difference since all the classes listed are enumerated in it by definition.</p>

A3 Jump into the page-by-page display at a given location	
	<p>In the text box on the top of the screen, enter 620.</p> <p>Turn on the radio button Browse.</p> <p>In the drop-down box after in select Dewey numbers, click the Browse button.</p> <p>Explore that area of the classification.</p>

B Query-based search of the classification

In the navigation bar on the top click on **Search**.

In Search you specify

a starting point, a word or class number typed in a text box labeled **for** and a relationship type to follow, here expressed as a field in which to search, selected from the drop-down box labeled **in**.

B0 Fields that can be searched	
Searchable fields	All Fields (al:) (default) All Dewey (ad:) Dewey Numbers (dd:) Captions (class name or text) (cp:) Relative Index (ri:) Notes (nt:) LCSH (editorially mapped) (em:) LCSH (editorially or statistically mapped) (lc:)

B1 All Fields search for words	
Word search	<p>Query: <i>computer* and education*</i> (* truncates)</p> <p>In the text box labeled for, type <i>computer* and education*</i>, make sure</p> <p>press [Enter].</p> <p>Click on the arrow next to the View list box to get to the next ten results.</p> <p>Click on the number <i>11</i> next to <i>371.956 Teaching methods</i> to display the full record. Why was this class found?</p> <p>Note: Click on the search result number, not the caption.</p> <p>Go Back (browser button) and click on number <i>14</i> next to <i>372.35 Science and technology</i></p>

B2 All Fields search for words and <u>class numbers</u>	
Class number search	<p>Query: <i>computer* and 37*</i></p> <p>Get back to the search screen. In the first text box, type <i>computer*</i> make sure in is All Fields (default),</p> <p>In the second text box, type <i>37*</i> , set in to Dewey number and press [Enter].</p> <p>The results show class numbers not found in the previous search. For example, click on number 6 next to <i>371.33466 Computer graphics--instructional use</i> The word <i>education</i> does not appear there, so B1 did not find it.</p>

B3 Captions Only search for words	
Word search in Captions	<p>Query: <i>computer* and education*</i></p> <p>In the top bar, click on Search.</p> <p>In the first text box, type <i>computer*</i>, set the in to Captions.</p> <p>In the second text box, type <i>education*</i>, set the in to All Fields [Enter]. Examine results.</p> <p>Now go Back to the search screen and set the second in to Captions, [Enter].</p> <p>Note1: Only one class found; that is why you are placed immediately in the Browse screen.</p> <p>Note 2: Captions contain only words. Searching for class numbers would not make sense.</p>

B4 All Fields search for class numbers	
Class number search	<p>Query: 372*</p> <p>In the toolbar on top, click Search.</p> <p>In the first text box, type 372*, make sure in is All Fields (default), make sure the second text box is empty, and press [Enter].</p> <p>Lots of classes are found. Note: C in this display indicates a <i>centered heading</i>.</p> <p>Click 10 next to 268.432 <i>Children</i> to display the full record. Why was this record found? Note: This is not <i>children in general</i> but rather <i>Christian religious education of children</i></p> <p>Back (browser button) to the display of results; page through by List no. (View List).</p> <p>Explore some of the other classes found, such as 649.58 <i>Reading and related activities</i> and the Manual entries at the very end, for example number 189.</p> <p>Note: Unfortunately you have to page through many lists of ten; no way to jump ahead.</p>

C Now complete query F from the Query Forms and, optionally, the query "Helicopters"

List **all** classes (or as many as you can do in a reasonable time) where one should look on the shelves (broad class implies subclasses). Note that this is easier on WebDewey as compared to the printed version because you can search and then copy and paste.

Hint: If you paste into a word processor document, it is best to use
Edit > Paste special > Unformatted text

<p>Query F Canals</p>	<p>Do an "All Fields" search for <i>canal*</i>:</p> <p>Scroll through the entire results list and copy and paste classes relevant to the query into a word processor document. Note: Highlight the class no. and caption, use shortcut key Ctrl-C to copy, Ctrl-V to paste.</p> <p>Did you search for the concept <i>canal (waterway)</i> or simply for the word <i>canal</i> in all its meanings? Clearly you are not searching a concept-based descriptor-find index but a word-based index.</p> <p>Click on no. <i>10</i> next to <i>386.244 Freight services</i> to see its full record. Can you see why it was found? Hint: Scroll down and look at the Relative Index Terms.</p> <p>Do a Captions search for <i>canal*</i>.</p> <p>Look at the difference in results.</p>
<p>Query Helicopters (optional)</p>	<p>Do an All Fields search for <i>helicopter*</i>.</p> <p>In the result list, click on no. <i>63</i> next to <i>87.73352</i> (a built number) to see the full record. Scroll down to see the last Relative Index term, <i>Helicopters - transportation services</i>; it gives the meaning of the built class.</p> <p>Click on the no. next to <i>387.732-387.733 Specific types of aircraft</i> Notice the instructions for building the class number for the classes under it; some of the numbers that can be built are listed in WebDewey.</p>

This ends the exercise. Explore some more on your own or close WebDewey.

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

1. Purpose

1.1 Information system or type of information system in which to be used

Bibliographic information system. Intended for public and school libraries.

1.2 Intended for controlled vocabulary indexing or query term expansion (Ch. 12, Introduction)

1.3 Type of file and search mechanism for which originally designed

Shelving Card catalog / printed index Online system (Now promoted for Web subject directories)

2. Coverage and designation of concepts. Coverage and format of terms

2.1 Concepts: Scope, breadth of coverage. Recency of concepts

Universal — covers all of knowledge. But focus on Western culture, esp. US.

2.2 Concepts: Specificity, depth of coverage. (Section 16.2.2). Coverage at each level of specificity.

Medium specificity. Would need closer analysis by subject area. Geography table quite specific.

2.3 Are all needed facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1)

Some general concepts included in the general tables and the in-schedule tables. Many others not included by themselves but only as components in one or more precombined descriptors. Completeness of explicit and implied facets? Answer would require extensive analysis.

2.4 Nature of notation (if none, state that). (Section 15.5.2) Decimal, highly expressive (with some exceptions).

2.5 Terms: Completeness of coverage (completeness of lead-in vocabulary). Recency of terms

Some lead-in synonyms included in the alphabetical index. How complete? Would need extensive analysis!

2.6 Form of terms: Consistency, adherence to common usage. Terms seem appropriate. Many classes cannot be expressed by a simple term but need a phrase devised by the editor.

3. Terminological and conceptual analysis and conceptual structure.

3.1 Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Fill in 3.1.1 - 3.1.3)

3.1.1 Expression of concepts through elemental concepts (closely related to definition)

For enumerated compound concepts: Sometimes done implicitly in the relative index. For precombined descriptors constructed according to DDC rules: Done by the indexer.

3.1.2 Hierarchical relationships (polyhierarchy) (Shown by arrangement or Broader Term / Narrower Term X-ref)

Monohierarchical. A few additional BT/NT through cross-references. Many hierarchical relationships implied by the relative index (Example: The classes shown under Blind, as seen from the example query formulation).

3.1.3 Associative relationships. (Implied by physical proximity in the arrangement or explicit Related Term X-ref)

Some explicit cross-references

3.2 Quality of definitions, explications, scope notes (correctness, detail, clarity).

Many notes throughout the schedules and in the Manual. Mostly usage notes explaining the difference between classes or instructions on how to form new precombined descriptors. A few definitions

3.3 Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship? Not a problem in a classification like DDC.

4. **Use of precombination in the index language** (concerns both 2 and 3) (14, 15, esp. 15.4)

4.1 To what degree are descriptors precombined?

DDC can be used with a medium to high degree of precombination, depending on how many new precombined descriptors the indexer builds.

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?

Medium degree of enumeration in the schedules, some addl. precombined descriptors in the index.

To what extent can the indexer build additional precombined descriptors?

To a large extent. Libraries differ in their use of this option.

Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to 5) (Section 15.5.2)

Enumerated precombined descriptors have their own independent symbol (which sometimes is constructed using notation components from tables). Combination order is fixed. The components completely determine the place of a precombined descriptor built by the indexer.

5. **Access and display. Format of presentation of the vocabulary**

Consider for each format access/retrieval by concepts versus access/retrieval by terms.

Access can be provided through arrangement in a printed document or through a computer search system.

5.1 **Format of printed document** (Fill in 5.1.1- 5.1.3)

5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

Introduction (v.1), Tables (v.1), Schedules (v.2+3), Relative Index (v.4), Manual (v.5)

Need to go back forth between schedules and manual, otherwise reasonably helpful.

5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)

- through linear arrangement or graphical display (Section 15.5.2)

In the tables and schedules.

- through cross-references (Section 14.1)

In the tables and schedules.

- through descriptor-find index (Section 15.5.1)

The relative index combines the functions of an alphabetical index and a descriptor find index of sorts.

How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).

Usually the sequence of classes makes good sense.

5.1.3 Display of terminological relationships (Synonymous Term)

Terminological relationships are displayed only in the relative index, which gives the lead-in term and points to the appropriate class number.

5.2 **Access through computer system.** Navigation. Format of on-line displays

This would be an analysis of Dewey for Windows. Not required here.

Instructions for using the Dewey Decimal Classification

<p>Indexing</p>	<p>Give one and only one class per document; if another class is a strong contender, list it as an alternate and give reasons for selecting the class you chose. (If there is no other class that would fit the book, leave the Alternate class blank.) For each class give the text as a hierarchical chain, starting with the main class, e.g.</p> <p style="text-align: center;">388.34|232 Ground transportation > Vehicular transportation > Vehicles > Taxicabs</p> <p>Note: The symbol | setting off components of a built number is not part of the “official” Dewey number. Nevertheless, in this assignment you should include the | for your own understanding.</p>
<p>Query formulation</p>	<p>Try to list all classes where one should look for relevant documents on the shelves; if there are more than 7 classes, just give a representative sample (enough to demonstrate that you how to find all classes throughout all the DDC main classes).</p> <p>Note: A broad class implies all the narrower classes; no need to list these narrower classes, they can be readily seen from the schedules.</p> <p>The query formulation is the OR combination of all the classes in your list. (AND combinations are out: for shelving, only one class is assigned; while more than one class could be assigned for a classified catalog, DDC is not designed for combination searching.)</p> <p>You may use the print version or Dewey for Windows for documents A - C and queries D - E. Query F, <i>canals</i> is part of the Dewey for Windows exercise. If you wish, you may try them in the print version as well for comparison.</p>

Examples of queries in DDC**Query topic: *Blind people***

Look under the following Dewey classes:

- 027.663| 081 61 Libraries for persons with disabilities > Persons with impaired vision
(027.663 is given in the Relative Index under blind; this number, built using Table 8, is more specific)
- 305.908| 161 Occupational and miscellaneous groups > Persons with impaired vision
(A number built according to an instruction using Table 7; this number is given in the Relative Index)
- 362.41 Problems of and services to people with physical disabilities >
Persons with impaired vision
- 371.911 Blind and partially sighted students
- 614.599 7 Incidence of . . . diseases > Eye diseases
- Any class built with the following numbers from general tables.
- T1/ -0871 History and description with respect to kinds of persons >
Blind and partially sighted persons
- T7/ -081 61 Persons with impaired vision

Query topic: *Teaching of science at all levels*

- 372.35 Elementary education > Specific elementary school subjects >
Science and technology
- 5xx.x...x|071x...x Any built number where
the first component is a subdivision of
500 *Natural sciences and mathematics* (except 510 *Mathematics* and its
subdivisions)
and the second component is a subdivision of
T1/ -071 *Schools and courses*
(as found in the schedules or as further built by adding geographical area as
instructed)
- Note: The precise form of these class numbers depends further on specific
instructions on how to append standard subdivisions to numbers from the
schedules. Sometimes one must use 00 or even 000 instead of plain 0.

The following pages show

First summary: the ten top-level main classes

Also a comparison of the overall outline of the Dewey Decimal Classification, the Library of Congress Classification, and the Yahoo Classification

Second summary: The 110 classes at the top level and one level below

A sample page from the third summary (for 300 Social sciences)

Sample pages from the classification schedules

Sample pages from the Relative Index (alphabetical index)a

Dewey Decimal Classification

Edition 21

Summaries

Full headings from v. 2 and 3, with small additions from OCLC's Web site

First Summary
The Ten Main Classes

Tables (auxiliary descriptors)

0	Generalities	Computers, information, general reference
100	Philosophy, paranormal phenomena, psychology	
200	Religion	
300	Social sciences	
400	Language	
500	Natural sciences and mathematics	
600	Technology (Applied sciences)	
700	Arts and recreation	Fine and decorative arts
800	Literature (Belles-lettres) and rhetoric	
900	Geography, history, and auxiliary disciplines	

Dewey Decimal	Library of Congress	Yahoo
000 Computers, information, & general reference 000 Computers, Internet, & systems 010 Bibliography 020 Library and information sci. 070 News media	A General works QA Math, incl. computer science Z Bibliography and library science	Computers & Internet Reference News & Media
100 Philosophy & psychology	B-BJ Philosophy. Psychology.	A & H > Humanities > Philosophy
200 Religion	BL-BX Religion	Society and Culture > Religion and Spirituality
300 Social sciences 330 Econ, 380 Commerce 320 Pol. sci., 350 Pub. admin 340 Law 370 Education	H Social sciences HB-HJ Economics J Political science K Law L Education	Social Science Society & Culture Business & Economy Government Government > Law Education
400 Language	P-PM Language	Social Science > Linguistics and Human Languages
500 Natural sciences & math.	Q Science	Science (parts of)
600 Technology (Applied sciences) 610 Medical sciences and medicine 630 Agriculture Most of 600	R Medicine S Agriculture T Technology	Health Science > Agriculture Science (parts of)
700 Arts & recreation	M Music and books on music N Fine arts GV Recreation, leisure	Arts & Humanities Entertainment Recreation & Sports
800 Literature & rhetoric	PN-PZ Literature	Arts & Humanities > Humanities > Literature
900 Geography & history	C-F History, G Geography	A & H > Humanities > History Regional
	U Military science V Naval science	Government > Military

Dewey, Library of Congress and Yahoo classification compared

Note: Comparison is easier at lower levels of the hierarchy since different schemes may agree on specific narrower fields but group them differently at the top level of the hierarchy

Second Summary

The Hundred Divisions

Tables

Table 1.	Standard Subdivisions (p. 3)
Table 2.	Geographical Areas, Historical Periods, Persons (p. 34)
Table 3.	Subdivisions f. the Arts, for Individual Literatures, for Specific Literary Forms (p. 405)
Table 4.	Subdivisions of Individual Languages and Language Families (p. 437)
Table 5.	Racial, Ethnic, National Groups (p. 444)
Table 6.	Languages (p. 464)
Table 7.	Persons (p. 490).

000	Generalities	500	Natural sciences & mathematics
010	Bibliography	510	Mathematics
020	Library & information sciences	520	Astronomy & allied sciences
030	General encyclopedic works	530	Physics
040		540	Chemistry & allied sciences
050	General serial publications & their indexes	550	Earth sciences
060	General organizations & museology	560	Paleontology Paleozoology
070	News media, journalism, publishing	570	Life sciences Biology
080	General collections	580	Plants
090	Manuscripts & rare books	590	Animals
100	Philosophy and Psychology	600	Technology (Applied sciences)
110	Metaphysics	601-9	General technology
120	Epistemology, causation, humankind	610	Medical sciences Medicine
130	Paranormal phenomena	620	Engineering & allied operations
140	Specific philosophical schools	630	Agriculture & related technologies
150	Psychology	640	Home economics & family living
160	Logic	650	Management & auxiliary services
170	Ethics (moral philosophy)	660	Chemical engineering
180	Ancient, medieval, Oriental philosophy	670	Manufacturing
190	Modern Western philosophy	680	Manufacture for specific uses
		690	Buildings
200	Religion	700	The Arts Fine and decorative arts
210	Philosophy & theory of religion	710	Civic & landscape art
220	Bible	720	Architecture
230	Christianity Christian theology	730	Plastic arts Sculpture
240	Christian moral & devotional theology	740	Drawing & decorative arts
250	Christian orders & local church	750	Painting & paintings
260	Social & ecclesiastical theology	760	Graphic arts Printmaking & prints
270	History of Christianity & Christian church	770	Photography & photographs
280	Christian denominations & sects	780	Music
290	Comparative religion & other religions	790	Recreational & performing arts
300	Social sciences	800	Literature & rhetoric
301	Sociology and anthropology	810	American literature in English
310	Collections of general statistics	820	English & Old English literatures
320	Political science	830	Literatures of Germanic languages
330	Economics	840	Literatures of Romance languages
340	Law	850	Italian, Romanian, Rhaeto-Romanic
350	Public administration & military science	860	Spanish & Portuguese literatures
360	Social problems & services; association	870	Italic literatures Latin
370	Education	880	Hellenic literatures Classical Greek
380	Commerce, communications, transportation	890	Literatures of other languages
390	Customs, etiquette, folklore		
400	Language	900	Geography & history
410	Linguistics	909	World History
420	English & Old English	910	Geography & travel
430	Germanic languages German	920	Biography, genealogy, insignia
440	Romance languages French	930	History of the ancient world to ca. 499
450	Italian, Romanian, Rhaeto-Romanic	940	General history of Europe
460	Spanish & Portuguese languages	950	General history of Asia Far East
470	Italic languages Latin	960	General history of Africa
480	Hellenic languages Classical Greek	970	General history of North America
490	Other languages	980	General history of South America
		990	General history of other areas

DDC sample pages ending even

Assignment 13.2**Assigned:** *Apr. 13***Due:** *Apr. 20***ERIC Thesaurus**

Objectives	Inherited from Assignment 13
Deliverables	Inherited from Assignment 13
Tasks	Complete the worksheet (use attached sample pages for this task). For indexing and query formulation you will need the full thesaurus.
Materials	Sample pages for the ERIC thesaurus are attached. Full thesaurus available in XXX (in Lockwood?). (14th ed. is the newest, print version seems no longer to be updated, sample pages are from an earlier edition.) You can search ERIC online at http://www.eric.ed.gov
Time	3 hours

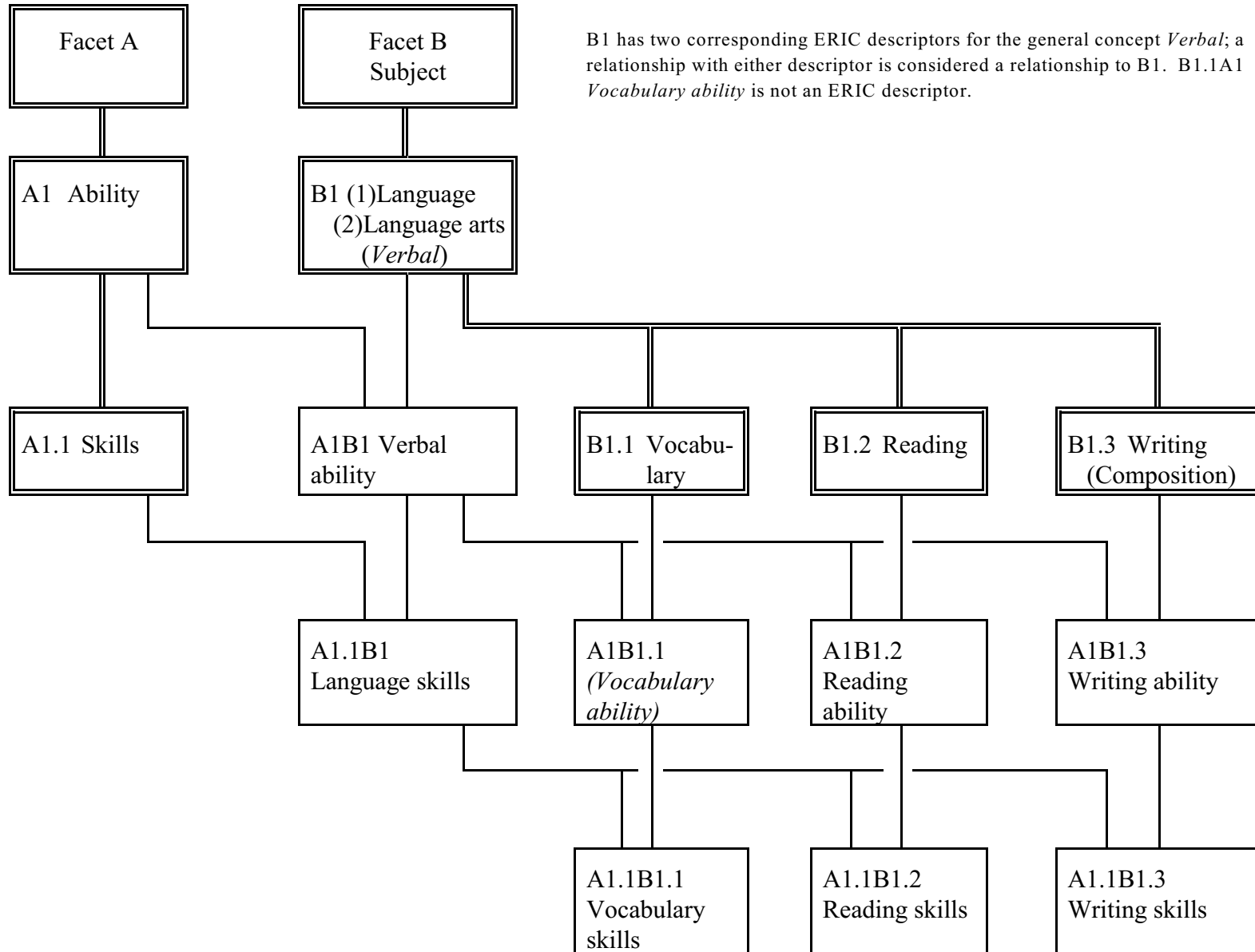
Name:

ERIC worksheet

Objectives	Understand the application of facet analysis to the analysis of concepts and concept relationships in a thesaurus.
Task background	<p>On the next page is an expanded version of the answer sheet for Assignment 12.3a, a hierarchy in graphical representation. The terms in the boxes are actual ERIC descriptors unless indicated otherwise; these descriptors make up the study set for this worksheet. On pages 310 - 311 (or thereabouts) is an excerpt from the ERIC Thesaurus that shows these descriptors with their cross-references. In the long lists of cross-references, descriptors from the study set are bold so they can be located easily.</p> <p>Note. Concept B1 <i>Verbal</i> in the diagram conflates two ERIC descriptors that address basically the same concept:</p> <p style="text-align: center;">(1) <i>Language</i> and (2) <i>Language arts</i>.</p> <p>A relationship to or from either one of these is considered a relationship to or from B1.</p> <p>A number of other ERIC descriptors that fall into this “conceptual grouping” have not been included in the example to keep it simple. Some of these concepts are <i>Language proficiency</i>, <i>Linguistic competence</i>, <i>Communicative competence (languages)</i>.</p>
Tasks	<ol style="list-style-type: none">1 For each hierarchical relationship shown in the graph, find out whether it is given in the ERIC Thesaurus, either as BT/NT or as RT, and label the line in the graph accordingly. If a hierarchical relationship does not appear in the ERIC Thesaurus at all, label the line NO.2 Write a brief essay (max. ½ page) on how the ERIC Thesaurus handles these relationships.
Result	<ol style="list-style-type: none">1 The labeled hierarchy graph.2 A brief essay on relationships in the ERIC Thesaurus

Analysis of ERIC descriptors and relationships using facets

B1 *Verbal* has two corresponding ERIC descriptors; a relationship with either descriptor is considered a relationship to B1. B1.1A1 *Vocabulary ability* is not an ERIC descriptor.



B1 has two corresponding ERIC descriptors for the general concept *Verbal*; a relationship with either descriptor is considered a relationship to B1. B1.1A1 *Vocabulary ability* is not an ERIC descriptor.

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

1.	Purpose
1.1	Information system or type of information system in which to be used
1.2	Intended for controlled vocabulary indexing <input type="checkbox"/> or query term expansion <input type="checkbox"/> (Ch. 12, Introduction)
1.3	Type of file and search mechanism for which originally designed Shelving <input type="checkbox"/> Card catalog / printed index <input type="checkbox"/> Online system <input type="checkbox"/>
2.	Coverage and designation of concepts. Coverage and format of terms
2.1	Concepts: Scope , breadth of coverage. Recency of concepts
2.2	Concepts: Specificity , depth of coverage (Section 16.2.2). Coverage at each level of specificity.
2.3	Are all necessary facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1)
2.4	Nature of notation (if none, state that) (Section 15.5.2)
2.5	Terms: Completeness of coverage of terminology (completeness of lead-in vocabulary). Recency of terms
2.6	Form of terms: Consistency, adherence to common usage.
3.	Terminological and conceptual analysis and conceptual structure.
3.1	Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Fill in 3.1.1 - 3.1.3)
3.1.1	Expression of concepts through elemental concepts (closely related to definition)
3.1.2	Hierarchical relationships (polyhierarchy). (Shown by arrangement or Broader Term / Narrower Term X-ref)
3.1.3	Associative relationships (Implied by physical proximity in the arrangement or explicit Related Term X-ref)
3.2	Quality of definitions , explications, scope notes (correctness, detail, clarity).
3.3	Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship?

4. **Use of precombination in the index language** (concerns both 2 and 3) (Ch. 14, 15, esp. 15.4)

4.1 To what degree are the final descriptors assigned to documents, whether enumerated or built by the indexer, precombined?

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?

To what extent can the indexer build additional precombined descriptors?

Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to the arrangement of a classification) (Section 15.5.2)

5. **Access and display. Format of presentation of the vocabulary**

For each format consider access/retrieval by concepts versus access/retrieval by terms.

Access can be provided through arrangement in a printed document or through a computer search system.

5.1 **Format of printed document** (Fill in 5.1.1- 5.1.3)

5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)

- through linear arrangement or graphical display (Section 15.5.2)

- through cross-references (Section 14.1)

- through descriptor-find index (Section 15.5.1)

How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).

5.1.3 Display of terminological relationships (Synonymous Term)

5.2 **Access through computer system.** Navigation. Format of on-line displays

Instructions for using the ERIC Thesaurus

<p>Indexing with ERIC</p>	<p>Give all appropriate ERIC descriptors. According to common practice an ERIC descriptor can represent a topic treated in part of the document, but still somewhat extensively. 15 - 20 descriptors for a document is not uncommon.</p>
<p>Query formulation with ERIC</p>	<p>Try to list all categories where one should look for relevant documents (if more than 10, give representative examples); the query formulation might consist of just one concept or of two or more concepts ANDed. In ERIC, a concept may need to be represented by an OR combination of descriptors. Remember in particular that in ERIC a hierarchically expanded search requires ORing a descriptor with all its narrower descriptors. Do the best you can do in a reasonable time.</p>

Example of query formulation with the ERIC Thesaurus

<p>Query topic: <i>Teaching of science at all levels</i> OR combination of</p>	
<p>Science education Science education history Science instruction Science curriculum General science Science programs Science activities Science projects Science course improvement projects Science process skills</p>	<p>Science tests Elementary science Secondary school science College science Summer science programs Science teachers Science teaching centers Aerospace education Marine education Environmental education</p>
<p>If indexing is done properly, this should find most everything (the list could be made more complete). But if an indexer has a document <i>The physics curriculum</i> and assigns simply <i>Physics</i> and <i>Curriculum</i> (instead of the correct <i>Science curriculum</i>), we are out of luck. We could compensate for such indexing errors by running a second search as follows:</p> <p style="padding-left: 40px;">(OR combination of all <i>science</i> descriptors) AND (OR combination of all <i>curriculum</i> and <i>teaching methods</i> descriptors)</p> <p>To find all science descriptors, we would start from <i>Natural sciences</i> and follow several steps of cross-references; same principle for <i>curriculum</i>. This second search would add a few relevant and many irrelevant documents.</p>	

Excerpts from the ERIC Thesaurus 13th ed. 1995

You can search the ERIC thesaurus on the web under <http://www.eric.ed.gov>

ABILITY

SN The degree of actual power present in an organism or system to perform a given physical or mental act (note: use a more specific term if possible)

NT Academic ability
Cognitive ability
Competence
Language proficiency
Leadership
Nonverbal ability
Skills
Spatial ability
Verbal ability

RT Ability grouping
Ability identification
Achievement
Aptitude
Aspiration
Difficulty level
Disabilities
Gifted
Performance
Productivity
Qualifications
Readiness
Talent

LANGUAGE

SN Systematic means of communicating ideas and feelings through the use of signs, gestures, words, and/or auditory symbols (note: for natural languages and language families, see "languages")

NT Artificial languages
Child language
Figurative language
Interlanguage
Language of instruction
Language universals
Languages for special purposes
Official languages
Oral language
Programming languages
Second languages
Sign language
Symbolic language
Tone languages
Uncommonly taught languages
Unwritten languages
Urban language
Written language

RT Artificial speech
Code switching (language)
Dialects
Language acquisition
Language arts
Language attitudes
Language enrichment
Language impairments

Language patterns
Language planning
Language processing
Language proficiency
Language research
Language rhythm
Language role
Language skill attrition
Language skills
Language styles
Language tests
Language universals
Language usage
Language variation
Languages
Linguistics
Onomastics
Semiotics
Social dialects
Speech
Speech communication
Verbal communication
Word frequency
Word order

LANGUAGE ARTS

NT Debate
Handwriting
Listening
Outlining (discourse)
Reading
Rhetoric
Speech
Spelling
Story telling
Writing (composition)

RT Child language
Communication (thought transfer)
Comprehension
Discourse modes
Dramatics
Editing
English curriculum
Journalism education
Language
Language experience approach
Language skills
Lexicology
Literature
Reading writing relationship
Self expression
Speech communication
Speech curriculum
Translation
Verbal ability
Verbal communication
Vocabulary
Whole language approach

LANGUAGE SKILLS

BT **Skills**

NT Audiolingual skills
Communicative competence (languages)
Reading skills

Vocabulary skills

Writing skills

RT Basic skills
Cloze procedure
Communication skills
Daily living skills
Dictation
English (second language)
Error analysis (language)
Expressive language
Inferences
Interpreters
Interpretive skills
Language
Language acquisition
Language aptitude
Language arts
Language dominance
Language fluency
Language processing
Language proficiency
Language skill attrition
Language tests
Languages
Linguistic competence
Linguistic performance
Listening comprehension
Metalinguistics
Monolingualism
Psycholinguistics
Receptive language
Second language learning
Sentence combining
Thinking skills
Translation
Verbal ability
Whole language approach
Word study skills

READING

BT **Language arts**
Literacy

NT Basal reading
Beginning reading
Content area reading
Corrective reading
Critical reading
Directed reading activity
Early reading
Functional reading
Independent reading
Individualized reading
Music reading
Oral reading
Reading aloud to others
Recreational reading
Remedial reading
Silent reading
Speed reading
Story reading
Sustained silent reading

RT Advance organizers
Bibliotherapy
Braille
Cloze procedure
Context clues
Decoding (reading)

Diacritical marking
Informal reading inventories
Initial teaching alphabet
Inner speech (subvocal)
Language processing
Miscue analysis
Pattern recognition
Phoneme grapheme correspondence
Proofreading
Readability
Readability formulas
Reader response
Reader text relationship
Reading ability
Reading achievement
Reading assignments
Reading attitudes
Reading centers
Reading comprehension
Reading consultants
Reading diagnosis
Reading difficulties
Reading failure
Reading games
Reading habits
Reading improvement
Reading instruction
Reading interests
Reading material selection
Reading materials
Reading motivation
Reading processes
Reading programs
Reading rate
Reading readiness
Reading readiness tests
Reading research
Reading skills
Reading strategies
Reading teachers
Reading tests
Reading writing relationship
Tachistoscopes
Verbal communication
Vocabulary
Writing (composition)

READING ABILITY

BT **Verbal ability**

NT **Reading skills**

RT **Reading**
Reading achievement
Reading attitudes
Reading difficulties
Reading readiness

READING SKILLS

BT **Language skills**
Reading ability

NT Reading comprehension
Reading rate

RT Adult literacy
Basic skills
Cloze procedure
Content area reading
Decoding (reading)

Eye voice span
 Functional literacy
 Functional reading
 Inferences
 Literacy
 Literacy education
 Minimum competencies
 Phonics
 Reader response
Reading
 Reading centers
 Reading habits
 Reading improvement
 Reading instruction
 Reading processes
 Reading strategies
 Reading tests
 Thinking skills
Vocabulary skills
 Word recognition
 Word study skills

SKILLS

BT **Ability**
 NT Agricultural skills
 Basic skills
 Business skills
 Communication skills
 Daily living skills
 Decision making skills
 Home economics skills
 Homemaking skills
 Information skills
 Interpretive skills
 Job skills
Language skills
 Locational skills (social studies)
 Map skills
 Mathematics skills
 Mechanical skills
 Minimum competencies
 Parenting skills
 Psychomotor skills
 Research skills
 Salesmanship
 Science process skills
 Study skills
 Teaching skills
 Thinking skills
 Visual literacy
 RT Competence
 Difficulty level
 Familiarity
 Interpersonal competence
 Mastery learning
 Mastery tests
 National competency tests
 Process education
 Qualifications
 Skill analysis
 Skill centers
 Skill development

VERBAL ABILITY

BT **Ability**
 NT **Reading ability**
Writing ability
 RT Academic ability
 Basic skills
 Communication skills

Language aptitude
Language arts
Language skills
 Linguistic competence
 Linguistic input
 Linguistic performance
 Nonverbal ability
 Speech skills
 Verbal development
 Verbal learning
 Verbal operant conditioning
 Verbal tests

VOCABULARY

NT Aviation vocabulary
 Banking vocabulary
 Basic vocabulary
 Chemical nomenclature
 International trade vocabulary
 Jargon
 Keywords
 Kinship terminology
 Mathematical vocabulary
 Medical vocabulary
 Sight vocabulary
 Subject index terms
 Word lists
 RT Adjectives
 Adverbs
 Code switching (language)
 Definitions
 Glossaries
 Glottochronology
Language arts
 Lexicology
 Linguistic borrowing
 Multilingual materials
 Nouns
Reading
 Thesauri
 Verbs
 Vocabulary development
Vocabulary skills
 Word frequency

VOCABULARY SKILLS

BT **Language skills**
 RT Basic skills
 Basic vocabulary
 Context clues
Reading skills
Vocabulary

WRITING (COMPOSITION)

BT **Language arts**
 Literacy
 NT Abstracting
 Basic writing
 Childrens writing
 Content area writing
 Creative writing
 Descriptive writing
 Expository writing
 Free writing
 Freshman composition
 Journal writing
 Local color writing
 News writing
 Notetaking
 Paragraph composition
 Parallelism (literary)

Playwriting
 Proposal writing
 Technical writing
 Writing for publication
 RT Audience analysis
 Coherence
 Cohesion (written composition)
 Discourse modes
 Handwriting
 Language processing
 Letters (correspondence)
 Literary devices
 Literary styles
 Narration
 Outlining (discourse)
 Paragraphs
 Persuasive discourse
 Plagiarism
 Poetry
 Prewriting
 Prose
Reading
 Reading writing relationship
 Revision (written composition)
 Rhetoric
 Rhetorical invention
 Sentences
 Spelling
 Story grammar
 Student writing models
 Verbal communication
Writing ability
 Writing achievement
 Writing apprehension
 Writing assignments
 Writing attitudes
 Writing difficulties
 Writing evaluation
 Writing exercises
 Writing improvement
 Writing instruction
 Writing laboratories
 Writing processes
 Writing readiness
 Writing research
Writing skills
 Writing strategies
 Writing teachers
 Writing tests
 Writing workshops
 Written language

WRITING ABILITY

BT **Verbal ability**
 NT **Writing skills**
 RT Handwriting
Writing (composition)
 Writing achievement
 Writing attitudes
 Writing difficulties
 Writing readiness

WRITING SKILLS

BT **Language skills**
Writing ability
 RT Adult literacy
 Audience awareness
 Basic skills
 Basic writing

Capitalization (alphabetic)
 Childrens writing
 Cohesion (written composition)
 Content area writing
 Essay tests
 Functional literacy
 Grammar
 Handwriting
 Language styles
 Language tests
 Literacy
 Literacy education
 Minimum competencies
 Notetaking
 Outlining (discourse)
 Paragraph composition
 Parallelism (literary)
 Prewriting
 Proofreading
 Punctuation
 Revision (written composition)
 Rhetorical invention
 Sentence combining
 Spelling
 Story grammar
 Student journals
 Student writing models
 Text structure
 Thinking skills
Writing (composition)
 Writing evaluation
 Writing exercises
 Writing improvement
 Writing instruction
 Writing laboratories
 Writing processes
 Writing strategies
 Writing tests
 Writing workshops

Sample pages from ERIC

Ending on even page

Assignment 13.3

Assigned: Apr. 13

Library of Congress/Sears Subject Headings

Due: Apr. 20

Objectives	Inherited from Assignment 13
Deliverables	The filled-in document forms and query forms (worksheet is just a reading) The filled-in <i>Outline for the analysis of Knowledge Organization Systems</i>
Tasks	Inherited from Assignment 13 Complete the worksheet for LCSH after indexing and query formulation with LCSH.
Materials	Some sample pages dealing with <i>Education</i> are included. Many sample pages for <i>Transportation</i> included with Ass. 10. Explorations in subject access. Library of Congress Subject Headings. 27th ed. 2004, 4 large red volumes. In McKeldin Gov Docs. Can use earlier editions back to 1990. Sears List of Subject Headings. 18th ed., 2004. Much smaller and simpler than LCSH. If you are interested in school media centers or public libraries, you can use SSH instead of LCSH for indexing and query formulation. We have already examined LCSH in Small Groups 1, Explorations in Subject Access. Classification Web (part of Cataloger's Desktop, Intro. in Ass. 13.4 LCC) provides access to LCC and LCSH. Or search for LCSH in OCLC Connexions (see Ass. 13.1, WebDewey). In the top navigation bar, click on Authorities; you are on your own.
Readings	Beforehand: Chan, Cataloging and classification, Chapter 8 on LCSH Needham, Ch. 10, The alphabetic subject catalog, p. 199-223 (optional) For further study Chan, Lois Mai 1995 Library of Congress Subject Headings. principles of structure and application. 3. ed. Englewood, CO: Libraries Unlimited; 1995. UB Libraries Lockwood location Perreault, Jean M. 1979 Library of Congress Subject Headings: A New Manual. International Classification 1979 November; 6(3):158-169. Extensive review of an earlier version of Chan's book. Gives a good feel for some of the problems in LCSH.
Time	5 hours

Worksheet for LCSH: Comparison example (LCSH and DDC or LCC)

This worksheet is only a reading; just read and understand

The following example will give you a sense of the nature of the relationship (or lack of it) between the subject headings and classification schemes.

In the example, I searched WorldCat (see Assignment 3) for the sample query *Teaching of science at all levels* and looked at the call numbers for relevant documents found to see whether I could find LC classes beyond the ones found by examining the LC classification.

Here is a list of class numbers found by examining LC classification for this topic.

Query topic: *Teaching of science at all levels*

LB1532 Primary education > Branches of study > Special > Nature study. Science

LB1585-1585.7 El. or public school educ. > Special branches > Nature study. Science

Q160-161.2 Science (general) > Textbooks

Q181.A1-183.4 Science (general) > Study and teaching

Q190-197 Science (general) > Audiovisual aids in science teaching

QB61-62.7 Astronomy > Study and teaching. Research

QC20.8-20.82 Physics > Mathematical physics > Study and teaching. Research

QC23 Physics > **Elementary** textbooks

QC30-48 Physics > Study and teaching. Research

etc.: Under every field of science (and some of their subfields), there are subdivisions such as *Textbooks* and *Study and teaching. Research*

Since this covers only general science and physics, I first searched for

(su:Science OR su:Physics OR su:Astronomy)
AND su:study AND su:teaching [to get the subheading *study and teaching*]

Relevant documents found were assigned the following class numbers (new ones are **bold**):

- LB 1065** Educational psychology > Learning > Interest. Attention. Motivation
LB 1585
Q 161.2
Q 181 (3x)
Q 182.3 (note: book about elementary level!) (2x)
Q 183.4
QA 76.88 Mathematics > Instruments and machines > Calculating machines > Electronic computers. Computer science > Supercomputers. High performance computing.
QB 501.5 Astronomy > Descr. astronomy /Solar system > Study and teaching. Research
QH 541.14 Biology (General) > Ecology > Juvenile works (note: book is on primary ed.)
QP 251.5 Physiology > Urinary and reproductive organs > Reproduction. Physiology of sex > Juvenile works (note: book is on primary level)

Then, to find more class numbers, I searched under

(su:Chemistry OR su:Biology OR su:Geology)
AND su:study AND su:teaching

This turns up many more class numbers, all new:

- GC31.3** Oceanography > Study and teaching > Audiovisual aids
LD6241.7 1999 Individual institutions > U S > Universities. Colleges > Wright State Univ., Dayton, OH
QD31.2 Chemistry > General works, treatises, and advanced textbooks > 1970 -
QD40 Chemistry > Study and teaching. Research > General works
QD43 Chemistry > Study and teaching. Research > Experiments
QH308.7 (2x) Biology > Textbooks > **Elementary** > 1970 - [elementary educ. by subject usually in LB]
QH315 (2x) Biology > Study and teaching. Research > General works
QH316.4 Biology > Study and teaching. Research > Activity programs
QH362 Biology > Evolution > Study and teaching. Research
QH541.15.L35 Biology > Ecology > Special aspects of the subject as a whole > Landscape ecology

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

1.	<p>Purpose</p> <p>1.1 Information system or type of information system in which to be used</p> <p>1.2 Intended for controlled vocabulary indexing <input type="checkbox"/> or query term expansion <input type="checkbox"/> (Ch. 12, Introduction)</p> <p>1.3 Type of file and search mechanism for which originally designed Shelving <input type="checkbox"/> Card catalog / printed index <input type="checkbox"/> Online system <input type="checkbox"/></p>
2.	<p>Coverage and designation of concepts. Coverage and format of terms</p> <p>2.1 Concepts: Scope, breadth of coverage. Recency of concepts</p> <p>2.2 Concepts: Specificity, depth of coverage (Section 16.2.2). Coverage at each level of specificity.</p> <p>2.3 Are all necessary facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1)</p> <p>2.4 Nature of notation (if none, state that) (Section 15.5.2)</p> <p>2.5 Terms: Completeness of coverage of terminology (completeness of lead-in vocabulary). Recency of terms</p> <p>2.6 Form of terms: Consistency, adherence to common usage.</p>
3.	<p>Terminological and conceptual analysis and conceptual structure.</p> <p>3.1 Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Fill in 3.1.1 - 3.1.3)</p> <p>3.1.1 Expression of concepts through elemental concepts (closely related to definition)</p> <p>3.1.2 Hierarchical relationships (polyhierarchy). (Shown by arrangement or Broader Term / Narrower Term X-ref)</p> <p>3.1.3 Associative relationships (Implied by physical proximity in the arrangement or explicit Related Term X-ref)</p> <p>3.2 Quality of definitions, explications, scope notes (correctness, detail, clarity).</p> <p>3.3 Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship?</p>

4. **Use of precombination in the index language** (concerns both 2 and 3) (Ch. 14, 15, esp. 15.4)

4.1 To what degree are the final descriptors assigned to documents, whether enumerated or built by the indexer, precombined?

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?

To what extent can the indexer build additional precombined descriptors?

Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to the arrangement of a classification) (Section 15.5.2)

5. **Access and display. Format of presentation of the vocabulary**

For each format consider access/retrieval by concepts versus access/retrieval by terms.

Access can be provided through arrangement in a printed document or through a computer search system.

5.1 **Format of printed document** (Fill in 5.1.1- 5.1.3)

5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)

- through linear arrangement or graphical display (Section 15.5.2)

- through cross-references (Section 14.1)

- through descriptor-find index (Section 15.5.1)

How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).

5.1.3 Display of terminological relationships (Synonymous Term)

5.2 **Access through computer system.** Navigation. Format of on-line displays

Instructions for using Library of Congress Subject Headings

<p>Indexing with LCSH</p>	<p>Give all appropriate subject headings. If applicable, list other candidate headings and give reasons why you chose the headings you did. According to general practice, a subject heading should represent the content or relevance of the document as a whole. The number of subject headings assigned to a document varies between 1 and 5, with 2 or 3 being most common.</p>
<p>Query formulation with LCSH</p>	<p>Try to list all subject headings where one should look for relevant documents; if there are more than 7 subject headings, list a representative sample (enough to demonstrate that you know how to find all applicable subject headings).</p> <p>Note: Listing a main heading implies all the subordinate main heading - subheading combinations (which can be readily seen from the subject heading list). If you give just a sample of subject headings to be used, prefer headings from different sections of the alphabet. For example, in the <i>canal</i> search, give just one heading starting with <i>canal</i>, make a note that there are many headings starting with <i>canal</i>, and find relevant headings elsewhere.</p> <p>The query formulation is the OR combination of all the headings you list. (AND combinations are out: while multiple subject headings can be assigned, LCSH is not designed for combination searching, and many online catalogs do not allow for it.)</p> <p>You may use the print version or the electronic version for documents A-C and queries D-E. Query F, <i>canals</i>, is part of the Assignment 13.4LCC exercise on Classification Web. You may try them in the print version as well for comparison.</p>

Example of query formulation with LCSH

Query topic: <i>Teaching of science at all levels</i>	
Query in online catalog	<p>In an online catalog in which one can search for phrases in subject headings and use Boolean AND, the following query formulation would find a large portion of the relevant documents:</p> <p>(Science OR Nature study OR Physics OR Chemistry OR Biology OR ...) AND Study and teaching</p> <p>One might further look under</p> <p>Nature study — Activity programs Science students Science teachers</p> <p>For a list of illustrative full headings, see the next box</p>
A sampling of illustrative LC subject headings	<p>Science – Study and teaching Science – Study and teaching – Activity programs Science – Study and teaching – Aids and devices Science – Study and teaching – Supervision Science – Study and teaching (Early childhood) Science – Study and teaching (Elementary) Science – Study and teaching (Graduate) Science – Study and teaching (Higher) Science – Study and teaching (Internship) Science – Study and teaching (Preschool) Science – Study and teaching (Primary) Science – Study and teaching (Secondary) Science – Study and teaching (Undergraduate)</p> <p>This pattern of subdivision is used with branches and sub-branches of science, for example</p> <p>Biology – Study and teaching plus many more possible Chemistry – Study and teaching Nature study – Study and teaching Physics – Study and teaching</p> <p>One needs to compile a complete list of all branches and sub-branches of science. Following several steps of NT cross-reference starting from <i>Science</i> helps with this.</p>

[Sample pages from LCSH here](#)

Sample pages end on even page

Assignment 13.4 Yahoo**Assigned: Apr. 20****Due: May 4****Yahoo classification**

Objectives	Inherited from Assignment 13
Deliverables	Inherited from Assignment 13
Tasks	Inherited from Assignment 13 The Yahoo worksheet starts on the back of this page.
Materials	<p>0 The Yahoo classification itself as available on the Yahoo Web site Use http://dir.yahoo.com/ as a shortcut to the Yahoo directory Or www.yahoo.com, click on <u>More Yahoo! Services</u>, then on Directory Plan to be online to Yahoo while doing the worksheet, even though some of it needs just the attached materials. You need the Yahoo Web site for indexing and query formulation.</p> <p>You can prepare your worksheet answers on a word processor, which gives you the opportunity to copy and paste examples from Yahoo.</p> <p>Figures included in print.</p> <p>1 Yahoo Home (first summary): top level classes (called <i>categories</i> in Yahoo) in the original Yahoo alphabetical arrangement and in a revised meaningful arrangement.</p> <p>2 First-level breakdown of <i>Health</i> in the original Yahoo alphabetical arrangement and in a revised meaningful arrangement.</p> <p>3 Second summary (first two levels of the hierarchy).</p> <p>4 Excerpts from the Yahoo classification designed to illustrate the structure of the classification, particularly its treatment of <i>Education</i> and <i>Transportation</i>.</p>
Time	Time: 6 hours (first half - 3.5 hours; second half - 2.5 hours)

Yahoo Worksheet

Name:

Starts on next page

60 min.	1. General layout of the classification. Formal structure							
General layout	<ul style="list-style-type: none"> • Look at the top level on the Yahoo Directory home page and click down to <i>Education</i>. (http://dir.yahoo.com/) • Look at Figs. 1 and 2 and skim Fig. 3. the Yahoo classific. second summary. • Skim through Figure 4, the excerpt from the Yahoo classification; note the many places in which <i>education</i> and <i>transportation</i> concepts appear. 							
Context dependency of terms	<p>In Yahoo, as in the Library of Congress Classification, the meaning of a category (class) is always defined by its total context. Thus in</p> <p style="margin-left: 40px;">Education</p> <p style="margin-left: 80px;">. K-12</p> <p style="margin-left: 120px;">. . Academic Competitions</p> <p style="margin-left: 160px;">. . . Debate</p> <p style="margin-left: 200px;">. . . . Clubs, Teams, and Societies</p> <p>The last category means</p> <p style="margin-left: 40px;"><i>Clubs, Teams, and Societies that engage in Debates staged as Academic Competitions for students in the K-12 level of Education</i></p> <p>On the top of the screen, the active category is shown with its full caption:</p> <p style="margin-left: 40px;">Directory > Education > K-12 > Academic Competitions > Debate > Clubs, Teams, and Societies</p>							
Precombination	What is the degree of precombination in Yahoo?							
Search for categories	<p>A search for one or more words in Yahoo returns</p> <p>(1) categories whose caption contains the word(s) and</p> <p>(2) individual sites.</p> <p>So Yahoo functions as a kind of descriptor find index. But the search is based on the words in the full caption; while these words often reflect the conceptual components of the category, there are many cases where they do so only incompletely. See the facing page for an example. A search for <i>vehicles</i> does not <i>ships</i> or <i>aircraft</i>.</p> <p>Some good searches to try to explore the structure of the Yahoo classification. You can restrict your search to a category.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">CDs, Records, and Tapes</td> <td style="padding: 5px;">Mexican Americans</td> </tr> <tr> <td style="padding: 5px;">Transportation</td> <td style="padding: 5px;">Bridge (a homonym)</td> </tr> <tr> <td style="padding: 5px;">Teaching and Learning Aids</td> <td style="padding: 5px;">Humor</td> </tr> </table>		CDs, Records, and Tapes	Mexican Americans	Transportation	Bridge (a homonym)	Teaching and Learning Aids	Humor
CDs, Records, and Tapes	Mexican Americans							
Transportation	Bridge (a homonym)							
Teaching and Learning Aids	Humor							

Example: Search for categories (descriptor find index): Words vs concepts

<p>Search 1: law education Canada (implied AND)</p> <p>Yahoo! Category Matches (1 - 4 of 4)</p> <p>Regional > Countries > <u>Canada</u> > Provinces and Territories > Saskatchewan > Cities > Saskatoon > Education > College and University > University of Saskatchewan > Departments and Programs > College of Law [Note: <i>College</i> rather than <i>School</i>]</p> <p>Regional > Countries > <u>Canada</u> > Provinces and Territories > Ontario > Counties and Regions > Frontenac > Cities > Kingston > Education > College and University > Queen's University > Departments and Programs > School of Law</p> <p>Regional > Countries > <u>Canada</u> > Provinces and Territories > British Columbia > Counties and Regions > Capital > Cities > Victoria > Education > College and University > University of Victoria > Departments and Programs > Law [Note: Simply a <i>department</i>]</p> <p>Regional > Countries > <u>Canada</u> > Provinces and Territories > Alberta > Counties and Districts > Edmonton > Cities > Edmonton > Education > College and University > University of Alberta > Departments and Programs > Law [Note: Simply a <i>department</i>]</p>	<p>Search 2: law school Canada</p> <p>Yahoo! Category Matches (1 - 2 of 2)</p> <p>Regional > Countries > <u>Canada</u> > Provinces and Territories > Ontario > Counties and Regions > Frontenac > Cities > Kingston > Education > College and University > Queen's University > Departments and Programs > School of Law</p> <p>Regional > Countries > <u>Canada</u> > Government > Law > Law Schools</p>
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In the Yahoo categories, all Search 1 retrievals happen to be also relevant for Search 2. (There could be one or more categories on *law education in Canada* generally, but there are none.). All Search 2 retrievals are by definition relevant for Search 1.

When running the same searches with *US*, Search 1 finds 62 categories as follows

- 44 have both *law* and *school* and are thus also found by Search 2
- 15 have *law* and *college* (These are relevant for Search 2 but not found by it)
- 3 have *law* and some other term, such as *center*

Search 2 finds 44 categories; they all happen to have *education*, and thus were found in Search 1 as well.

Searching for *law school* without restrictions would find categories not found by *law education* (such as Directory > Government > Law > Law Schools; this category has under it categories that say *College of Law*) and vice versa (such as Directory > Government > Law > Continuing Legal Education).

Note: Searching for *United States* finds no categories; you need to search for *US*.

1. General layout of the classification. Formal structure. Continued	
The Yahoo “multi-tree”	<p>As you know from Chapters 14 and 15, a compound concept fits in many places in a hierarchy. Put differently, in the Yahoo subject directory, a precombined category should be reachable thorough multiple paths down. How does Yahoo handle this problem? Probe the following example:</p> <p>Click down to</p> <p style="padding-left: 40px;">Directory > Education > K-12 Schools</p> <p style="padding-left: 40px;">Click on Christian@</p> <p>Try Directory > Education > K-12 > By Region > Countries > France > Cities</p> <p>Probe some on your own</p> <p>Summarize your observations. What does the @ mean?</p> <p>► Answer A</p>
Nature of subordinate categories	<p>In Example 1 on the facing page, why are the subordinate categories in the first group narrower than <i>Canada</i>, why the subordinate categories in the second group? What is the difference? (Hint: Remember <i>concepts narrower due to autonomous subdivision</i> and <i>concepts narrower due to combination</i>, p. 264 and 270 in Organizing Information)</p> <p>In Example 2 (which is not quite as clear cut),</p> <p style="padding-left: 40px;">mark with T the subordinate categories that are transportation-specific</p> <p style="padding-left: 40px;">mark with G the subordinate categories that are the broad concept of <i>transportation</i> 1 combined with some general concept not specific to the transportation domain.</p> <p>Note your observations</p> <p>► Answer B</p>

Nature of subordinate categories. Example 1

Directory > Regional > Countries >

Canada

- . Cities (1697)
- . Provinces and Territories (89205)
 - . Alberta (7683)
 - . British Columbia (19882)
 - . Manitoba (3680)
 - ...
- . Arts and Humanities (2425)
- . Business and Economy (20557)
- . Computers and Internet (333)
- . Country Guides (21)
- . Education (1236)
- ...

Nature of subordinate categories. Example 2

Directory > Business and Economy >

Transportation

- . Auto-Free Transportation (23)
- . Aviation (513)
- . Buses (26)
- . Companies@
- . Employment (5)
- . Government Agencies (62)
- . Highways and Roads (127)
- . History (5)
- . Institutes (44)
- . Intelligent Transportation Systems (25)
- . Libraries (7)
- . Mass Transit (59)
- . Web Directories (3)

Figure W-2. Nature of subordinate categories

Directory > Education

Yahoo! Education - K-12 Schools - Colleges - Online Degrees - Reference

CATEGORIES

Top Categories

Adult and Continuing Education (284)
Browse by Region (168)
By Culture or Group (317)

By Subject (1012)
Higher Education (17081) **NEW!**
K-12 (56360)

Additional Categories

Academic Competitions (99)
Bibliographies (5)
Bilingual (18)
Business to Business@
Career and Vocational (311)
Chats and Forums (22)
Conferences (35)
Correctional@
Disabilities@
Distance Learning (658)
Early Childhood Education (96)
Employment@
Equity (23)
Financial Aid (407)
Government Agencies (76)
Graduation (59)
History (17)

Instructional Technology (256)
Journals (40)
Legislation (11)
Literacy (21)
News and Media (77)
Organizations (2772)
Policy (54)
Programs (342)
Reform (87)
Shopping and Services@
Special Education (175)
Standards and Testing (140)
Statistics (6)
Teaching (75)
Theory and Methods (660)
Web Directories (4)

Figure W-2. Yahoo Education

The remaining questions deal with content aspects of the Yahoo classification

30 min.	2. Develop a meaningful arrangement of the categories one level below <i>Education</i>
Meaningful arrangement	<p>You can use the meaningful arrangement of the subcategories of <i>Health</i> (Figure 2b) as a general model. You are not expected to completely work out the solution; just listing some facets with sample terms under them would be an acceptable answer.</p> <p>► Answer C</p>

15 min.	3. Compare Yahoo with Dewey and Library of Congress Classification
Comparison of Yahoo with DDC and LCC	<p>Look over Figure W-3 on the facing page and get a sense of how different topics are treated in these classifications.</p> <p>Why is <i>literature</i> given more prominence in DDC and LCC than in Yahoo? Can you find a general principle that would explain the differences in emphasis in DDC and LCC on the one hand and the Yahoo Classification on the other?</p> <p>Note: Comparison is easier at lower levels of the hierarchy since different schemes may agree on specific narrower fields but group them differently at the top level of the hierarchy.</p> <p>► Answer D</p>

Dewey Decimal	Library of Congress	Yahoo
000 Computers, information, & general reference 000 Computers, Internet, & systems 010 Bibliography 020 Library and information sci. 070 News media	A General works QA Math, incl. computer science Z Bibliography and library science	Computers & Internet Reference News & Media
100 Philosophy & psychology	B-BJ Philosophy. Psychology.	A & H > Humanities > Philosophy
200 Religion	BL-BX Religion	Society and Culture > Religion and Spirituality
300 Social sciences 330 Econ, 380 Commerce 320 Pol. sci., 350 Pub. admin 340 Law 370 Education	H Social sciences HB-HJ Economics J Political science K Law L Education	Social Science Society & Culture Business & Economy Government Government > Law Education
400 Language	P-PM Language	Social Science > Linguistics and Human Languages
500 Natural sciences & math.	Q Science	Science (parts of)
600 Technology (Applied sciences) 610 Medical sciences and medicine 630 Agriculture Most of 600	R Medicine S Agriculture T Technology	Health Science > Agriculture Science (parts of)
700 Arts & recreation	M Music and books on music N Fine arts GV Recreation, leisure	Arts & Humanities Entertainment Recreation & Sports
800 Literature & rhetoric	PN-PZ Literature	Arts & Humanities > Humanities > Literature
900 Geography & history	C-F History, G Geography	A & H > Humanities > History Regional
	U Military science V Naval science	Government > Military

Figure W-3. Dewey, Library of Congress and Yahoo classification compared

15 min.	4. Compare Yahoo Directory Home, <i>State</i> subdivision and <i>City</i> subdivision
Home, City, and State subdivisions	<p>Look over Figure W-4 on the facing page and briefly describe the differences you see between Yahoo Home and the <i>State</i> subdivision and the <i>State</i> subdivision and the <i>City</i> subdivision.</p> <p>► Answer E</p>

Yahoo Directory Home	Subdivision of states	Subdivision of cities
Regional	Massachusetts Locations	
	Metropolitan Areas	
	Counties and Regions	
	Cities	
(Yellow Pages) (Maps)		Find Businesses Yellow Pages, Maps Driving Dir
		City Guides
(Classifieds)		Classifieds
	Real Estate	Real Estate (category, general) Local Real Estate (listings search)
	Employment	Employment (category, general) Local Jobs (job listings search)
		Online Community
Reference		
Computers & Internet	Computers & Internet	
News & Media	News & Media	News & Media
Entertainment	Entertainment	Entertainment & Arts
Arts & Humanities	Arts & Humanities	(See Entertainment & Arts below)
Education	Education	Education
Recreation & Sports	Recreation & Sports Travel & Transportation	Recreation & Sports Travel & Transportation
Business & Economy (Auctions) (Shopping)	Business & Economy	Business & Shopping
Government		
Society & Culture	Community & Culture	Community
Social Science	Social Science	
Health	Health	Health
Science	Science	

Figure W-4. Yahoo Directory Home compared with *State* subdivision and *City* subdivision

My arrangement (compare Figure 1b). The items in () in column 1 are not categories in Yahoo Directory Home, but links under the search box; there are many other such links. Most of the subdivisions under states and cities are accessed through a drop-down box titled State/Local Web Sites.

30 min.	5. Examine some principles Yahoo uses when designing subdivisions
Principles of subdivision	<p>Figure W-5 (starting on the facing page) gives a number of examples of category subdivisions. Where there are two groups, can you tell the difference between them?</p> <p>Write your observations on any two of the examples or state a general principle.</p> <p>► Answer F</p>

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis
Arranged by ease of analysis.

Figure W-5a

Directory > Reference > Libraries	
Categories (divided into two groups)	
Conferences (9) Countries (27) History (6) Librarians (29) Library and Information Science (306)	Organizations (59) Professional Resources (112) Serials (6) Web Directories (19)
Academic Libraries (451) Archives@ Arts Libraries@ Business Libraries@ Commercial Library Services@ Dance Libraries@ Digital Libraries (74) Education Libraries@ Environmental Libraries@ Government Documents@ Health Libraries@ Intellectual Property Libraries@ Internet Filtering in Libraries@ Law Libraries@ Lesbian, Gay and Bisexual@ Libraries for the Blind@ Literary Libraries@ Literature@ Map Libraries@ Masonic Libraries@	Military Libraries@ Music Libraries@ National Libraries (33) Native American Libraries@ Performing Arts Libraries@ Philatelic Libraries@ Physics Libraries@ Presidential Libraries@ Prison Libraries@ Public Libraries (3494) Religious Libraries@ School Libraries (35) Science Libraries@ Social Science Libraries@ Special Collections (41) Sports Libraries@ Theological Libraries@ Transportation Libraries@ U.S. State Libraries (49)

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis, cont.**Figure W-5b**

Directory > News and Media Categories (divided into two groups)	
By Region (21222) Columns and Columnists (286) Commercial Services@ Content Ratings@ Industry Information (824) Internet Broadcasts (400) Journals (33)	Magazines (3835) Newspapers (8419) Photojournalism@ Radio (9418) Television (15900) Web Directories (100)
Arts and Humanities@ Automotive@ Business (133) College and University (844) Computers and Internet@ Crime@ Cultures and Groups (15) Disabilities@ Education@ Entertainment@ Environment and Nature@ Good News (9) Government@ Health@ History@ Home and Garden@ Humor (219)	Law@ Outdoors@ Personalized News (14) Philanthropy@ Politics@ Real Estate@ Religion@ Science@ Sexuality@ Sports@ Technology (69) Traffic and Road Conditions@ Transportation@ Travel@ Weather (1087) Weird News (20) World (72)

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis, cont.**Figure W-5c**

Directory > Entertainment > Humor	
Categories (divided into two groups)	
Archives (122) Chats and Forums (34) Columns and Columnists (84) Comedy@ Comic Strips@ Companies@ Jokes (371)	Lists (65) News and Media@ Poetry@ Quizzes and Tests@ Quotations@ Stories (21) Web Directories (20)
Advertising (41) Advice (127) Animals (176) Begging (40) Bitterness (38) Bizarre (248) Boredom (4) Bubblewrap (4) Cars (40) Clean Humor (12) Codes (8) Computers and Internet (631) Cultures and Groups (177) Distorted Pictures (14) Drugs and Addictions (16) Duct Tape (11) Education (43) Fights (9) Food and Drink (139) Furniture (5) Gender Wars (37) Hair (27) Health and Medicine (22) Holidays and Observances (109) Horoscopes (19)	Job Humor (90) Military (3) Movies and Film (62) Murphy's Laws (6) Music (93) Names (25) Parenting (20) Parody (350) People (19) Philosophy (18) Politics (16) Procrastination (13) Rants (75) Religion (216) Science (109) Science Fiction and Fantasy (235) Sex (130) Sports (11) Stupidity (70) Tasteless (370) Traffic Cones (2) Useless Pages (123) Warning Labels (3) Wedding and Marriage (13)

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis, cont.**Figure W-5d**

Directory > Entertainment > Comics and Animation Categories (not divided into groups)	
Animation (1821) Artists@ Characters (163) Chats and Forums (18) Comic Books (1781) Comic Strips (1023) Conventions (22) Cultures and Groups (21)	Editorial Cartoons (110) Graphic Novels (15) Magazines (6) Organizations (22) People (6) Shopping and Services@ Small Press Comics (15) Web Directories (8)

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis, cont.

Figure W-5e

Directory > Government > Law Categories (divided into two groups)	
Alternative Dispute Resolution (38) Attorneys General@ Booksellers@ Cases (287) Continuing Legal Education (24) Countries (43) District Attorneys@ Employment Resources (48) Events (3) Firms and Services@ History (27) Journals (101) Jury Duty (15)	Law Enforcement@ Law Schools (296) Lawyer Jokes@ Legal Ethics (4) Legal Research (98) News and Media (49) Organizations (340) Self-Help (15) Software Companies@ U.S. Judiciary and Supreme Court@ U.S. States (50) Web Directories (40)
Administrative (9) Business (65) Constitutional (175) Consumer (25) Criminal Justice (110) Disability (29) Dog Breed Specific@ Elder (10) Employment (24) Entertainment (9) Environmental (72) Estate and Probate (10) Federal (16) Health (12)	Immigration and Naturalization (106) Indigenous Peoples@ Intellectual Property (167) International (48) Lesbian, Gay and Bisexual@ Privacy (35) Property (70) Sexuality@ Tax (54) Technology (104) Trade@ Women's Resources@ Usenet (9)

Figure W-5. Subdivisions of selected Yahoo categories for comparison and analysis, cont.**Figure W-5f**

Directory > Government > Politics Categories (not divided into groups, except for the fairly standard By Region)	
By Region (7647) U.S. Politics@	
Activism Resources (47) Chats and Forums (33) Civic Participation@ Elections (3151) General Information (3) Humor@ News and Media (24) Organizations (78)	Parties (134) Political Consulting@ Political Issues (46) Political Opinion (218) Political Science@ Political Theory@ Regional Conflicts (33) Web Directories (8)

60 min.	6. Overall facet analysis of the Yahoo classification
Facets in Yahoo	<p>Identify entity types / facets that occur throughout the Yahoo classification, preferably with some frequently occurring concepts under each. You can also mention concepts that occur as components in many places but that you cannot assign to a facet. Your listing would be the beginning of a faceted <i>core classification</i> for Yahoo (see Organizing Information, p. 299 and Section 15.6, p. 322-323).</p> <p>It would be interesting to find out how many elemental concepts are in this core classification and how many precombined categories Yahoo has in its <i>extended classification</i>..</p> <p>Answer G</p>

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

<p>1. Purpose</p> <p>1.1 Information system or type of information system in which to be used <i>Bibliographic information system: Organize Web pages</i></p> <p>1.2 Intended for controlled vocabulary indexing <input checked="" type="checkbox"/> or query term expansion <input type="checkbox"/> (Ch. 12, Introduction)</p> <p>1.3 Type of file and search mechanism for which originally designed Shelving <input type="checkbox"/> Card catalog / printed index <input type="checkbox"/> Online system <input checked="" type="checkbox"/> (<i>Web subject directories: Similar to shelving, but multiple locations for each class and multiple entries for each page</i>)</p>
<p>2. Coverage and designation of concepts. Coverage and format of terms</p> <p>2.1 Concepts: Scope, breadth of coverage. Recency of concepts <i>Universal — covers all of knowledge. But focus on Western culture, esp. US, on topics in HTML Web pages.,</i></p> <p>2.2 Concepts: Specificity, depth of coverage. (Section 16.2.2). Coverage at each level of specificity. <i>Medium specificity. Would need closer analysis by subject area. Geographic names quite specific.</i></p> <p>2.3 Are all needed facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1) <i>Answer would require extensive analysis. Many general concepts are visible as one looks at subdivisions that repeat in many places, but no list of these. Bound to English language; if there is no English term for a general concept, that concept is unlikely to show up explicitly in the Yahoo Classification.</i></p> <p>2.4 Nature of notation (if none, state that). (Section 15.5.2) <i>None.</i></p> <p>2.5 Terms: Completeness of coverage (completeness of lead-in vocabulary). Recency of terms <i>Only descriptors, no lead-in terms. Many terms are quite recent (very fast update).</i></p> <p>2.6 Form of terms: Consistency, adherence to common usage. <i>Terms seem appropriate. Most terms appear to be taken directly from generally used language, except for a few phrases like Arts and Humanities.</i></p>
<p>3. Terminological and conceptual analysis and conceptual structure.</p> <p>3.1 Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Fill in 3.1.1 - 3.1.3)</p> <p>3.1.1 Expression of concepts through elemental concepts (closely related to definition) <i>Category names are formed by stringing together terms that designate the category's conceptual components; to that extent, compound concepts are expressed through elemental concepts. However, compounds expressed through an accepted term in English, such as Ship, are not expressed through their components.</i></p> <p>3.1.2 Hierarchical relationships (polyhierarchy) (Shown by arrangement or Broader Term / Narrower Term X-ref) <i>Polyhierarchical; a category has a home place but may appear in many places in the hierarchy. From any place one get to the home place by a click, but the other places where the category appears are not indicated</i></p> <p>3.1.3 Associative relationships. (Implied by physical proximity in the arrangement or explicit Related Term X-ref) <i>None by the format. However, some of the hierarchical relationships should in fact be associative.</i></p> <p>3.2 Quality of definitions, explications, scope notes (correctness, detail, clarity). <i>No definitions.</i></p> <p>3.3 Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship? <i>Yahoo does not attempt to cover terminology beyond the category names.</i></p>

4. **Use of precombination in the index language** (concerns both 2 and 3) (14, 15, esp. 15.4)

4.1 To what degree are descriptors precombined?

Yahoo categories are highly to very highly precombined.

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?

Precombined descriptors are enumerated in the Yahoo directory. It is not known whether Yahoo indexers have schedules of just the elemental concepts to index from.

To what extent can the indexer build additional precombined descriptors?

Probably new categories built from existing components are added all the time either by indexers or by an editor based on indexer suggestions.

Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to 5) (Section 15.5.2)

By a string of symbols, the terms for the individual components. Exception: Words/terms like Ship that designate a compound concept. Combination order is free, with some apparent rules. The components completely determine the place of a precombined descriptor built by the indexer.

5. **Access and display. Format of presentation of the vocabulary**

Consider for each format access/retrieval by concepts versus access/retrieval by terms.

Access can be provided through arrangement in a printed document or through a computer search system.

5.1 **Format of printed document** (Fill in 5.1.1- 5.1.3) *No print version. Comments here refer to online display.*

5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

A menu tree, walking down one level at a time.

5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)

- through linear arrangement or graphical display (Section 15.5.2)

In the subject directory "multi-tree", in which each descriptor (category) can appear in multiple places

- through cross-references (Section 14.1)

No cross-references, other than a category appearing in multiple places.

- through descriptor-find index (Section 15.5.1)

The search function provides a descriptor find index of sorts.

How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).

The sequence of categories at each level is usually strictly alphabetical, sometimes divided into groups based on meaningful criteria.

5.1.3 Display of terminological relationships (Synonymous Term)

Terminological relationships are not included..

5.2 **Access through computer system.** Navigation. Format of on-line displays

Described in 5.1.

Instructions for using the Yahoo Classification

<p>Indexing</p>	<p>Give up to three categories per document. Yahoo does assign multiple categories to a document since a subject directory does not have the one-place-only constraints imposed by the physical arrangement of documents. Still only very important categories should be assigned (high-threshold, low-exhaustivity indexing). (I do not know the rules for number of categories that is given to Yahoo indexers.) Use the most specific category in each case. Give the categories in the format generally accepted on the Web (you can omit Directory):</p> <p style="text-align: center;">Directory > Education > K-12 > Schools > Elementary Schools</p> <p>Browse through the subject directory or use search to identify the categories under which a document should be found and under which it should therefore be indexed.</p>
<p>Query formulation</p>	<p>Try to list all categories where one should look for relevant documents; if there are more than 10 categories, just give a representative sample (enough to demonstrate that you know how to find all categories throughout the Yahoo classification).</p> <p>Note: A broad category implies all the narrower categories; no need to list these narrower categories, they can be readily seen from the Yahoo multi-tree.</p> <p>The query formulation is the OR combination of all the categories in your list. AND combinations of categories would run counter to the subject directory approach to searching; whether this approach makes best use of computer capabilities is a different question.</p> <p>You can formulate each query in terms of elemental concepts and than use these to find categories (see Worksheet, Task 6).</p>

<p>Arts & Humanities Literature, Photography ...</p> <p>Business & Economy B2B, Finance, Shopping, Jobs ...</p> <p>Computers & Internet Internet, WWW, Software, Games ...</p> <p>Education College and University, K-12 ...</p> <p>Entertainment Cool Links, Movies, Humor, Music ...</p> <p>Government Elections, Military, Law, Taxes ...</p> <p>Health Medicine, Diseases, Drugs, Fitness ...</p>	<p>News & Media Full Coverage, Newspapers, TV...</p> <p>Recreation & Sports Sports, Travel, Autos, Outdoors ...</p> <p>Reference Libraries, Dictionaries, Quotations ...</p> <p>Regional Countries, Regions, US States ...</p> <p>Science Animals, Astronomy, Engineering ...</p> <p>Social Science Archaeology, Economics, Languages ...</p> <p>Society & Culture People, Environment, Religion ...</p>
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Figure 1a. **Yahoo classification. Directory Home** (first summary)

<p>Reference and General Interest</p> <p>Reference Libraries, Dictionaries, Quotations ...</p> <p>Computers & Internet Internet, WWW, Software, Games ...</p>	<p>Subjects</p> <p>Science Animals, Astronomy, Engineering ...</p> <p>Health Medicine, Diseases, Drugs, Fitness ...</p> <p>Social Science Archaeology, Economics, Languages ...</p> <p>Society & Culture People, Environment, Religion ...</p> <p>Government Elections, Military, Law, Taxes ...</p> <p>Business & Economy B2B, Finance, Shopping, Jobs ...</p>
<p>News & Media Full Coverage, Newspapers, TV...</p> <p>Entertainment Movies, Music, Humor, Cool Links ...</p> <p>Recreation & Sports Sports, Travel, Autos, Outdoors...</p>	<p>Education College and University, K-12 ...</p> <p>Arts & Humanities Literature, Photography ...</p>
<p>Regional Countries, Regions, US States ...</p>	

Figure 1b. **Yahoo Classification. Directory Home. Meaningful arrangement**

Directory > Health**Categories**

Alternative Medicine (480)	Men's Health (30)
Business to Business@	Mental Health (682)
Chats and Forums (52)	Midwifery (60)
Children's Health (153)	News and Media (201)
Conferences (19)	Nursing (431)
Death and Dying@	Nutrition (207)
Dentistry@	Organizations (21)
Disabilities@	Pet Health@
Diseases and Conditions (7392)	Pharmacy (1096)
Education (39)	Procedures and Therapies (292)
Emergency Services (236)	Public Health and Safety (740)
Employment (108)	Reference (93)
Environmental Health (194)	Reproductive Health (659)
First Aid (14)	Senior Health (79)
Fitness (166)	Sexuality@
General Health (81)	Shopping and Services@
Health Administration (65)	Teen Health (13)
Health Care (356)	Traditional Medicine (179)
Health Sciences (26)	Travel Health and Medicine (16)
Hospitals and Medical Centers (38)	Web Directories (50)
Institutes (34)	Weight Issues (77)
Law@	Women's Health (153)
Long Term Care (116)	Workplace (6)
Medicine (4955)	

Figure 2a. **Yahoo classification. Health.**

Directory > Health

Categories

<p>Reference</p> <ul style="list-style-type: none"> . Reference . Web Directories . Chats and Forums . News and Media <p>Health Sciences Fields</p> <ul style="list-style-type: none"> . Health Sciences . Medicine . Dentistry@ . Nursing . Midwifery . Pharmacy . Traditional Medicine . Alternative Medicine <p>Individual health condition</p> <ul style="list-style-type: none"> . Diseases and Conditions . Disabilities@ . Fitness . Nutrition . Weight Issues . Reproductive Health . Sexuality@ . Death and Dying@ . Mental Health <p>Procedures and Therapies</p>	<p>Health by place</p> <ul style="list-style-type: none"> . General Health . Public Health and Safety . Environmental Health . Workplace . Travel Health and Medicine <p>Health by population group</p> <ul style="list-style-type: none"> . Human Health <ul style="list-style-type: none"> . Human Health by Age <ul style="list-style-type: none"> . Children's Health . Teen Health . Senior Health . Human Health by Gender <ul style="list-style-type: none"> . Women's Health . Men's Health . Animal Health <ul style="list-style-type: none"> . Pet Health@ <p>Health Care</p> <ul style="list-style-type: none"> . Emergency Services . First Aid . Long Term Care <p>Health care organization</p> <ul style="list-style-type: none"> . Hospitals and Medical Centers . Institutes . Organizations . Conferences . Health Administration . Shopping and Services@ . Business to Business@ . Law@ . Education . Employment
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Figure 2b. **Yahoo classification. Health. Meaningful arrangement.**

Figure 3. Yahoo classification second summary

Arts & Humanities

- SN Literature, Photography . . .
- . By Region (131)
- . Art History (742)
- . Artists (3474)
- . Arts Therapy@
- . Awards (16)
- . Booksellers@
- . Censorship (17)
- . Chats and Forums (45)
- . Companies@
- . Crafts (796)
- . Criticism and Theory (30)
- . Cultural Policy@
- . Cultures and Groups (483)
- . Design Arts (5177)
- . Education (631)
- . Employment (44)
- . Events (198)
- . Humanities (45830)
- . Institutes (38)
- . Museums, Galleries, & Cntrs (1016)
- . News and Media (260)
- . Organizations (360)
- . Performing Arts (6065)
- . Reference (35)
- . Thematic (456)
- . Visual Arts (12134)
- . Web Directories

Business & Economy

- SN B2B, Finance, Shopping, Jobs. . .
- . Business to Business (268905)
- . Shopping and Services (378101)
- . Business Libraries (23)
- . Business Schools@
- . Chats and Forums (24)
- . Classifieds (3632)
- . Consortia (42)
- . Consumer Advocacy and Information@
- . Conventions and Conferences (38)
- . Cooperatives (24)
- . Directories (347)
- . Economics@
- . Education (809)
- . Electronic Commerce (215)
- . Employment and Work (1742)
- . Ethics and Responsibility (46)
- . Finance and Investment (1804)
- . Global Economy (287)
- . History (20)
- . Intellectual Property@
- . Labor (725)
- . Law@
- . Magazines (130)
- . Management Science (203)
- . Marketing and Advertising (350)
- . News and Media@
- . Organizations (11880)
- . Quality Standards@
- . Real Estate (391)
- . Small Business Information (299)
- . Statistics and Indicators (5)
- . Taxes@
- . Television@
- . Trade (422)
- . Transportation (2094)

Computers & Internet

- SN Internet, WWW, Softw., Games . . .
- . Business to Business@
- . Shopping and Services@
- . Art@
- . Bibliographies (6)
- . Communications & Netw. (1128)
- . Computer Science@
- . Contests (26)
- . Conventions and Conferences@
- . Countries, Cultures, & Groups (38)
- . Cyberculture@
- . Data Formats (380)
- . Desktop Customization@
- . Desktop Publishing (53)
- . Dictionaries (32)
- . Employment@
- . Ethics (18)
- . Games@
- . Graphics (308)
- . Hardware (2292)
- . History (85)
- . Humor@
- . Industry Information@
- . Internet (5999)
- . Magazines@
- . Mobile Computing (64)
- . Multimedia (673)
- . Music@
- . News and Media (203)
- . Operating Systems@
- . Organizations (93)
- . People (119)
- . Personal Computers@
- . Product Reviews (2974)
- . Programming Languages (1515)
- . Science and Technology Policy@
- . Security and Encryption (589)
- . Semiconductors@
- . Software (6133)
- . Standards (45)
- . Supercomputing and Parallel Computing@
- . Technical Guides and Support (45)
- . Telecommunications@
- . Training@
- . User Groups@
- . Web Directories (14)
- . World Wide Web@
- . Year 2000 Problem (248)
- . Cnet
- . ZDNet

Education

- SN College and University, K-12
- ...
- . Browse by Region (170)
- . By Culture or Group (404)
- . By Subject (12)
- . Academic Competitions (80)
- . Adult and Continuing Education (330)
- . Bibliographies (4)
- . Bilingual (23)
- . Career and Vocational (234)
- . Chats and Forums (40)
- . Companies@
- . Conferences (50)
- . Correctional@
- . Disabilities@
- . Distance Learning (491)
- . Early Childhood Education (92)
- . Employment (146)
- . Equity (27)
- . Financial Aid (396)
- . Government Agencies (78)
- . Graduation (52)
- . Higher Education (16594)
- . Instructional Technology (341)
- . Journals (38)
- . K-12 (54618)
- . Literacy (12)
- . News and Media (83)
- . Organizations (3094)
- . Policy (52)
- . Programs (335)
- . Reform (73)
- . Special Education (172)
- . Standards and Testing (59)
- . Statistics (6)
- . Teaching (63)
- . Theory and Methods (672)
- . Web Directories (47)

Entertainment

- SN Cool Links, Movies, Humor, Music ...
- . Actors and Actresses (11355)
- . Amusement & Theme Parks (396)
- . Books and Literature@
- . Chats and Forums (92)
- . Comedy (794)
- . Comics and Animation (4979)
- . Consumer Electronics (588)
- . Contests, Surveys, and Polls (424)
- . Cool Links (1837)
- . Employment (366)
- . Entertainment and Media Production@
- . Events (214)
- . Food and Drink@
- . Gambling@
- . Games@
- . Genres (1363)
- . History (15)
- . Humor (4857)
- . Magic (296)
- . Movies and Film (19920)
- . Music (82025)
- . News and Media (394)
- . Organizations (11)
- . Performing Arts@
- . Radio@
- . Randomized Things (76)
- . Reviews (39)
- . Shopping and Services@
- . Television@
- . Trivia (109)
- . Virtual Cards (1019)
- . Web Directories (36)
- . Webisodes (94)
- . X of the Day, Week, etc. (171)

Government

- SN Elections, Military, Law, Tax
- . Countries (147)
- . Chats and Forums (7)
- . Civic Participation (27)
- . Conventions and Conferences (17)
- . Documents (26)
- . Embassies and Consulates (99)
- . Ethics (14)
- . Intelligence (125)
- . International Organizations (531)
- . Law (2671)
- . Military (867)
- . National Symbols and Songs (50)
- . News and Media (11)
- . Politics (11446)
- . Public and Civil Service (8)
- . Research Labs (26)
- . Statistics (40)
- . Student Government@
- . Taxes (53)
- . US Government (11649)
- . Web Directories (14)

Health

- SN Medicine, Diseases, Drugs, Fitness ...
- . Alternative Medicine (515)
- . Business to Business@
- . Chats and Forums (56)
- . Children's Health (186)
- . Conferences (18)
- . Death and Dying@
- . Dentistry@
- . Disabilities@
- . Diseases and Conditions (8505)
- . Education (62)
- . Emergency Services (536)
- . Employment (118)
- . Environmental Health (200)
- . First Aid (12)
- . Fitness (201)
- . General Health (90)
- . Health Administration (66)
- . Health Care (347)
- . Health Sciences (27)
- . Hospitals and Medical Centers (44)
- . Institutes (34)
- . Law@
- . Long Term Care (109)
- . Medicine (5071)
- . Men's Health (37)
- . Mental Health (753)
- . Midwifery (56)
- . News and Media (199)
- . Nursing (459)
- . Nutrition (218)
- . Organizations (21)
- . Pet Health@
- . Pharmacy (1231)
- . Procedures and Therapies (458)
- . Public Health and Safety (2207)
- . Reference (98)
- . Reproductive Health (713)
- . Senior Health (85)
- . Sexuality@
- . Shopping and Services@
- . Teen Health (23)
- . Traditional Medicine (197)
- . Travel Health and Medicine (24)
- . Web Directories (54)
- . Weight Issues (90)
- . Women's Health (174)
- . Workplace (67)

News & Media

- SN Full Coverage, Newspapers, TV . . .
- . By Region (21280)
- . Columns and Columnists (276)
- . Commercial Services@
- . Content Ratings@
- . Industry Information (821)
- . Internet Broadcasts (396)
- . Journals (33)
- . Magazines (3845)
- . Newspapers (8447)
- . Photojournalism@
- . Radio (9428)
- . Television (15866)
- . Web Directories (99)
- . Arts and Humanities@
- . Automotive@
- . Business (133)
- . College and University (1003)
- . Computers and Internet@
- . Crime@
- . Cultures and Groups (15)
- . Disabilities@
- . Education@
- . Entertainment@
- . Environment and Nature@
- . Good News (9)
- . Government@
- . Health@
- . History@
- . Home and Garden@
- . Humor (218)
- . Law@
- . Outdoors@
- . Personalized News (14)
- . Philanthropy@
- . Politics@
- . Real Estate@
- . Religion@
- . Science@
- . Sexuality@
- . Sports@
- . Technology (69)
- . Traffic and Road Conditions@
- . Transportation@
- . Travel@
- . Weather (1088)
- . Weird News (20)
- . World (71)
- . ABC News
- . BBC News
- . CNN
- . Fox News
- . MSNBC

Recreation & Sports

- SN Sports, Travel, Autos, Outdoors . . .
- . Amusement and Theme Parks@
- . Automotive (5657)
- . Aviation (810)
- . Booksellers@
- . Chats and Forums (7)
- . Cooking@
- . Dance@
- . Employment (7)
- . Events (10)
- . Fitness@
- . Gambling (315)
- . Games (17999)
- . Hobbies (3044)
- . Home and Garden (760)
- . Magazines (63)
- . Motorcycles@
- . Outdoors (9884)
- . Pets@
- . Sports (47097)
- . Television@
- . Toys (948)
- . Travel (112681)

Reference

- SN Libraries, Dictionaries, Quotations . . .
- . Acronyms and Abbreviations (25)
- . Almanacs (13)
- . Arts and Humanities@
- . Ask an Expert (556)
- . Bibliographies (7)
- . Booksellers@
- . Calendars (81)
- . Codes (24)
- . Dictionaries (153)
- . Directories (3)
- . Encyclopedia (23)
- . English Language Usage@
- . Environment and Nature@
- . Etiquette@
- . FAQs (18)
- . Finance and Investment@
- . Flags (26)
- . General (13)
- . Geographic Name Servers@
- . Health@
- . Journals@
- . Libraries (4803)
- . Maps@
- . Measurements and Units@
- . Music@
- . Parliamentary Procedure (13)
- . Patents@
- . Phone Numbers and Addresses (166)
- . Postal Information (21)
- . Quotations (235)
- . Research Papers@
- . Searching the Net@
- . Standards (75)
- . Statistics (27)
- . Thesauri (22)
- . Time@
- . Web Directories (16)
- . World Population Counts@

Regional

- SN Countries, Regions, US States . . .
- . U. S. States
- . Countries
- . Regions (8344)
- . Geography@
- . Web Directories (28)

Science

- SN Animals, Astronomy, Engineering. . . .
- . Acoustics (66)
- . Agriculture (2054)
- . Alternative (1047)
- . Amateur Science (18)
- . Animals, Insects, and Pets@
- . Anthropology and Archaeology@
- . Artificial Life (129)
- . Ask an Expert (21)
- . Astronomy (2519)
- . Aviation and Aeronautics (236)
- . Bibliographies (6)
- . Biology (16535)
- . Booksellers@
- . Chats and Forums (45)
- . Chemistry (1275)
- . Cognitive Science (94)
- . Complex Systems (23)
- . Computer Science (1516)
- . Dictionaries (27)
- . Earth Sciences (2831)
- . Ecology (746)
- . Education (549)
- . Employment (44)
- . Energy (554)
- . Engineering (4659)
- . Events (35)
- . Forensics (59)
- . Geography (3410)
- . Geology and Geophysics@
- . History (83)
- . Humor@
- . Hydrology@
- . Information Technology (71)
- . Institutes (58)
- . Journals (31)
- . Libraries (33)
- . Life Sciences (17)
- . Mathematics (1934)
- . Measurements and Units (219)
- . Medicine@
- . Meteorology@
- . Museums and Exhibits (146)
- . Nanotechnology (51)
- . News and Media (140)
- . Oceanography@
- . Organizations (160)
- . Paleontology@
- . People (52)
- . Physics (1647)
- . Psychology@
- . Religion and Science@
- . Research (161)
- . Science and Technology Policy
- . Science on Postage Stamps (8)
- . Space (1292)
- . Sports@
- . Web Directories (43)

Social Science

- SN Archaeology, Economics, Languages
- . Anthropology and Archaeology (1145)
- . Area Studies (698)
- . Bibliographies (13)
- . Books@
- . Chats and Forums (12)
- . Communications (1700)
- . Conferences (17)
- . Critical Theory@
- . Disability Studies (8)
- . Economics (1113)
- . Education (25)
- . Employment (4)
- . Environmental Studies@
- . Ethnic Studies (173)
- . Futures Studies (25)
- . Gender Studies (21)
- . Genealogy@
- . Geography@
- . Gerontology (36)
- . History@
- . Humanities@
- . Institutes (83)
- . Journals (29)
- . Law@
- . Lesbian, Gay, & Bisexual Studies (62)
- . Libraries (13)
- . Library and Information Science@
- . Linguistics & Human Languages (2814)
- . Migration and Ethnic Relations (37)
- . Organizations (29)
- . Peace and Conflict Studies (129)
- . Political Science (1125)
- . Popular Culture Studies@
- . Psychology (1346)
- . Recreation and Leisure Studies (82)
- . Rural Development (36)
- . Science, Technology, and Society Studies (100)
- . Sexology (33)
- . Social Research (62)
- . Social Work (158)
- . Sociology (421)
- . Urban Studies (324)
- . Web Directories (13)
- . Women's Studies (178)

Society & Culture

- SN People, Environment, Religion
- . Advice (108)
- . Bibliographies (11)
- . Chats and Forums (41)
- . Crime (4537)
- . Cultural Policy (11)
- . Cultures and Groups (13258)
- . Death and Dying (477)
- . Disabilities (1482)
- . Environment and Nature (6972)
- . Etiquette (36)
- . Events (35)
- . Families (878)
- . Fashion@
- . Firearms (155)
- . Food and Drink (5147)
- . Gender (35)
- . Holidays and Observances (2062)
- . Issues and Causes (3921)
- . Journals (4)
- . Magazines (219)
- . Museums and Exhibits (5366)
- . Mythology and Folklore (976)
- . People (46774)
- . Pets@
- . Relationships (447)
- . Religion and Spirituality (36093)
- . Reunions (370)
- . Sexuality (1470)
- . Social Organizations (440)
- . Web Directories (10)
- . Weddings (283)

Figure 4

Excerpts from the Yahoo Classification

These excerpts from the Yahoo classification are designed to illustrate the structure of the classification, particularly its treatment of *Education* and *Transportation*.

This list is by no means complete with respect to Yahoo classes that deal with *Education* or *Transportation*. Only the areas labeled “(complete)” list all the subdivisions or at least enough subdivisions to give a sense of the overall structure and content of the area. In other areas the subdivisions have been selected to *Education* or *Transportation* or otherwise make a point about the structure. The list does illustrate patterns that are repeated throughout the classification.

Note: Some Yahoo classes do not have the number of associated Web pages. I sometimes used a simplified method for copying from the Yahoo displays that did not carry the number with it. Numbers were also deleted if they ran into a second line.

Symbols used

- Category falls conceptually under *Education* (this may or may not be shown in Yahoo).
- ▶ Category falls conceptually under *Transportation* (this may or may not be shown in Yahoo).

SN Scope Note. If SN is bolded, you should read it because it illustrates a general point.

At the top of each left page the hierarchical context is given by repeating the preceding levels of the hierarchy in italics, e.g. *Education*. Across a page spread, you can always find the hierarchical context.

The top level categories are **large and bold**, the categories on level 1 are **bold**. Sometimes important subdivisions further down are bolded to make the structure easier to see.

Arts & Humanities

SN Literature, Photography ...

- . **Design Arts** (5187)
 - . . Architecture (1497)
 - . . . Buildings and Structures (474)
 - ▶Bridges@
 - •Education (158)
 - . . . •Education (73)
 - . •**Education**
 - . . Art History@
 - . . Art Schools (132)
 - . . College and University (252)
 - . . Companies@
 - . . Courses (12)
 - . . Design Arts@
 - . . Humanities@
 - . . K-12 (90)
 - . . . Curriculum Standards (28)
 - Drama@
 - Lesson Plans (17)
 - Schools (35)
 - Usenet (2)
 - . . . Non-Degree Programs (47)
 - . . . Organizations (32)
 - . . . Performing Arts@
 - . . . Teaching (6)
 - . . . Workshops
 - . **Humanities**
 - . . History
 - . . . •Education
 - Art History@
 - College and University (217)
 - Courses (2)
 - K-12 (71)
 - Courses (16)
 - Curriculum Standards (5)
 - Fairs and Competitions (3)
 - Social Studies@
 - Teacher Resources (26)
 - Organizations (4)
 - U.S. History
 - By Time Period
 - 19th Century
 - ▶Transcontinental Railroad
 - . . Literature (16329)
 - . . . Authors (9971)
 - ▶Travel Writers (86)
 - . . . Genres (2194)
 - Nonfiction (130)
 - ▶Travel Writing (16)
 - . **Performing Arts**
 - . . Dance
 - . . . •Education
 - College and Univ. Depts (24)
 - K-12 Curriculum Standards
 - Schools (138)
 - Summer Programs & Festivals

Business & Economy

SN B2B, Finance, Shopping, Jobs

- . **Business to Business** (268905)
 - . . Construction (36758)
 - . . . General Contractors (448)
 - Commercial (344)
 - ▶Railroads (15)
 - . . . ▶Automotive (2053)
 - •Training and Development (32)
 - Professional Driving Schools
 - . •**Education** (complete)
 - . . **By Subject** (909)
 - . . . Adult Basic Education (8)
 - Art@
 - Business@
 - Computers & Technology (38)
 - Environment and Nature (11)
 - Health and Fitness@
 - Languages (242)
 - Directories (1)
 - Professional Development (2)
 - Teaching & Learning Aids
 - Booksellers@
 - CDs, Records, & Tapes
 - Curriculum (3)
 - Publishers@
 - Software (35)
 - Specific Languages (163)
 - Amharic (1)
 - Arabic (4)
 - Bahasa Indonesia (1)
 - Chinese (11)
 - English 2nd Language
 - Farsi (1)
 - French (15)
 - German (4)
 - Greek (4)
 - Hawaiian (1)
 - Italian (2)
 - Japanese (13)
 - Korean (3)
 - Navajo (1)
 - Russian (7)
 - Scots English (1)
 - Sign Language (12)
 - Spanish (16)
 - Swedish (1)
 - Tagalog (2)
 - Thai (2)
 - Vietnamese (1)
 - Welsh (1)
 - Videos (7)
 - . . Life Skills (61)
 - . . . Mathematics (133)
 - . . . Media Studies (2)
 - . . . Music (11)

- Reading and Writing (176)
- Religion@
- Science (166)
- Social Studies (39)
- Special Education (6)
- Vocational Arts (12)
- . . . Academic Competitions (8)
- . . . Administration (198)
- . . . Computers and Technology (81)
- . . . Consulting (62)
- . . . Directories (5)
- . . . Financial Services (14)
- . . . Fund Raising@
- . . . International (9)
- . . . Marketing and Recruiting (14)
- . . . Presenters (13)
- . . . Professional Development (55)
- . . . School Management (42)
- . . . Supplies and Equipment (83)
- . . . **Teaching & Learning Aids** (493)
 - By Subject (49)
 - Adult Basic Education@
 - Adult Literacy@
 - Curriculum (4)
 - Software (3)
 - Software (4)
 - Adult Literacy@
 - Art (8)
 - Curriculum (3)
 - Software (2)
 - Videos (2)
 - Business (6)
 - Computers & Technology@
 - Curriculum (2)
 - Logo Programming Language@
 - Software (4)
 - Videos (2)
 - Titles (1)
 - Environment and Nature@
 - Health and Fitness (12)
 - Curriculum (6)
 - Sex Education (2)
 - Languages@
 - Booksellers@
 - Arabic (6)
 - Chinese (5)
 - French (5)
 - German (5)
 - Greek (4)
 - Japanese (8)
 - Titles (1)
 - Polish (4)
 - Portuguese (7)
 - Publishers@
 - Russian (7)

. Spanish (17)
 Antique, Rare, & Used
 Titles (4)
 Tamil (3)
 Titles (7)
 Dictionaries@
 Japanese@
 Spanish@
 CDs, Records, & Tapes
 English as a second
 Language @
 Curriculum (3)
 Publishers@
 English as a second
 Language (5)
 Software (34)
 Chinese@
 English as a second
 Language@
 Japanese@
 Resellers (5)
 Sign Language@
 Spanish@
 Titles (2)
 Specific Languages (157)
 Amharic (1)
 Arabic (4)
 Bahasa Indonesia (1)
 Chinese (11)
 Booksellers@
 Software (7)
 English as a second
 Language (57)
 CDs, Records,&Tapes (5)
 Flash Cards (2)
 Magazines@
 Online Subscription
 Services (2)
 Publishers@
 Software (17)
 TOEFL Preparation@
 Videos (4)
 Farsi (1)
 French (14)
 Booksellers@
 German (4)
 Greek (4)
 Hawaiian (1)
 Italian (2)
 Japanese (13)
 Booksellers@
 Titles (1)
 Software (9)
 Korean (2)
 Navajo (1)
 Russian (6)
 Booksellers@

. Scots English (1)
 Sign Language (12)
 Software (2)
 Videos (8)
 Titles (4)
 Spanish (15)
 Booksellers@
 Software (6)
 Swedish (1)
 Tagalog (2)
 Thai (2)
 Vietnamese (1)
 Welsh (1)
 Videos (7)
 English as a second
 Language@
 Sign Language@
 Titles (1)
 Life Skills@
 Character Education (11)
 Curriculum (3)
 Curriculum (13)
 Character Education@
 Software (3)
 Videos (8)
 Titles (2)
 Mathematics@
 Books@
 Algebra (3)
 Calculus (4)
 Chaos (3)
 Statistics (1)
 Curriculum (5)
 Games (2)
 Manipulatives (11)
 Online Subscription
 Services (1)
 Posters and Charts (1)
 Software (77)
 Testing & Assessment
 Software@
 Titles (2)
 Titles (16)
 Videos (6)
 Titles (2)
 Media Studies@
 Music@
 Reading and Writing@
 Adult Literacy (9)
 Curriculum (4)
 Software (3)
 Books@
 Curriculum (24)
 Adult Literacy@
 Flash Cards (5)
 Games (4)
 Manipulatives (3)

. Software (49)
 Adult Literacy@
 Handwriting (2)
 Speed Reading@
 Spelling@
 Titles (7)
 Speed Reading@
 Software (4)
 Spelling (7)
 Games (2)
 Software (3)
 Videos (4)
 Vocabulary (11)
 Religion (10)
 Christian Home
 Schooling@
 Science@
 CDs, Records, & Tapes
 Curriculum (12)
 Environment & Nature@
 Games (1)
 Lab Equipment&Supplies (23)
 Manipulatives (6)
 Online Subscription
 Services (3)
 Posters and Charts (3)
 Software (43)
 Chemistry (4)
 Physics (6)
 Titles (4)
 Videos (8)
 Social Studies@
 Curriculum (8)
 Online Subscription Serv.
 Software (5)
 Videos (4)
 Titles (1)
 Special Education@
 Publishers@
 Vocational Arts@
 Software (4)
 Academic Competitions (3)
 Books@
 Retail@
 Publishers@
 Academic@
College & University
 Presses@
 Organizations (1)
Textbooks@
 Booksellers@
 Home Schooling
 Materials (21)
 Language Education@

Business & Economy
 . *Business to Business*

| | | |
|------------------------------------|-------------------------------|-------------------------------------|
| ... •Education | ... Online Subscription Serv. | ... Student Information |
| ... Teaching & Learning Aids (493) | ... Email (2) | ... Inventory Management |
| ... Special Education Books | ... Art@ | ... Registration (1) |
| ... Supplementary Materials | ... English 2nd Language@ | ... Resellers (3) |
| ... Forensics & Debate | ... Mathematics@ | ... Scheduling (8) |
| ... Teacher Aids (12) | ... Science@ | ... Special Education |
| ... Textbooks (88) | ... Social Studies@ | ... Testing & Assessment |
| ... Higher Education (53) | ... Flash Cards (10) | ... Classroom Computer |
| ... K-12 (17) | ... English as a second | ... Control (4) |
| ... Vocational Training | ... Language@ | ... Test Preparation@ |
| ... Books (4) | ... Reading and Writing@ | ... College Entrance@ |
| ... Textbooks (43) | ... Software (5) | ... Titles (4) |
| ... College & University | ... Games (7) | ... Mathematics@ |
| ... Bookstores@ | ... Mathematics@ | ... Reading and Writing@ |
| ... Textbooks@ | ... Reading and Writing@ | ... Videos (44) |
| ... Science@ | ... Science@ | ... By Subject (13) |
| ... Used (18) | ... Software@ | ... Art@ |
| ... Titles (95) | ... Manipulatives (5) | ... Computers & Technol.@ |
| ... Administration (2) | ... Mathematics@ | ... Languages@ |
| ... College & University | ... Reading and Writing@ | ... Life Skills@ |
| ... Admissions (10) | ... Science@ | ... Mathematics@ |
| ... Athletic Recruiting@ | ... Montessori (10) | ... Reading and Writing@ |
| ... Financial Aid (6) | ... Newspapers & Magazines | ... Science@ |
| ... University Life (4) | ... Posters and Charts (9) | ... Social Studies@ |
| ... Distance Learning (3) | ... Mathematics@ | ... Titles (5) |
| ... Educating Your Child@ | ... Science@ | ... Computers & Tech..@ |
| ... Home Schooling (8) | ... Publishers@ | ... Languages@ |
| ... Reform (3) | ... Software (149) | ... Sign Language@ |
| ... School Directories (4) | ... By Subject (10) | ... Life Skills@ |
| ... Study Guides (7) | ... Adult Basic Education@ | ... Mathematics@ |
| ... Teaching (20) | ... Art@ | ... Social Studies@ |
| ... Reading (8) | ... Computers & Technology@ | ... Test Preparation@ |
| ... Test Preparation (12) | ... Languages@ | ... Titles (2) |
| ... Textbooks (8) | ... Life Skills@ | ... By Subject@ |
| ... Titles@ | ... Mathematics@ | ... Test Preparation@ |
| ... Christian Home Schooling@ | ... Reading and Writing@ | ... Teaching Methods (1) |
| ... Curriculum (38) | ... Science@ | ... Testing and Assessment (27) |
| ... By Subject (9) | ... Social Studies@ | ... Emergency Services (803) |
| ... Christian Home Schooling@ | ... Vocational Arts@ | ... ▶Air Ambulance Services (34) |
| ... Preschool (9) | ... Flash Cards@ | ... Supplies and Equipment (159) |
| ... School Reform (2) | ... Games (1) | ... ▶Vehicles (20) |
| ... Textbooks@ | ... Resellers (18) | ... Ambulances (12) |
| ... Learning Skills (21) | ... Shareware (2) | ... Fire Trucks@ |
| ... Memory Improvement (10) | ... Software Reviews@ | ... Rescue Watercraft@ |
| ... Software (2) | ... Teaching Tools (15) | ... Labor |
| ... Study Skills (2) | ... Admin. Functions@ | ... Unions |
| ... Books@ | ... Classroom Organizers | ... ▶Railroad@ |
| ... Publishers@ | ... Consulting (1) | ... ▶ Transportation (3755) |
| ... Resellers (23) | ... Curriculum Planning | ... Aerospace@ |
| ... Reviews (2) | ... Discipline Tracking | ... Automotive@ |
| ... Supplementary Materials | ... Financial (5) | ... Aviation (1627) |
| ... CDs, Records, & Tapes (7) | ... Grading & Evaluation | ... Aerial Advertising@ |
| ... Languages@ | ... Resellers (1) | ... Aerospace@ |
| ... English 2nd Language@ | ... Titles (3) | ... Agricultural@ |
| ... Science@ | ... Home Schooling (5) | ... Air Cargo Services@ |
| ... Distance Learning (35) | ... Info. Mangmnt Systems | ... Air Shows (8) |
| | ... School-to-Wrk Progr. | ... Aircraft (900) |

- Airlines@
- United Airlines
- •Education
- Airports (110)
- Aviation Weather@
- Avionics@
- Aviophobia@
- Books@
- Classifieds@
- Consulting (71)
- Directories (28)
- In-Flight Entertainment (3)
- Insurance@
- Navigation Systems@
- Organizations (80)
- Software (76)
- Supplies and Equipment (107)
- Trade Magazines (19)
- Training (189)
- Videos@
- . . . Buses (74)
- . . . Consulting (73)
- . . . Directories (10)
- . . . Fleet Services (92)
- . . . Intelligent Transportation Syst.
- . . . Limousines and Shuttles (23)
- . . . Maritime (307)
- Boat Transport (25)
- Boating@
- Cargo Services@
- Construction@
- Consulting (5)
- Conventions & Trade Shows (6)
- Directories (10)
- Insurance@
- Navigation@
- Organizations (17)
- Parts and Accessories (39)
- Port Authorities@
- Publications (4)
- Shipbuilding (94)
- Ships (33)
- Software (7)
- Submarines (9)
- Trade Magazines (2)
- . . . Movers@
- . . . Organizations@
- . . . Road Maintenance (30)
- . . . Software (64)
- . . . Trade Magazines (10)
- . . . Traffic Control (165)
- . . . Trains and Railroads (126)
- . . . Trolleys (8)
- . . . Trucks
- Trucking (594)
- •Driving Schools (35)

- . **Shopping and Services** (378101)
- . . ▶Automotive (24751)
- . . . •Driving Schools (524)
- By Region (491)
- U.S. States (256)
- Massachusetts (5)
- SN Boston Metro not here
- New York (42)
- Cities (14)
- New York@ see ***
- . . . Motorcycles (1054)
- •Driving Schools (5)
- . . Publishers (3285)
- . . . •Education (277)
- . . . Languages (35)
- •Language Education (17)
- English as a second Language
- . **•Education**
- . . Business Schools@
- . . College and University (775)
- . . K-12 (26)
- . . Curriculum Standards (4)
- . . Organizations (22)
- . . Organizations (6)
- . ▶**Transportation** (2094) (complete)
- . . SN No subcategory Education
- . . Auto-Free Transportation (23)
- . . Bicycle Advocacy@
- . . Mass Transit@
- . . Organizations (8)
- . . Pedestrian Advocacy & Safety@
- . . Aviation (513)
- . . Accidents (51)
- . . . SN LCC has X-ref from Health
- . . . Grief Support@
- . . . Specific Crashes (37)
- . . . Aerospace Companies@
- . . . Aviation@
- . . . Consulting (45)
- . . . Development (6)
- . . . Electronic Warfare@
- . . . Engines (16)
- . . . Equipment (214)
- . . . Industry Information (28)
- . . . Research and Design (32)
- . . . Simulations (15)
- . . . Software (25)
- . . . Spacecraft
- . . Air Traffic Control (14)
- . . Air Travel@
- . . Aircraft (119)
- . . Art@
- . . Aviation and Aeronautics@
- . . Aviation & Aerospace Medcin@
- . . Aviation Weather@
- . . Aviators (55)
- . . Aviophobia@

- . . . Classifieds@
- . . . Companies@
- . . . History (149)
- . . . Military@
- . . . Museums@
- . . . Pictures (46)
- . . . Recreational Aviation@
- . . . Safety (32)
- . . . Women
- . . Buses (26)
- . . Canals (22)
- . . Commuting (30)
- . . Companies@
- . . Employment (4)
- . . Events (2)
- . . Freight (8)
- . . Government Agencies (62)
- . . Highways and Roads (127)
- . . Automated Highway Systems@
- . . Bridges (52)
- . . Government Agencies (9)
- . . Organizations (13)
- . . Regional Information (38)
- . . Road Maintenance@
- . . Roman Roads@
- . . Scenic Highways and Byways@
- . . Traffic and Road Conditions@
- . . Traff. Signs, Signals, & Lamps@
- . . History (5)
- . . Institutes (44)
- . . Intelligent Transportation Systems
- . . Libraries (7)
- . . Limousines and Shuttles@
- . . Maritime (237)
- . . . Boats@
- . . . Companies@
- . . . Cruise Lines@
- . . . Employment (8)
- . . . Maritime History@
- . . . Merchant Marines (6)
- . . . Passenger Ferries (51)
- . . . Port Authorities (128)
- . . . Ships (28)
- . . . Submarines@
- . . Mass Transit (58)
- . . Museums (17)
- . . News and Media (247)
- . . Traffic & Road Conditions (234)
- . . . Traffic Cams (15)
- . . Organizations (67)
- . . Port Authorities@
- . . Safety (14)
- . . Statistics (7)

Business & Economy

- . ▶ **Transportation**
- . . Streetcars, Trolleys, & Trams (45)
- . . Taxis (17)
- . . Traffic and Road Conditions@
- . . Trains and Railroads (390)
- . . . Companies@
- . . . High Speed Rail (11)
- . . . History (81)
- . . . Magazines (10)
- . . . Model Trains and Railroads@
- . . . Monorails (9)
- . . . Museums (64)
- . . . Organizations (27)
- . . . Railbiking@
- . . . Rails-to-Trails (27)
- . . . Railway Enthusiasts (55)
- . . . Railwayana (5)
- . . . Safety (17)
- . . . Steam Locomotives (8)
- . . . Subways (5)
- . . . Travel@
- . . . Web Directories (10)
- . . . Usenet
- . . Transportation Engineering@
- . . Trucking (46)
- . . Tunnels (32)
- . . Web Directories (3)
- . . Usenet (4)

Computers & Internet

- SN Internet, WWW, Software, Games ...
- . **Internet** (5999)
- . . Devices Connected to the Internet (1316)
- . . . Web Cams (1233)
- Outdoor Cams (233)
- ▶ Traffic Cams@
- . . • Online Teaching and Learning@
- . **Multimedia** (675)
- . . Audio (200)
- . . . Formats (133)
- MP3 (118)
- Players@
- ▶ Automotive (9)
- . **Software**
- . . Reviews
- . . . • Education
- . . . Scientific
- Math
- • Educational

•Education (complete, except for regional subdivisions)

- SN College and University, K-12
- SN No subcategory Transportation either directly or indirectly
- . **By Region** (170)
- . . Regions (6)
- . . . Africa@
- . . . Asia@
- Browse By Country (38)
- Armenia@
- Azerbaijan@
- Bahrain@
- Bangladesh@
- Higher Education (10)
- Organizations (3)
- Primary and Secondary (3)
- Cities@
- Complete List@
- Brunei@
- Cambodia@
- China@
- India@
- Indonesia@
- Iran@.
- Government Agencies (1)
- Higher Education (19)
- Colleges & Universities
- Cities@
- Isfahan@
- Shiraz@
- Tehran@
- Complete List@
- Teaching (1)
- Iraq@
- Israel@
- Japan@
- Jordan@
- Kazakstan@
- Korea, South@
- Krygyzstan@
- Kuwait@
- Lebanon@
- Macau@
- Malaysia@
- Mongolia@
- Myanmar@
- Nepal@
- Oman@
- Pakistan@
- Philippines@
- Qatar@
- Russia@
- Saudi Arabia@
- Singapore@
- Sri Lanka@
- Taiwan@

- Thailand@
- Turkey@
- United Arab Emirates@
- Vietnam@
- Yemen@
- Companies@
- Conferences (1)
- Higher Education (1)
- Organizations (3)
- Primary and Secondary (3)
- Complete List@
- Guidance Counseling
- Student Resources
- . . . Europe@
- . . . Latin America@
- . . . Oceania@
- . . . Pacific Rim@
- . . Countries (113)
- . . . Andorra@
- . . . Argentina@
- Distance Learning (1)
- Higher Education (28)
- Colleges and Universities(29)
- Cities@
- Buenos Aires@
- Cordoba@
- Lujan@
- Moron@
- Rosario@
- Salta@
- Provinces and Regions@.
- Buenos Aires@
- Cordoba@
- Lujan@
- Moron@
- Rosario@
- Salta@
- Complete List@
- Organizations (1)
- Primary and Secondary (20)
- Cities@
- Buenos Aires@
- Cordoba@
- Provinces and Regions@
- Buenos Aires@
- Cordoba@
- Complete List@
- Schools (1)
- Programs (1)
- Spanish Language Schools@
- . . . Armenia@
- . . . Australia@
- . . . Austria@
- . . . Bahrain@
- . . . Bangladesh@
- . . . Belarus@
- . . . Belgium@

. . . Belize@
 . . . Bolivia@
 . . . Bosnia and Herzegovina@
 . . . Brazil@
 . . . Brunei@
 . . . Bulgaria@
 . . . Canada@
 . . . Chile@
 . . . China@
 . . . Colombia@
 . . . Congo, Democr. Republic of@
 . . . Costa Rica@
 . . . Croatia@
 . . . Cuba@
 . . . Cyprus@
 . . . Czech Republic@
 . . . Côte d'Ivoire@
 . . . Denmark@
 . . . Dominican Republic@
 . . . Ecuador@
 . . . Egypt@
 . . . El Salvador@
 . . . Estonia@
 . . . Federal Republic of
 Yugoslavia@
 . . . Fiji@
 . . . Finland@
 . . . France@
 . . . Germany@
 . . . Ghana@
 . . . Greece@
 . . . Grenada@
 . . . Guatemala@
 . . . Haiti@
 . . . Honduras@
 . . . Hungary@
 . . . Iceland@
 . . . India@
 . . . Indonesia@
 . . . Iran@
 . . . Iraq@
 . . . Ireland@
 . . . Israel@
 . . . Italy@
 . . . Jamaica@
 . . . Japan@
 . . . Jordan@
 . . . Kenya@
 . . . Korea, South@
 . . . Kuwait@
 . . . Latvia@
 . . . Lebanon@
 . . . Liechtenstein@
 . . . Lithuania@
 . . . Luxembourg@
 . . . Macedonia, Former Yugoslav @
 . . . Malaysia@

. . . Malta@
 . . . Marshall Islands@
 . . . Mexico@
 . . . Micronesia, Fed. States of@
 . . . Monaco@
 . . . Morocco@
 . . . Myanmar@
 . . . Nepal@
 . . . Netherlands@
 . . . New Zealand@
 . . . Nicaragua@
 . . . Norway@
 . . . Pakistan@
 . . . Panama@
 . . . Papua New Guinea@
 . . . Paraguay@
 . . . Peru@
 . . . Philippines@
 . . . Poland@
 . . . Portugal@
 . . . Romania@
 . . . Russia@
 . . . Saint Vincent and The
 Grenadines@
 . . . Saudi Arabia@
 . . . Singapore@
 . . . Slovakia@
 . . . Slovenia@
 . . . South Africa@
 . . . Spain@
 . . . Sri Lanka@
 . . . Sudan@
 . . . Sweden@
 . . . Switzerland@
 . . . Taiwan@
 . . . Thailand@
 . . . Tonga@
 . . . Trinidad and Tobago@
 . . . Tunisia@
 . . . Turkey@
 . . . Uganda@
 . . . Ukraine@
 . . . United Arab Emirates@
 . . . United Kingdom@
 . . . Uruguay@
 . . . Venezuela@
 . . . Vietnam@
 . . . Zambia@
 . . . Zimbabwe@
 . . . U.S. States (51)
 . . **By Culture or Group** (396)
 . . African American (17)
 . . African American Studies@
 . . . History@
 Amistad@
 Black History Month (18)
 Buffalo Soldiers (14)

. . . . Civil Rights Movement@
 Civil War Units (4)
 Genealogy (15)
 Harlem Renaissance@
 Juneteenth@
 Lynching@
 Museums & Memorials (13)
 People@
 Science and Technology (4)
 Slavery@
 Sports@
 Timelines (3)
 Web Directories (3)
 Institutes (31)
 Journals (2)
 Libraries (2)
 Literature@
 Theorists and Critics (7)
 . . Historically Black Colleges &
 Universities@
 . . Lesbian, Gay, and Bisexual (207)
 . . Migrant (9)
 . . Native American (44)
 . . Religious@
 . . Rural (11)
 . . Seniors (8)
 . . U.S. Hispanic and Latino (9)
 . . Women (90)
 . **By Subject** (11)
 . . Art@
 . . . Art History@
 Art Historians@
 College and University
 Departments (75)
 Courses (3)
 . . . Art Schools (126)
 . . . College and University (253)
 . . . Companies@
 . . . Courses (12)
 . . . Design Arts@
 . . . Humanities@
 . . . K-12 (88)
 . . . Non-Degree Programs (47)
 . . . Organizations (31)
 . . . Performing Arts@
 . . . Teaching (6)
 . . . Workshops (46)
 . . Business@
 . . Environment and Nature@
 . . Health@
 . . Humanities@
 . . Languages@
 . . Mathematics@
 . . Music@
 . . News and Media@
 . . Science@
 . . Social Science@.

Education

. Academic Competitions (77)

- . . . College and University (32)
- College Bowl (13)
- Teams (11)
- Debate@
- Teams (16)
- . . . Companies@
- . . . Forensics@
- . . . K-12 (39)
- . . . Teams (2)
- . **Adult & Continuing Education**
- . . Career Specific Training@
- . . . Apparel@
- . . . Auctioneering@
- ▶Automotive@
- ▶Aviation@
- Bartending@
- ▶Bicycle Mechanic Schools@
- Biomedical@
- Bootmaking@
- Brewing@
- Broadcasting@
- Building Inspection Services@
- Clock and Watch Repair@
- Commercial Diving@
- Computer@
- Construction@
- Cosmetology@
- Culinary@
- Customer Service@
- Dog Grooming@
- •Education@
- Electronics@
- Emergency Services@
- Engineering@
- Environment@
- Facilities Management@
- Financial Services@
- Fitness@
- Floral Design@
- Funeral Service@
- Gambling@
- Gunsmithing@
- Health Care@
- Hospitality Industry@
- Human Resources@
- Interior Design@
- Investigative Services@
- Jewelry and Gemstones@
- Law@
- Makeup Artist Training@
- Manufacturing@
- Museums@
- Music Production@
- Neuro-Linguistic Programm@

- . . . Real Estate@
- . . . Religious@
- . . . Security and Law Enforcement@
- ▶Travel@
- ▶Truck Driving@
- Welding@
- Writing and Editing@
- . . . Chautauqua Movement (6)
- . . . Companies@
- . . . Distance Learning@
- . . . GED@
- . . . Institutes (203)
- . . . Literacy (66)
- . . . Media Education@
- . . . Organizations (27)
- . . . Publications (2)
- . . . Special Education (4)
- . **Bibliographies** (4)
- . . Character Education@
- . **Bilingual** (24)
- . . English as a Second Language@
- . . . Bilingual Education@
- Bilingual Education@
- . . . Chats and Forums (9)
- . . . College and University Departments (84)
- . . . Commercial Products@
- . . . Conferences (1)
- . . . IELTS (5)
- . . . Language Schools (143)
- . . . Lessons & Tutorials Online (45)
- . . . Magazines (8)
- . . . Organizations (2)
- . . . Student Projects (9)
- . . . Teaching (52)
- . . . TOEFL (1)
- . . . TOEIC (1)
- . . . Web Directories (15)
- . **Career and Vocational** (232)
- . . Career Planning (127)
- . . Career Specific Training@
- . . Institutes (11)
- . . Occupational Standards (11)
- . . Organizations (28)
- . . School to Work (27)
- . . Schools (23)
- . **Chats and Forums** (40)
- . . Chat (4)
- . . •Educational MOOs@
- . . Mailing Lists (7)
- . . Message Boards (7)
- . . Usenet (16)
- . **Companies@**
- . . Admissions (74)
- . . Athletic Recruiting@
- . . Business to Business@
- . . Career Training@

- . . Counseling (12)
- . . Financial Aid (79)
- . . Home Schooling (52)
- . . International (19)
- . . Internet Services (1)
- . . Learning Centers (9)
- . . School Reports (3)
- . . School Supplies (17)
- . . Teaching & Learning Aids@
- . . Test Preparation (169)
- . . Tour Operators@
- . . Tutoring (40)
- . **Conferences** (52)
- . . Distance Learning (2)
- . . Home Schooling@
- . . Instructional Technology@
- . . K-12@
- . . Languages@
- . . Math Education@
- . . Past Conferences (20)
- . . Science Education@
- . **Correctional@**
- . . Organizations (1)
- . . Regional Agencies (8)
- . **Disabilities@**
- . . Blindness@
- . . College Support & Resources (31)
- . . Deafness@
- . . Disability Studies@
- . . Organizations (8)
- . . Special Education@
- . **Distance Learning** (462)
- . . Adult & Continuing Education
- . . Colleges and Universities (245)
- . . Conferences@
- . . Courses About (2)
- . . Courses Online (11)
- . . K-12 (63)
- . . Language Schools@
- . . Online Teaching and Learning@
- . . Teacher Education (11)
- . . Telementoring@
- . . Television (22)
- . . Vocational Schools (15)
- . . Web Directories (11)
- . **Early Childhood Education** (84)
- . . Child Care@
- . . Institutes (9)
- . . Organizations (33)
- . . Schools (7)
- . . Teaching (11)
- . **Employment** (138)
- . . English as a Second Language@
- . . Individual Resumes (66)
- . . Jobs (69)
- . . Recruiting and Placement@
- . . Unions@

Education**. Higher Education**

- . . . College Entrance
- Test Preparation Companies@
- Career Fields (79)
- Finance (29)
- CFA (11)
- CPA (8)
- EA (1)
- Insurance (2)
- NASD (3)
- Health (18)
- Medicine (11)
- Boards (6)
- USMLE (5)
- Mental Health (1)
- Nursing@
- Law (6)
- Bar Examination (6)
- Military (1)
- Social Work (2)
- College Entrance (26)
- AP (2)
- SAT (13)
- SAT II (1)
- Software (3)
- GED (5)
- Graduate School Entrance (25)
- GMAT (4)
- GRE (3)
- LSAT (4)
- MCAT (4)
- Online Subscription Serv. (7)
- Software (10)
- College Entrance@
- TOEFL (7)
- Videos (2)
- Web Directories (4)
- . . . **Colleges and Universities** (16861)
- By Region (15221)
- SN A long list as above
- Argentina@
- Armenia@
-
- . . . **Distance Learning@**
- Business@
- Graduate Programs@
- Community Colleges (20)
- Consortia (10)
- Credit for Prior Experience (6)
- Engineering@
- Graduate Programs (9)
- Graduate Programs (24)
- Business@
- Engineering@
- Web Directories (2)

. . Graduate Education (74)

- By Subject (49)
- Accounting and Auditing@
- American (United States) Studies@
- Archaeology@
- Arts@
- Asian Studies@
- Business Schools@
- Classics@
- Comparative Literature@
- Conflict Resolution@
- Cultural Studies@
- Economics@
- European Studies@
- Film@
- Finance@
- First Nations Studies (Canada)@
- Gender Studies@
- History@
- History & Philosophy of Science@
- Human Ecology@
- International Relations@
- Irish Studies@
- Japan Studies@
- Journalism@
- Latin American Studies@
- Law Schools@
- Library & Information Science@
- Literature@
- Marine Archaeology@
- Mathematics@
- Medical Schools@
- Mexican American Studies@
- Middle East Studies@
- Peace and Conflict Studies@
- Philosophy@
- Physics@
- Political Economy@
- Political Science@
- Psychology@
- Public Administration@
- Public Policy@
- Recreation and Leisure Studies@
- Rhetoric@
- Russian & East European Studies@
- Scandinavian Studies@
- Science, Technology, & Society Studies@
- Sexology@
- Slavic Studies@
- Social Work@

- Women's Studies@
- Distance Learning@
- Business@
- Engineering@
- Electronic Theses & Dissertations (ETDs)@
- Graduate Record Exam@
- Organizations (6)
- Rankings@
- Law School
- Web Directories (7)
- . . . **Guidance** (64)
- Academic Advising (2)
- College Entrance@
- Admissions Offices (299)
- Books@
- Business Schools@
- Companies@
- Educational Standards & Testing@
- Financial Aid@
- Online Applications (83)
- School Rankings (12)
- Test Preparation Companies@
- Web Directories (4)
- Medical School (34)
- MCAT@
- Companies@
- Medical Schools@
- MCAT@
- Medical Schools@
- Admissions & Guidance@
- MCAT@
- Medical Schools@
- Student Organizations@
- Web Directories (2)
- Caribbean Med. Schools (8)
- Dental Schools@
- Orthodontic@
- Student Organizations@
- Interns and Residents (3)
- Optometry@
- Web Directories (2)
- Student Organizations@
- Web Directories (2)
- . . . Honors Programs (46)
- . . . **News and Media@**
- Individual Schools (419)
- SN Long list of countries and US states
- Australia@
- Canada@
-
- Alabama (4)
- Arizona (3)
-
- Magazines (174)

- Individual Schools (139)
- Alumni (40)
- Humor@
- Literary (52)
- . . . Newspapers (436)
- Business Schools (8)
- Medical Schools (2)
- Newswires@
- Web Directories (2)
- . . . Radio Stations@
- Countries (13)
- Australia@
- Belgium@
- Cities@
- Provinces@
- Complete List@
- Brazil@
- Canada@
- Denmark@
- Ireland@
- New Zealand@
- Singapore@
- South Africa@
- Sweden@
- Switzerland@
- United Kingdom@
- Vietnam@
- Eastern United States (168)
- Internet Broadcasts@
- Western United States (110)
- . . Organizations (96)
- . . . Alumnae/I Associations@
- . . . Community College (9)
- . . . Graduate Education@
- . . . Transfer Student (3)
- . . Policy Research Centers@
- . . Seminaries@
- . . . Christian@
- . . . Jewish@
- . . Student Life (25)
- . . . Books@
- . . . Classifieds@
- . . . Organizations@
- . . Web Directories (14)
- . . . College Entrance@
- . . . Colleges and Universities@
- . . . Graduate Programs@
- . **Instructional Technology** (327)
- . . Conferences (23)
- . . . Online Teaching and Learning@
- . . . Past Events (2)
- . . Institutes (47)
- . . . College & University Departments (34)
- . . Journals (9)
- . . Online Teaching & Learning (167)
- . . . Conferences (8)

- . . . Corporate Programs (10)
- . . . Courses (9)
- . . . Educational MOOs (7)
- . . . Magazines (3)
- . . . Organizations (14)
- . . . Papers (4)
- Telementoring@
- . . . Projects (20)
- Higher Education (4)
- Regional (4)
- Virtual Field Trips@
- . . . Research Institutes (3)
- . . . Teacher Resources (43)
- Companies@
- Email (2)
- English as a 2nd Language@
- Mathematics@
- Science@
- Social Studies@
- . . . Telementoring (12)
- . . . Papers (2)
- . . . Web Directories (1)
- . . . Web Directories (8)
- . . . Telementoring@
- . . WebQuests (19)
- . . Collections (8)
- . . Science@
- . . Social Studies@
- . . School Technology Funding@
- . . Organizations (7)
- . . Programs (5)
- . . Software Reviews@
- . . Titles (64)
- . . . College Preparatory (6)
- . . . Math@
- . . . Reading (23)
- Reader Rabbit (7)
- . . Web Directories (6)
- . **Journals** (33)
- . . •Educational Theory@
- . . Instructional Technology@
- . . Music@
- . **K-12** (52293)
- . . **By Region** (27417)
- . . . Countries (7635)
- . . . Regions (9)
- . . . U.S. States (19773)
- . . **Academic Competitions@**
- . . . Debate@
- . . . Clubs, Teams, & Societies (25)
- Lincoln-Douglas@
- Institutes (2)
- Policy Debate (7)
- 1998-99 Debate Topic (3)
- 1999-2000 Debate Topic (1)
- . . . History@
- . . . Mathematics@

- International (6)
- . . . Science@
- International (4)
- Mathematics@
- Mathematics@
- International (6)
- Projects and Ideas (20)
- Science Project Books@
- Web Directories (2)
- . . . Teams (13)
- Debate@
- Lincoln-Douglas@
- Forensics@
- . . Arts@
- . . Curriculum Standards (27)
- . . . Dance@
- . . . Drama@
- . . . Lesson Plan (4)
- . . . School Departments (10)
- . . Lesson Plans (17)
- . . . Theater@
- . . Schools (35)
- . . Departments (5)
- . . Usenet (2)
- . . Conferences (10)
- . . **Countries** (41)
- . . . Australia@
- . . . Belgium@
- . . . Brazil@
- . . . Canada@
- . . . Chile@
- . . . China@
- . . . Columbia@
- . . . Costa Rica@
- . . . Cyprus@
- . . . Denmark@
- . . . Egypt@
- . . . Estonia@
- . . . Ethiopia@
- . . . France@
- . . . Germany@
- . . . Ghana@
- . . . Greece@
- . . . Hong Kong@
- . . . India@
- . . . Ireland@
- . . . Israel@
- . . . Italy@
- . . . Japan@
- . . . Korea, South@
- . . . Macau@
- . . . Malaysia@
- . . . Malta@
- . . . Mexico@
- . . . Netherlands@
- . . . New Zealand@
- . . .

Education**K-12****Curriculum Standards (65)**

- . . . By Region (52)
- Canadian Provinces (8)
- U. S. States (44)
- . . . By Subject (13)
- Agriculture@
- Arts@
- Business@
- Dance@
- English Language Arts@
- Family and Consumer Sciences@
- Health@
- History@
- Languages@
- Library and Information Literacy@
- Mathematics@
- Music@
- Physical Education@
- Science@
- Social Studies@
- . . Distance Learning@
- . . Home Schooling@
- Christian@
- . . Environment and Nature@
- . . . Programs (18)
- . . Gifted Youth (65)
- . . . Schools (14)
- . . Guidance Counseling (17)
- . . . K-12 Offices (7)
- . . . Organizations (3)
- . . **Home Schooling@**
- . . . Christian@
- Companies@
- Publishers@
- Teaching & Learning Aids
- Curriculum (17)
- Used (3)
- Distance Learning (11)
- Organizations (10)
- Usenet (2)
- Companies@
- Administrative Software@
- Books@
- Christian Home Schooling (36)
- Publishers@
- Teaching & Learning Aids
- SN This is its own category under Christian Home Schooling
- Curriculum (17)
- Used (3)
- Publishers@

- Christian (9)
- Teaching & Learning Aids@
- SN This is a reference to the generic Teaching & Learning Aids (see above), not restricted to K-12, much less to Home Schooling
- . . . Conferences (2)
- . . . Curriculum (1)
- . . . Distance Learning (8)
- . . . Islamic@
- . . . Magazines (10)
- . . . Opposing Views (1)
- . . . Organizations (37)
- Christian@
- . . . Personal Experience (7)
- . . . Unschooling (6)
- . . . Web Directories (11)
- . . . Usenet (2)
- . . **Humanities@**
- . . . Classics@
- Organizations (15)
- Student (15)
- Teacher Resources (2)
- . . . History@
- Courses (15)
- Curriculum Standards (5)
- Fairs and Competitions (3)
- Social Studies@
- Archaeology@
- Companies@
- Presenters (4)
- Professional Development
- Teaching & Learning Aids
- Curriculum Standards (25)
- History@
- Lesson Plans (31)
- History@
- WebQuests (14)
- Organizations (13)
- Web Directories (6)
- Teacher Resources (25)
- Classroom Projects (5)
- Lesson Plans (13)
- . . . Literature@
- Courses (4)
- Reading@
- Children's Reading Lists@
- Young Adult@
- Companies@
- Professional Development
- Teaching & Learning Aids
- Lesson Plans (8)
- Literacy (37)
- Organizations (16)
- Organizations (5)
- Whole Language (3)

- Young Adult Reading Lists@
- Teacher Resources (40)
- Classroom Projects (2)
- Lesson Plans (27)
- . . . Philosophy@
- . . Institutes (7)
- . . **Issues (31)**
- . . . Bullying@
- . . . Class Size@
- . . . Religion in Public Schools (24)
- . . . School Prayer (16)
- . . . School Choice@
- . . . School Phobia@
- . . . Shyness@
- . . . School Violence@
- Organizations (10)
- School Shootings (80)
- . . **Mathematics@**
- . . . Academic Competitions (22)
- . . . Courses (1)
- Statistics@
- . . . Curriculum Standards (38)
- . . . Exercises@
- . . . Algebra@
- . . . Geometry@
- . . . Online Equation Solvers (11)
- Online Cryptarithmic & Alphametic Puzzle Solvers@
- . . . Pre-Algebra@
- . . . Organizations (6)
- . . . Programs (26)
- . . . Magnet Schools@
- . . . Summer (7)
- . . . School Departments (8)
- . . . Teaching (32)
- . . . Lesson Plans (12)
- . . Newspapers (142)
- . . Individual School Papers (130)
- . . **Organizations (202)**
- . . . Administrators@
- . . . Alternative (7)
- . . . Alumnae/I Associations@
- . . . Reunions@
- Alumnae/I Associations@
- . . . Business@
- . . . Charter School@
- . . . Computer Clubs@
- . . . Home Schooling@
- . . . International Schools@
- . . . Lesbian, Gay, and Bisexual@
- . . . Parent@
- . . . Reading@
- Literacy@
- . . . School Associations (24)
- . . . School Board Associations (13)
- . . . School Funding@
- . . . Social Studies@

- . . . Violent Crime Prevention@
- . . Parental Involvement@
- . . Physical Education@
- . . Programs (124)
- . . Reading (66)
- . . Religion@
- . . School Funding (29)
- . . Schools (23726)
- . . Science@
- . . Social Science@
- . . Social Studies (111)
- . . Student Resources (30)
- . . Teaching (153)
- . . Teaching & Learning Aids@
- . . Web Directories (23)
- . . Usenet (22)
- . **Literacy** (12)
- . . Adult & Continuing Education@
- . . K-12@
- . . Media Literacy@
 - SN Following various branches of the hierarchy
- . . . Culture Jammers@
- Anarchism@
- Magazines (7)
- United Kingdom@
- United States@
- Political Theory@
- History (11)
- Spanish Civil War@
- Libraries (6)
- Organizations@
- People (28)
- Situationists@
- Bakunin, Mikhail Aleksandrovich (1814-1876)@
- Bookchin, Murray (1921-) (5)
- Chomsky, Noam@
- Durruti, Buenaventura (1896-1936)@
- Godwin, William (1756-1836) (3)
- Goldman, Emma (1869-1940)@
- Kropotkin, Peter (1842 - 1921) (4)
- Makhno, Nestor (1889-1934)@
- Malatesta, Errico (1853-1932) (2)
- Michel, Louise (1830-1905)@
- Parsons, Lucy (1853-1942) (3)
- Prominent Anarchists & Left-Libertarians -
- Proudhon, Pierre-Joseph (1809-1865) (2)
- Stirner, Max (1806-1856)@
- Political Opinion@
- Web Directories (3)
- Publishers@
- Anti-Television@
- Cacophonists@
- Guerilla Art@
- Billboard Liberation (3)
- Culture Jammers@
- Graffiti@
- Anti-Graffiti (6)
- Companies@
- Exhibits (77)
- Magazines (11)
- Virtual Graffiti (4)
- Writers and Crews (38)
- Postering (6)
- . . . Youth Audience Issues (10)
- . . . Television Ratings@
- . . Organizations (9)
- . **News and Media** (84)
- . . Books@
- . . Retail@
- . . Publishers@
- . . Academic@
- . . College & Univ. Presses@
- . . Textbooks@
- . . Booksellers@
- . . Home Schooling Materials (21)
- . . . Christian (9)
- . . . Language Education@
- . . . English as a 2nd Language
- . . . Special Education Books (9)
- . . . Supplementary Materials (91)
- . . . Forensics and Debate (5)
- . . . Teacher Aids (12)
- . . . Textbooks (88)
- . . . Vocational Training Books
- . . . Textbooks (43)
- . . . Higher Education (53)
- . . . K-12 (17)
- . . . Titles (98)
- . . Textbooks (8)
- . . College & University Bookstores@
- . . Science@
- . . Used (19)
- . . Titles@
- . . Administration (2)
- . . College and University (26)
- . . Admissions (10)
- . . . Athletic Recruiting@
- . . . Financial Aid (6)
- . . . University Life (4)
- . . . Distance Learning (3)
- . . . Educating Your Child@
- . . . Home Schooling (8)
- . . . Reform (3)
- . . . School Directories (4)
- . . . Study Guides (7)
- . . . Teaching (21)
- . . . Reading (9)
- . . . Test Preparation (13)
- . . College and University@
- . . Individual Schools (410)
- . . Magazines (175)
- . . Individual Schools (139)
- . . Newspapers (437)
- . . Business Schools (8)
- . . Medical Schools (2)
- . . Newswires@
- . . Web Directories (2)
- . . Radio Stations@
- . . Countries (12)
- . . Eastern United States (169)
- . . Internet Broadcasts@
- . . Western United States (110)
- . . Journals@
- . . •Educational Theory@
- . . Instructional Technology@
- . . Music@
- . . Musicology@
- . . Ethnomusicology@
- . . Magazines (50)
- . . College and University@
- . . Individual Schools (139)
- . . English as a Second Language@
- . . Home Schooling@
- . . Online Teaching and Learning@
- . . Newsletters (12)
- . . Newspapers (3)
- . . College and University@
- . . Business Schools (8)
- . . Medical Schools (2)
- . . Newswires@
- . . Web Directories (2)
- . . K-12@
- . . Individual School Papers (130)
- . . Policy@
- . . Television@
- . . Distance Learning@
- . . Educational Programs@
- . . Television Curriculum (5)
- . . High School Stations@
- . . Shows@

•Education

• Organizations (2945)

- . . . Alumnae/I Associations (459)
- . . . Colleges and Universities (207)
- . . . High Schools (239)
- Reunions@
- Reunions@
- College and University (8)
- High Schools (274)
- . . . Arts@
- . . . College and University@
- . . . Business@
- . . . Case Research (4)
- . . . College and University@
- . . . K-12@
- . . . Christian@
- . . . Catholic@
- . . . Home Schooling@
- . . . Student (171)
- Baptist@
- Catholic@
- Church of Christ@
- Fraternities and Sororities (20)
- Presbyterian@
- Presbyterian Church in America@
- United Methodist Church@
- . . . Early Childhood Education@
- . . . Equity@
- . . . Financial Aid@
- . . . **Higher Education@**
- . . . Alumnae/I Associations@
- . . . Community College (9)
- . . . Graduate Education@
- . . . Transfer Student (3)
- . . . **K-12@**
- . . . Administrators@
- . . . Alternative (7)
- . . . Alumnae/I Associations@
- . . . Business@
- . . . Charter School@
- . . . Computer Clubs@
- . . . Home Schooling@
- Christian@
- . . . International Schools@
- . . . Lesbian, Gay, and Bisexual@
- . . . Parent@
- . . . Reading@
- Literacy@
- . . . School Associations (24)
- . . . School Board Associations (13)
- . . . School Funding@
- Technology Funding@
- . . . Social Studies@
- . . . Violent Crime Prevention@
- . . . Languages@

- . . . English as a Second Language@
- Student (1)
- Teaching@
- . . . Lesbian, Gay and Bisexual@
- . . . Literacy@
- . . . Math@
- . . . Music@
- . . . Teaching@
- Kodaly Method@
- . . . Online Teaching and Learning@
- . . . Policy@
- . . . Professional (197)
- . . . Administrators (23)
- . . . Consultants (2)
- . . . Faculty (19)
- . . . Unions (77)
- . . . Reading (8)
- . . . Reform@
- . . . Rural Education@
- . . . Science@
- . . . Engineering@
- . . . Student (2131)
- . . . Animal Rights@
- . . . Anthropology@
- . . . Architecture@
- . . . Community Service@
- . . . Computer Science@
- . . . Cultural (361)
- African (2)
- African-American@
- Arabic (5)
- Armenian (8)
- Asian American (23)
- Azerbaijani (1)
- Bangladesh (4)
- Bosnian (2)
- Brazilian (2)
- Cambodian (1)
- Caribbean (3)
- Chinese (23)
- Cypriot (2)
- Egyptian (2)
- Filipino (6)
- Finnish (1)
- Haitian (2)
- Hawaiian (3)
- Hellenic (27)
- Hispanic and Latino (32)
- Law@
- Indian (21)
- Indonesian (14)
- Italian (3)
- Japanese (2)
- Korean (24)
- Lebanese (3)
- Malaysian (16)
- Mexican (3)

- Multicultural (7)
- Native American@
- Pakistani (9)
- Romanian (8)
- Scandinavian (1)
- Singaporean (29)
- Sri Lankan (2)
- Taiwanese (12)
- Thai (21)
- Turkish (12)
- Vietnamese (22)
- . . . Economics@
- Accounting and Auditing@
- . . . Engineering@
- Materials Science@
- Mechanical Engineering@
- . . . Environmental@
- . . . European Union@
- Austria@
- Germany@
- Government (1)
- Netherlands@
- . . . Fraternities and Sororities (1443)
- Apparel@
- Christian@
- Collectibles@
- Directories (4)
- Hazing (2)
- Professional (128)
- Music@
- Service (138)
- Social (1154)
- Interfraternity Councils (14)
- Usenet (3)
- . . . Government (90)
- . . . Graduate (13)
- . . . High School (4)
- . . . Homelessness@
- . . . Honor Societies (74)
- . . . Law@
- Hispanic and Latino (7)
- Pre-Law Societies (2)
- Women@
- . . . Lesbian, Gay, and Bisexual@
- Alumni Associations (9)
- Campus Support Offices@
- . . . Medical@
- Interns and Residents (3)
- Optometry@
- . . . Nursing@
- . . . Political (24)
- Democratic Party@
- Federalist Society@
- Libertarian Party@
- Reform Party@
- Republican Party@
- Young Americans for Freedom

- . . . Religious (5)
 - Christian@
 - Hindu@
 - Islamic@
 - Jewish@
 - Sikh@
- . . . Residence Hall Associations (9)
- . . . Web Directories (2)
- . . Student Affairs (15)
 - . . . Web Directories (1)
- . . Trade Associations (3)
- . . Vocational Education@
 - . . . Private Industry Councils@
 - . . . Training & Enterprise Councils@
- . . Women@
 - . . . Law@
- . **Policy** (52)
 - . . College & Univ. Dpts & Programs
 - . . News and Media (3)
 - . . Organizations (6)
 - . . Research Centers (23)
 - . . . Higher Education (6)
- . **Programs** (309)
 - . . Co-operative Programs (8)
 - . . K-12@
 - . . . Environment and Nature@
 - . . . National Guard Youth Challenge Program@
 - STARBASE (3)
 - Student Exchange@
 - Study Abroad@
 - Companies@
 - Student Exchange@
 - Admissions@
 - Counseling@
 - Credential Evaluation (8)
 - Financial Aid@
 - . . . Summer Programs (56)
 - Learning Disabilities@
 - Math@
 - Science (22)
 - Math@
 - . . . Model Congress@
 - . . . Model United Nations@
 - . . . College and University (35)
 - Events (12)
 - Events (2)
 - College and University@
 - High School@
 - High School (33)
 - Events (16)
 - . . . National Writing Project (27)
 - . . Student Exchange (78)
 - . . Study Abroad (157)
 - . . Summer Programs (18)
 - . . K-12

- . **Reform** (67)
 - . . Books@
 - . . Class Size (6)
 - . . Organizations (35)
 - . . School Choice (9)
- . **Special Education** (167)
 - . . Companies@
 - . . . Administrative Software@
 - . . . Teaching & Learning Aids (5)
 - Publishers@
 - . . Conductive Education (19)
 - . . . Organizations (4)
 - . . . Schools and Institutes (14)
 - Employment@
 - Inclusion (7)
 - Institutes (29)
 - College and Univ. Departments
 - Conductive Education
 - Learning Disabilities@
 - Attention Deficit Disorder@
 - Companies@
 - Conferences (1)
 - Organizations (8)
 - Web Directories (2)
 - Companies@
 - Attention Deficit Disorder@
 - Dyslexia@
 - Dyslexia@
 - Organizations (12)
 - Shopping and Services@
 - Dysphagia@
 - Dyspraxia@
 - . . . Gifted & Learning Disabled (16)
 - Institutes@
 - College & Univ. Departments
 - Conductive Education@
 - Organizations (20)
 - Dyslexia@
 - Schools (31)
 - K-12@
 - Summer Programs (3)
 - U.S. Boarding Schools (9)
 - Organizations (18)
 - Conductive Education@
 - . . . Schools (69)
 - Adult & Continuing Education@
 - Colleges and Universities (3)
 - Conductive Education@
 - Early Education (16)
 - Schools for the Blind@
 - Schools for the Deaf@
 - K-12 (46)
 - Learning Disabilities
 - Schools for the Blind@
 - Schools for the Deaf@
 - Schools for the Blind@
 - Schools for the Deaf@

- . . Web Directories (3)
- . . Usenet
- . **Standards and Testing** (63)
 - . . ACT (1)
 - . . GED (2)
 - . . . GED Preparation Companies@
 - . . GMAT (3)
 - . . GRE (3)
 - . . IELTS@
 - . . . K-12 Curriculum Standards@
 - By Region (55)
 - By Subject (14)
 - Agriculture@
 - Arts@
 - Business@
 - Dance@
 - English Language Arts@
 - Health@
 - History@
 - Languages@
 - Library & Information Literacy@
 - Mathematics@
 - Music@
 - Physical Education@
 - Science@
 - Social Studies@
 - . . LSAT (4)
 - . . MCAT (5)
 - . . . Comapnies@
 - . . Occupational Standards@
 - . . . Australian Qualific Framework@
 - . . . U.K. Natl Vocational Qualific.@
 - . . . U.S. National Skill Standards (5)
 - . . SSAT (1)
 - . . Test Preparation Companies@
 - . . Testing Companies@
 - . . . Computer-Based Testing Serv. Software@
 - . . TOEFL@
 - . . TOEIC@
 - . . Voluntary National Testing (4)
 - . **Statistics** (6)
 - . **Teaching** (91)
 - . . Arts@
 - . . **Curriculum** (9)
 - . . . Companies@
 - By Subject (9)
 - Art@
 - Computers and Technology@
 - Health and Fitness@
 - Languages@
 - Life Skills@
 - Mathematics@
 - Reading and Writing@
 - Science@
 - Social Studies@

•Education. **Teaching** (91)

- . . . *Arts@*
- . . . *Curriculum* (9)
- . . . *Companies@*
- Christian Home Schooling@
- Preschool (9)
- School Reform (2)
- Textbooks@
- Retail
- Used (3)
- . . . Home Schooling@
- . . . K-12 Lesson Plans@
- *Arts@*
- *History@*
- *Literature@*
- *Math@*
- News and Current Events (5)
- *Reading@*
- *Science@*
- *Social Studies@*
- *Television Curriculum@*
- *Theater@*
- *WebQuests@*
- *Writing@*
- . . Early Childhood Education@
- . . *English@*
- . . . English as a Second Language@
- . . Evaluation (4)
- . . Forums (3)
- . . International Teaching (7)
- . . . English as a Second Language@
- . . . International Schools@
- . . *Internet@*
- . . . *Comapnies@*
- . . **K-12@**
- . . . Lesson Plans (51)
- *Arts@*
- *Theater@*
- *History@*
- *Literature@*
- *Math@*
- News and Current Events (5)
- *Reading@*
- *Science@*
- *Social Studies@*
- History
- *Webquests* (15)
- *Television Curriculum@*
- *Theater@*
- *WebQuests@*
- Collections (8)
- *Science@*
- *Social Studies@*
- *Writing@*
- . . . School Library Resources@

- Children's Literature@
- Young Adult Literature@
- Substitute Teaching (6)
- Teacher Certification (53)
- U. S. States (50)
- Web Directories (24)
- . . *Math@*
- . . . Organizations (7)
- . . . Professional Development Services (@)
- . . *Music@*
- . . . Organizations (40)
- . . . Web Directories (3)
- . . Online Teaching and Learning@
- Conferences (8)
- Corporate Programs (10)
- Courses (10)
- Educational MOOs (7)
- Magazines (3)
- Organizations (14)
- Papers (4)
- Projects (20)
- Research Institutes (3)
- Teacher Resources (45)
- Telementoring (12)
- Web Directories (8)
- *WebQuests* (19)
- . . *Science@*
- . . . *Science@*
- . . . *Biology@*
- Lesson Plans (32)
- *WebQuests* (9)
- *Space@*
- . . Teacher Education (24)
- . . . College & Univ. Departments@
- . . . Distance Learning@
- . . . Montessori Method@
- . . . Professional Development Services@
- . . . Teacher Certification@
- . . . College & University Departments@
- . . . Distance Learning@
- . . . Montessori Method@
- . . . Professional Dev. Serv.@
- . . . Teacher Certification@
- . **Theory and Methods** (644)
- . . Block Scheduling (6)
- . . Character Education (18)
- . . Articles and Papers (4)
- . . Bibliographies (3)
- . . *Companies@*
- . . Institutes (1)
- . . Charter Schools (15)
- . . Organizations@
- . . Critical Thinking@
- . . . *Logic@*

- . . Experiential Education (4)
- . . Feminist Pedagogy (6)
- . . Home Schooling (113)
- . . Institutes (240)
- . . . College & Univ. Departments
- . . . Early Childhood Education@
- . . . K-12@
- . . Journals (6)
- . . Libraries (24)
- . . Montessori Method (146)
- . . . Schools
- . . . Teacher Education
- . . Multiple Intelligences@
- . . Service Learning (10)
- . . Theorists (12)
- . . . Dewey, John@
- . . . Freire, Paulo (8)
- . . . Montessori, Maria (2)
- . . . Steiner, Rudolf@
- . . Waldorf Method (50)
- . . . *Schools@*
- . . *WebQuests@*
- . **Web Directories** (45)

Entertainment

SN Cool Links, Movies, Humor, Music ...

. **Consumer Electronics**

- . . Audio
- . . . MP3 Players
- ▶Automotive (9)
- . **Humor** (4865)
- . . ▶Cars (40)
- . . •Education (43)
- . . ▶Traffic Cones (2)
- . **Music**
- . . •Education
- . . . By Instrument (3)
- . . . Camps (29)
- . . . Conferences (4)
- . . . Courses and Lessons (8)
- . . . Ear Training (5)
- . . . Festivals (9)
- . . . *Jazz@*
- . . . Journals (2)
- . . . K-12 Curriculum Standards (6)
- . . . Kodály Method (18)
- . . . Organizations (17)
- . . . Schools (267)
- . . . Shopping and Services@
- . . . Suzuki Method (10)
- . . . Teaching (50)
- . . . Web Directories (6)
- . . Instruments
- . . . Stringed Instruments
- Guitar
- •Education

Government

- SN Elections, Military, Law, Taxes...
- . **Law**
 - SN No narrower category Transportation
 - ... •Continuing Legal Education
 - ... Companies@
 - ... Court Reporting@
 - ... Law Schools@.
- . **Military** (867)
 - ... Weapons and Equipment (269)
 - ... ▶Aircraft@
 - ... ▶Armored Vehicles (17)
 - ... ▶Ships (9)
- . **U.S. Government**
 - ... Executive Branch
 - ... Departments and Agencies
 - ... •Department of Education
 - ... ▶Department of Transportation
 - ... Military
 - ... •Training and Education (18)
 - ... Navy
 - ... ▶Fleets and Ships (247)
 - ... ▶Submarines (83)
 - ... •Training and Education
 - ... State Government
 - ... Massachusetts@
 - ... •Department of Education
 - ... ▶Department of Transportation

Health

- SN Medicine, Diseases, Drugs, Fitness ...
- . **Alternative Medicine** (499)
 - ... Apitherapy (6)
 - ... Applied Kinesiology (8)
 - ... Aromatherapy (14)
 - ... Companies@
 - ... Organizations (3)
 - ... Ayurveda@
 - ... Companies@
 - ... Herbal Supplements@
 - ... Brand Names (8)
 - ... Products@
 - ... Biofeedback (8)
 - ... Companies@
 - ... Booksellers@
 - ... Titles (33)
 - ... Herbs (3)
 - ... Massage (3)
 - ... Yoga@
 - ... Breathwork (9)
 - ... Companies@
 - ... Holotropic (3)
 - ... Rebirthing (5)
 - ... Vivation (1)

- ... Rebirthing (6)
 - ... Companies@
- ... Business to Business
 - ... Massage Therapy (132)
 - ... Equipment and Supplies (33)
 - ... Manufacturers (14)
 - ... Training and Development (97)
 - ... Massage Therapy@
 - ... Buteyko@
 - ... Companies@
 - ... Chinese Medicine
 - ... Acupuncture (24)
 - ... Companies@
 - ... Electro-acupuncture (6)
 - ... Software@
 - ... Supplies (5)
 - ... Organizations (13)
 - ... Chinese Herbs@
 - ... Brand Names (26)
 - ... Kombucha (3)
 - ... Products@
 - ... Medical Schools (28)
 - ... Qigong (23)
 - ... Companies@
 - ... Falun Gong@
 - ... Organizations (16)
 - ... International Yan Xin Qigong Association (7)
 - ... Chiropractic@
 - ... Business to Business@
 - ... Equipment and Supplies (13)
 - ... Manufacturers (2)
 - ... Internet Services (4)
 - ... Software (6)
 - ... Journals (5)
 - ... Professional Organizations (33)
 - ... •Schools, Departments, & Programs (17)
 - ... Shopping and Services@
 - ... By Region (963)
 - SN A long list of geographical. entities
 - ... •**Education**
 - ... K-12 Curriculum Standards (24)
 - ... Medicine@
 - ... Midwifery@
 - ... Nursing@
 - ... Shopping and Services@
 - ... **Emergency Services** (476)
 - ... Companies@
 - ... ▶Air Ambulance Services (34)
 - ... Supplies and Equipment
 - ... ▶Vehicles
 - ... Ambulances
 - . **Fitness**

- ... Aerobics (9)
 - ... Jazzercise (3)
- ... Books@
 - ... Yoga@
- ... Business to Business@
 - ... •Career Training (13)
 - ... Yoga@
 - ... Equipment Distributors (2)
 - ... Equipment Manufacturers (30)
 - ... Health Club Management Software (16)
 - ... Events (6)
 - ... Health Clubs@
 - ... By Region (1060)
 - ... Directories (2)
 - ... Indoor Rowing@
 - ... Institutes (8)
 - ... Magazines (16)
 - ... Bodybuilding@
 - ... Yoga@
 - ... Organizations (36)
 - ... Professional@
 - ... •Physical Education (PE) (48)
 - ... College & Univ. Departments
 - ... K-12 (24)
 - ... Curriculum Standards (15)
 - ... Departments (1)
 - ... Organizations (2)
 - ... Organizations (2)
 - ... **Mental Health** (755)
 - ... Bereavement (56)
 - ... ▶Aircraft Accident Support (1)
 - ... **Nutrition**
 - ... Institutes (49)
 - ... •Schools, Departments, & Programs (31)
 - ... **Public Health and Safety** (2206)
 - ... ▶Driving Safety@
 - ... Helmets (4)
 - ... Injury Prevention (20)
 - SN No X-ref to Accidents.
 - ... ▶**Travel Health and Medicine** (24)
 - ... Deep Vein Thrombosis@
 - ... Jet Lag@
 - ... Motion Sickness@
 - ... Shopping and Services@
 - ... Tropical Diseases@
 - ... Cholera@
 - ... Dengue Fever@
 - ... Ebola@
 - ... Giardia@
 - ... Hepatitis@
 - ... Lassa Fever@
 - ... Leprosy@
 - ... Malaria@

News and Media

SN Full Coverage, Newspapers, TV

- . **Industry Information**
- . . Journalism
- . . . •Education
- Career and Continuing (5)
- College and University (96)
- Organizations (4)
- Web Directories (1)
- . . •Media Education
- . . . Broadcasting@
- . . . Career and Continuing (3)
- . . . College and Univ. Departments
- . . . Journalism@
- . ▶Automotive@
- . •College and University (898)
- . Traffic and Road Conditions@
- . ▶Transportation@
- . ▶Travel@

Recreation & Sports

SN Sports, Travel, Autos, Outdoors

- . ▶**Automotive**
- . . Alternative Fuel Vehicles (147)
- . . Audio (33)
- . . Auto-Free Transportation@
- . . Booksellers@
- . . British Cars (45)
- . . Bumper Stickers (4)
- . . Business to Business@
- . . Buyer's Guides (44)
- . . Car Art@
- . . Charitable Vehicle Donation (9)
- . . Chats and Forums (51)
- . . Classic Cars (145)
- . . Classifieds@
- . . Clubs and Organizations (177)
- . . Concept Cars (10)
- . . Driving (184)
- . . . •Driving Schools@
- . . Dune Buggies (16)
- . . Electric Vehicles@
- . . Emissions (21)
- . . Employment (2)
- . . Engineering@
- . . Events and Shows (58)
- . . Famous Cars (30)
- . . Financing (8)
- . . Four Wheel Drive (111)
- . . Hearses (16)
- . . History (88)
- . . Humor@
- . . Industry Information@
- . . Kit Cars (22)
- . . Lemon Law@
- . . License Plates (39)
- . . Licensing and Registr. Agencies

- . . Lowriders (63)
- . . Maintenance (13)
- . . Makes and Models (2968)
- . . Model Cars@
- . . Motorcycles (1012)
- . . . Pictures
- . . Museums@
- . . News and Media (113)
- . . Police Vehicles@
- . . Racing@
- . . Recreational Vehicles@
- . . Shopping and Services@
- . . Software (2)
- . . Special Needs@
- . . Sport Utility Vehicles (48)
- . . Station Wagons (28)
- . . Technicians (3)
- . . Theft@
- . . Travel@
- . . Trucks (49)
- . . Web Directories (16)
- . . Women (8)
- . . Wrecks (4)
- . . FAQs (3)
- . •**Dance@**
- . . •Education
- . •**Hobbies (3034)**
- . . Models (615)
- . . . ▶Aircraft (216)
- . . . ▶Armored Fighting Vehicles
- . . . ▶Boats and Yachts (57)
- . . . ▶Cars (73)
- . . . ▶Motorcycles (1)
- . . . ▶Radio-Controlled (13)
- . . . ▶Trains and Railroads (175)
- . ▶**Motorcycles@**
- . •**Sports**
- . . •College and University
- . . •Physical Education@
- . . Science
- . . . •Education
- . ▶**Travel**
- . . Air Travel
- . . . Airlines@
- United Airlines
- •Education

Reference

- SN Libraries, Dictionaries, Quotations ...
- . . Libraries
- . . . Library & Information Science
- •Education
- College and University (55)
- . . . •Education Libraries@
- . . . ▶Transportation Libraries@

Regional

SN Countries, Regions, US States

- . **U.S. States**
- . . **Massachusetts**
- . . . Massachusetts Locations
- Metropolitan Areas
- Boston Metro
- Business and Shopping
- Shopping and Services
- ▶Automotive
- •Driving Schools
- Counties and Regions
- Cities
- **Boston**
- Local Web Directory
- Business & Shopping
- Community
- •Education
- Adult, Career, & Continuing (16)
- Business to Business@
- Child Care Centers & Preschools@
- College & University
- Government Agencies
- K-12 (22)
- Language Schools (11)
- Organizations (25)
- Shopping & Services@
- Employment
- Entertainment & Arts
- Health
- News & Media
- Real Estate
- Recreation & Sports
- ▶Travel & Transportation
- Airports (4)
- Bicycle Advocacy@
- Car Rentals@
- Lesb., Gays, & Bisex.@
- Limos & Shuttles@
- Local Cruises@
- Local Guides (58)
- Lodging (71)
- Maps and Views (12)
- Mass Transit (8)
- Points of Interest (6)
- Restaurants@
- Taxi Services@
- Tour Operators@
- Traffic & Road Cond.
- Transportation Agencies
- Travel Agents@
- Travelogues (2)
- Marketplace
- Yellow Pages

| | | |
|--|---|---|
| <ul style="list-style-type: none"> ... State Web Directory ... Area Guides ... Arts & Humanities ... Business & Economy ... Community & Culture ... Computers & Internet ... •Education ... Business to Business@ ... Career and Vocational (3) ... College and University (96) ... K-12 (11) ... Organizations (6) ... Shopping and Services@ ... Employment ... Entertainment ... Government ... Health ... News & Media ... Real Estate ... Recreation & Sports ... Science ... Social Science ... ▶Travel & Transportation ... Cities@ ... Counties and Regions@ ... Complete List@ ... Airports (3) ... Car Rentals@ ... Destination Guides (13) ... Highways and Roads (5) ... Lodging (8) ... Maps and Views (4) ... Mass Transit (3) ... Transportation Agencies (2) ... Transportation Organizations ... Travel Safety (1) .. New York ... Cities ... New York ... Business and Shopping ... Shopping and Services ... ▶Automotive ... •Driving Schools *** ... •Education ... Adult, Career, & Continuing ... Business to Business@ ... Child Care Centers & Preschools@ ... College & University (633) ... Events (2) ... Government Agencies (3) ... K-12 (115) ... Language Schools (18) ... English 2nd Language ... German (2) ... Italian (1) ... Spanish (2) | <ul style="list-style-type: none"> ... Organizations (47) ... Primary and Secondary (1) ... Programs (7) ... Shopping and Services@ ... ▶Travel & Transportation .. Washington, D.C. ... •Education ... Adult, Career, & Continuing ... Business to Business@ ... Child Care Centers & Preschools@ ... College and University (427) ... Events (4) ... Government Agencies (1) ... K-12 (467) ... Language Schools (13) ... English as a 2nd Language ... French (2) ... Literacy (1) ... Organizations (98) ... Programs (3) ... Shopping and Services@ ... Special Education (13) ... ▶Travel & Transportation .. Countries .. Canada ... •Education ... Academic Competitions (8) ... Adult and Continuing Education (22) ... Bilingual (2) ... By Culture or Group (41) ... By Subject (11) ... Career and Vocational (47) ... Companies@ ... Conferences (5) ... Correctional@ ... Distance Learning (23) ... Early Childhood Education (8) ... Employment (8) ... Financial Aid (17) ... Government Agencies (12) ... Higher Education (239) ... Instructional Technology (19) ... Literacy (6) ... News and Media (9) ... Organizations (142) ... Policy (2) ... Primary and Secondary (498) ... Cities@ ... Metropolitan Areas@ ... Provinces and Territories@ ... Complete List@ ... Academic Competitions@ ... Alternative (8) ... Arts@ ... Curriculum Standards (9) | <ul style="list-style-type: none"> ... Distance Learning@ ... Environment and Nature@ ... Gifted Youth (1) ... Home Schooling@ ... Mathematics@ ... Newspapers@ ... Organizations (20) ... Parental Involvement@ ... Physical Education@ ... Programs (23) ... Reading (4) ... School Funding (3) ... Schools (373) ... Science@ ... Social Science@ ... Social Studies (7) ... Student Resources (10) ... Teaching (22) ... Teaching & Learning Aids@ ... Web Directories (2) ... Programs (34) ... Reform (1) ... Special Education (11) ... Standards and Testing (8) ... Teaching (11) ... Theory and Methods (38) ... Web Directories (5) ... ▶Travel & Transportation |
|--|---|---|

Science

- SN Animals, Astronomy, Engineering ...
- . **Engineering** (4691)
 - . . . ▶Aerospace Engineering@
 - . . . ▶Automotive Engineering (36)
 - . . . Civil Engineering (475)
 - ▶Transportation (31)
 - Companies@
 - Institutes (25)
 - ▶Tunnels@
 - •Education (304)
 - Courses (4)
 - Distance Learning (11)
 - Institutes (247)
 - Organizations (19)
 - Vocational Schools (11)
 - . . . ▶Naval Engineering (3)
- . **Mathematics**
 - . . . •Education
 - Academic Competitions (2)
 - College and University (366)
 - Companies@
 - Conferences (3)
 - Courses (4)
 - Exercises@
 - Gender Equity@
 - K-12 (149)
 - Academic Competitions (22)
 - Courses (1)
 - Curriculum Standards (40)
 - Exercises@
 - Organizations (6)
 - Programs (27)
 - School Departments (8)
 - Teaching (31)
 - Organizations (28)
 - Software@
 - Teaching (32)
 - Web Directories (3)

Social Science

- SN Archaeology, Economics, Languages ...
- . **Anthropology and Archaeology**
 - SN No narrower category
 - . . . Transportation
- . **Linguistics & Human Languages** (2814)
 - . . Languages (2235)
 - . . . •Education (266)
 - Chinese@
 - English@
 - English as a 2nd Language@
 - French@
 - German@
 - Italian@
 - Japanese@
 - Russian@
 - Spanish@
 - College and University Departments (48)
 - Commercial Products@
 - Conferences (2)
 - Courses (19)
 - K-12 (28)
 - Chinese@
 - Curriculum Standards (20)
 - English as a 2nd Language@
 - French@
 - German@
 - Magnet Schools@
 - Spanish@
 - Language Labs (7)
 - Language Schools (125)
 - Organizations (8)
 - Web Directories (9)
 - . . Specific Languages
 - Chinese
 - •Education
 - French
 - •Education
 - German
 - •Education

Society and Culture

- SN People, Environment, Religion ...
- . **Disabilities**
 - . . Assistive Technology (54)
 - . . . ▶Automotive (3)
 - Universal Design@
 - . . . Recreation and Sports
 - ▶Travel
 - ▶Transportation Resources
- . **Environment and Nature** (7070)
 - . . Pollution (204)
 - . . . Air (60)
 - ▶Auto Emissions@
- . **Food and Drink**
 - . . Cooking
 - . . . •Culinary Education
 - Baking (7)
 - Vegetarian (4)
- . **Religion and Spirituality**
 - . . Faiths and Practices
 - . . . Christianity
 - Denominations and Sects
 - Catholic
 - •Education
 - Colleges and Universities
 - K-12 (268)
 - Organizations (14)
 - Seminaries (13)
 - Islam
 - Hajj
 - Makkah@
 - ▶Travel and Transportation

Assignment 13.4 LCC
Library of Congress Classification (LCC)

Assigned: Apr. 20
Due: May 4

| | |
|---------------------|--|
| Objectives | Inherited from Assignment 13 |
| Deliverables | Inherited from Assignment 13 |
| Tasks | Inherited from Assignment 13

Do the exploration of <i>Classification Plus</i> (which follows the worksheet) as part of the first task in the worksheet; then you can use it for subsequent parts. |
| Materials | Attached
Top-level LCC outline, detailed outline, outline of class L Education
some sample pages and sample tables, more sample pages with Small Groups 1, Exploration of subject access (lecture notes)

LCC outline (2003)
www.loc.gov/catdir/cpsolcco/lccowp.html (WordPerfect, opens with Word)
www.loc.gov/catdir/cpsolcco/lcco.html (pdf, blue font)

LCC volumes (schedules) (Any edition after 1980 will do).
UMCP McKeldin Library Reference Stacks Z696.U5
Government Documents, http://www.lib.umd.edu/GOV/aboutus.html#hours
Call numbers: LC26.9:
Check an academic Library near you
Online <i>Classification Web</i> (LCC and LCSH). Included in the <i>Cataloger's Desktop</i> , available on 3 computers behind the reference desk in McKeldin
You can also get your own trial version of <i>Classification Web</i> (see email)

Exercise introducing <i>Classification Web</i> attached (1.5 hrs) |
| Readings | Needham, Ch. 8, Schemes of classification , p.163-168 (in reading packet for Lecture 12.1B)

Chan, Lois Mai
A guide to Library of Congress Classification . 5th ed.
Englewood, Colo. : Libraries Unlimited, 1999.
LibSch Z696.U4C47 1999 On reserve (not in reading packet)

p. 1-14 The history of the classification (optional)
p. 14-19 Focus and use
p. 23-47 Principles, structure, and format (skim the examples).

For further study, read more from this book |
| Time | 6 hours |

Name:

LCC Worksheet

►A - ►D in class, ►E - ►I on your own

| 1. General introduction | |
|--|---|
| Historical context | <p>Why do you think Military science and Naval science were each given a whole letter of the alphabet in the LC scheme? Write Answer A here.</p> <p>►A</p> |
| Explanation of call nos. | <p>Note: Complete call numbers for books consist of two parts: The class number and a number for the author of the book, such as</p> <p>Z668.R6 Roberts, Library instruction (Z668 Library education, R6 Roberts)</p> <p>These author numbers are called <i>Cutter numbers</i> after their inventor. We will not deal with Cutter numbers in these assignments. The developers of LCC thought of another use for Cutter numbers when they ran out of numbers for specific subdivisions: They simply arranged subdivisions alphabetically (not necessarily the best thing in a <i>classification</i>) and used a Cutter number beginning with the first letter of the subject to extend the class number. For example,</p> <p>Z695.1.E3 Subject cataloging. Subject headings > By subject A-Z > Education</p> <p>Z695.1.E3E34 Thesaurus of ERIC descriptors (E34 for ERIC)</p> |
| Study Class Z | <p>Examine the LCC outline and some volumes (particularly classes H (1997 or 2002), L (1995 or 1998), and Z (1995). Examine the schedules and the tables (in the back). Examine the alphabetical index in the back of each volume but take heed: As with all other classifications you will use, do not classify books from the alphabetical index itself.</p> <p>Study class Z in the Outline. Then take out a copy of the Z schedule. Flip through it and note the general organization.</p> |
| Find classes that are enumerated in the schedules | <p>Give the class numbers for the following titles</p> <p>►B Bookbinder's Monthly:</p> <p>►C A Bibliography of Publishing through the Ages:</p> |

| 2. Building new classes using tables | |
|---|---|
| Explanation of tables | While LCC is a highly enumerative scheme, it does not enumerate every specific class. Some classes must be built from a main class in the schedule following instructions in a table. As in DDC there are two kinds of tables: |
| General table | A general table , printed at the end of an LCC volume, applies to several classes in that volume as specified in instructions (not to the entire classification, as in DDC) |
| Local table | A local table , printed in the schedules as a note for a specific class, applies only to the children of that class. These are mostly small tables, sometimes up to a page, often used after a general table has been applied. |
| Building new classes w general table | <p>Example 1. Book selling and publishing > By region or country (vol. Z , p. 28)</p> <p>Example 1.1 History of Bookselling in France
 Z303-310 Book selling and publishing > France (Table Z7, p. 373)
 In Table Z7 we find 2 History. Biography
 Thus: Z305 Bookselling in France. History (Z303 + 2)</p> <p>Example 1.2 History of bookselling in Ireland
 Z331 Book selling and publishing /Ireland (Table Z8, p. 374 in vol. Z)
 In Table Z8 we find 0.3 History. Biography
 Thus: Z331.3 Bookselling in Ireland. History (Z331 + 0.3)</p> <p>Example 2. Banking (vol. H, 1997, p. 317)
 Banking
 By region or country
 HG2701-3542.7 Other regions or countries (Table H8)
 Add number in table to HG2700</p> <p>Example 2.1 Banking in Algeria
 In Table H8 we find 683 <i>Algeria</i> (vol. H, p. 646)
 Thus, HG3383 Banking in Algeria (HG2700 + 683)</p> <p>Example 2.2 Banking in China
 In Table H8, 631-640 China (a number range)
 Thus: HG3331-40 Banking in China (HG2700 + 631-640)</p> <p>See next page on how to determine the specific number in this range.</p> |

| General tables | Table Z7 | Table Z8 |
|-----------------------|--|--|
| | Add the appropriate number from this table to the first number of the classification number span to which the table applies. | Add the appropriate number from this table to the first number of the classification number span to which the table applies. |
| | 0 General Works | 0 General Works |
| | 1 Bibliography | 0.2 Bibliography |
| | 2 History. Biography | 0.3 History. Biography |
| | 3 Special lines of business (not A-Z) | 0.4 Special lines of business (not A-Z) |
| | 4 Directories | 0.5 Directories |
| | 5 Handbooks, manuals, etc. | 0.6 Handbooks, manuals, etc. |
| | 6 Periodicals. Societies. Congresses | 0.7 Periodicals. Societies. Congresses |
| | 7 Collections
Local | 0.8 Collections
Local |
| | 7.3.A-Z By state or region, A-Z | 0.83.A-Z By state or region, A-Z |
| | 7.6.A-Z By city, A-Z | 0.86.A-Z By city, A-Z |

| Note on adding numbers from tables | Note on adding numbers from tables in LCC |
|---|---|
| | If the table numbering starts with 0, just add the number from the table to the base number in the schedules. |
| | If the table numbering starts with 1, add the number from the table and subtract 1. |
| | Either way, the first number built is the first number of the range given in the schedule. |

**Building
new classes w
local table**

In Example 2.2, we did not arrive at an actual class number, but rather a range. We need to determine the subject more specifically to determine the specific class number. The instruction at HG2701-3542.7 actually goes on to say

Under each,

and then gives the local table shown opposite
(reformatted here for easier reading)

This table allows for subdividing each *Banking in country* class further. Not all countries are treated as equals. On some countries (such as France) there is a lot of material and LCC wants to provide for subdivisions with short numbers, so it uses a range of 20 numbers for such countries; on other countries (such as Algeria) there is little material and longer numbers are ok, so LCC uses just 1 number. In between are “10-number countries” and “5-number countries”. Thus I have arranged the table in four columns.

We can now construct the class for *History of Banking in China*:

HG3331-40 Banking in China from above

The table says to use the fourth number in this range, thus

HG3334 History of banking in China

Recent history of banking in China would fall under the same class

On the other hand, consider the number for

Recent history of banking in France

In Table H8, France is 321-340, thus

HG3021-40 Banking in France

HG3026-8 History of banking in France

HG3028 Recent history of banking in France

China. Banking in foreign countries is HG3325, but

Algeria. Banking in foreign countries is simply HG3383, same as *Banking in Algeria*

Analyze these examples from the perspective of exhaustivity and specificity of indexing and the effects on retrieval.

►D

Local table to build numbers under HG2701-3542.7

| Banking
By region or country --Continued | | | | |
|--|--|----------------|---------------|--------------|
| HG2701-3542.7 | Other regions or countries (Table H8) | | | |
| | Add [use a calculator, DS] number in table to HG2700 | | | |
| | Under each: | | | |
| | 20 nos. | 10 nos. | 5 nos. | 1 no. |
| Periodicals. Serials | 1 | 1 | 1 | .A1-.A4 |
| Societies, see HG 1507-HG1515 | | | | |
| Yearbooks | 4 | 3 | | |
| Directories | 5 | | | .A5 |
| History and Policy | 6-8 | 4 | 2 | .A6 |
| General Works | 6 | | | |
| Biography, see HG 1552 | | | | |
| Early e.g., Great Britain to 1844; date may vary for different countries | 7 | | | |
| Recent | 8 | | | |
| Statistics (Monographs) | 11 | | | |
| Banking in foreign countries, foreign branches | 12 | 5 | | |
| Central bank, national bank, banks of issue | 14-16 | 6 | 3 | .A7 |
| General works, History and description, including reports | 14 | | | |
| Policy | 15 | | | |
| Administration | 16 | | | |
| Other banks, A-Z | 18.A-Z | 8.A-Z | 4.A-Z | .A8A-Z |
| By region, A-Z | 19.A-Z | 9.A-Z | 4.5.A-Z | .A85A-Z |
| By city, A-Z | 20.A-Z | 10.A-Z5 | 5.A-Z5 | .A9-.Z5 |
| Under each city: | | | | |
| Yearbooks | .x | .x | .x | .x |
| General works | .x2 | .x2 | .x2 | .x2 |
| Including history | | | | |
| Policy, etc. | .x3 | .x3 | .x3. | .x3 |
| Individual banks, A-Z | x4A-Z | .x4A-Z | .x4A-Z | .x4A-Z |
| Savings and loans associations | 20.Z9A-Z | 10.Z6A-Z | 5.Z6A-Z | .Z6A-Z |

| 2. Building new classes using tables, continued | |
|--|--|
| Build your own class numbers | <p>The Proofreader's Handbook
E</p> <p>Prison Libraries
F</p> <p>Children's Book Publishing:
G</p> <p>History of Bookselling in Germany:
H</p> <p>History of Bookselling in Poland:
I</p> |

Tables in DDC, LCC, and LCSH compared

| | Dewey | LCC | LCSH |
|--|--|---|---------------------------------------|
| Global table
(DDC and LCSH)
General table (LCC) | Global tables in v.1
Apply to all classes | At end of each volume
Apply only to classes within one main class | Standard subdivisions |
| Local table | In the schedule
Apply to classes in a small section | In the schedule
Usually apply to all classes built with a global table | |
| Apply subdivision from other part of the classification
(add from) | In the schedule
Apply to one place | Not used | Subheadings under a "pattern heading" |

Library of Congress Classification and Subject Headings on Classification Web

| | |
|---------------------|---|
| Introduction | <p>Classification Web is an electronic version of the Library of Congress Classification schedules and the Library of Congress Subject Headings. You should follow the navigation on the following pages to get a feel for the system, and use it to complete the queries on work sheets H and I. You are welcome to complete this assignment in groups.</p> <p>You may use Classification Web for any part of the LCC and LCSH assignments, but you should also gain some experience with using the printed volumes so that you can compare the two forms of presentation.</p> <p>To learn more, you can look at the Quick Start Tutorial at http://www.loc.gov/catdir/cpsoc/classwebtutorial/1intro.html</p> <p>A comparison between Dewey for Windows and Classification Web is instructive from a document design perspective.</p> |
| Logon | <p>Go to the McKeldin Reference Desk and ask for the Cataloger's Workstation.</p> <p>You did receive an email with instructions on how to sign up for a trial. If you did sign up, you can do this from any computer.</p> |

Reference

- H** Display classification hierarchy
- R** Display classification or LCSH record. Click Close to return to the hierarchy display.
- B** Display bibliographic records from selected OPACs for this class (in separate Window).
- L** Display LC subject headings linked in LC authority records.
- D** Display Dewey classes corresponding to this LC class.
- S** Display subject headings frequently used with this class.
- C** Display in classification browser
- T** Display secondary table
- N** Edit the local notes for this record (only shown if user is authorized).
- E** Edit the authority record for the class (only shown if user is authorized).

A Navigation-based search of the Classification

| A1 General | |
|-------------------|--|
| General | <p>Select Enhanced Classification Browser.</p> <p>In the box LC Class #, type L and press [Enter].</p> <p>Schedule <i>L Education</i> is displayed, towards the top of the screen.</p> <p>Using the box LC Class #, go to LB2411.</p> <p>The box just above the main hierarchy display is called the Hierarchy Frame. It shows the hierarchical chain down to the highlighted class.</p> <p>(See the Reference for explanation of the letters in () or just try them)</p> <p>Click on R to see the record for this class. Click on Close.</p> <p>Try out B (Use Syracuse).</p> <p>Use the browser Back button to go back to the list of libraries, scroll to the end and click Close.</p> <p>Try out L, D, and S.</p> <p>Click Close or Cancel after each.</p> |

| A2 Hyperlinks to cross-references | |
|--|--|
| Hyperlinks to X-ref | <p>Look at <i>Surveys of college graduates</i> (before LB 2420, number range LB2420-2430. Double click on the cross-reference <i>HD6277</i> (blue).</p> <p>In LCSH you can also jump to a cross-referenced heading by a simple click.</p> <p>Examine schedule H around HD6277.</p> |

A3 The Hierarchy Browser (Click down the hierarchy)

Hierarchy Browser

You may need to click on Home before proceeding.

Click on **Menu**.

Click on **Hierarchy Classification Browser**.

Using the box LC Class #, go to *L*.

Click on ▼ to see more of the outline for L, again to see still more.

Click on ▲ until you get back to the original screen (approximately).

Click on LB1-3640 *Theory and practice of education*.

Use ▼ to find

LB1554.2-1602 Elementary or public school education.
Elementary school teaching

and click on it

Click on *LB1572-1602 Special branches*, check out that part of the hierarchy.

If you like, you can repeat this little exercise starting with class H.

Double-click on *HE1-9900 Transportation and communications*.

Find *HE380.8-971 Water transportation* and double-click it.

Double-click *HE380.8-560 Waterways*.

Click in the Hierarchy Frame on *Water transportation* to go back to that level.

B Query-based search of the classification

In WebDewey there are a number of different fields to search, corresponding to different relationships between the search starting point (term or class number) and the classes to be found. In Classification Web, the only index that is really useful is the **Keyword index**. (The Help information says otherwise.) All examples in this exercise use **Boolean search**.

| B1 Start: establish settings | |
|-------------------------------------|---|
| To start | <p>Click on Menu, then on Classification Search.</p> <p>The Help is very helpful. If you want to learn more on how to search this system and about searching in general, read it!</p> <p>Turn on the radio button for boolean search.</p> <p>Under display options click entire hierarchy. (Unfortunately, the resulting display is somewhat hard to read since the entries are not separated by a blank line, but still the most useful.)</p> <p>Under Number of results select 100.</p> |

| B2 Example search: <i>computers in education</i> | |
|---|--|
| Classification search | <p>In the Keyword box, type "<i>computer*</i>" and "<i>education</i>" (* truncates).</p> <p>Click on Search at the bottom of the screen (not Browse).</p> <p>Now try "<i>computer*</i>" and ("<i>education</i>" or "<i>instruction</i>" or "<i>teach*</i>" or "<i>learning</i>").</p> <p>Instead of 47 classes you now find 76.</p> <p>By clicking on C you can jump into the hierarchy around the class found.</p> |

| B3 Subject heading search | |
|----------------------------------|--|
| Subject heading search | <p>Click on Menu, then on LC Subject Headings.</p> <p>If you use the Keyword index, it works just like the classification search.</p> |

B4 More search possibilities**Explore more**

There are many more possibilities in this system. Experiment and/or read the help if you like. One feature that is particularly helpful is restricting the search to a part of the classification either by entering a class number in the **Classification number** box or by selecting a **Subset** (subset selection is effective for further searches until you remove all check marks in the subset selection screen. You might want to explore building numbers automatically (see the Quick Start Tutorial also accessible from the bottom of the menu page).

C Now complete query F Canals from the Query Forms

Do on your own.

List at least 7 important LCC classes from at least 3 different areas of the classification where one should look on the shelves (broad class implies subclasses) and 5 LCSH headings under which one should search.

Copy and paste into a word processor document; it is best to use
Edit > Paste special > Unformatted text

This ends the exercise. Explore some more on your own or close WebDewey.

See next page for further comments

Notes on Classification Web

The display of the hierarchy is very poor. It is even more difficult than in the printed schedule to follow the hierarchical levels by indentation. Major divisions should be bolded.

Some lines are not classes that can be assigned but merely headings to organize the classification. These lines have no class numbers. It would be helpful to have numbers or number ranges in [].

Should use > instead of -- (easier for people who are used to Yahoo); also, the customary use of -- is in Main heading -- Subheading.

Displays do not scroll as expected.

The Hierarchy Browser does not use the standard Explorer-type interface for such displays.

The search for captions searches only the lowest level caption which for most cases is not what is most useful. The Keyword index is the only index that searches the entire chain down to the class (along with any other word in the record for the class, which may sometimes retrieve a bit more than is wanted.) (The **Caption** index or the **Index term** may serve some specialized uses at LC but most users can safely ignore them.)

Even though the unusual mandatory use of quotation marks around single words in Boolean searching suggests it, one cannot search for phrases.

The search results list gives the class number only the lowest level caption as the default; this is not helpful since the lowest level caption does not reveal the hierarchical context. Somebody familiar with LCC will have an idea what the class is about, but other users must click on R for every class found to get the picture.

The results list does not seem to be sorted in any particular order. It should be sorted by class number as the default.

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

| | |
|----|--|
| 1. | <p>Purpose</p> <p>1.1 Information system or type of information system in which to be used
<i>Bibliographic information system. Intended for academic and research libraries and large public libraries.</i></p> <p>1.2 Intended for controlled vocabulary indexing <input checked="" type="checkbox"/> or query term expansion <input type="checkbox"/> (Ch. 12, Introduction)</p> <p>1.3 Type of file and search mechanism for which originally designed
Shelving <input checked="" type="checkbox"/> Card catalog / printed index <input type="checkbox"/> Online <input type="checkbox"/></p> |
| 2. | <p>Coverage and designation of concepts. Coverage and format of terms</p> <p>2.1 Concepts: Scope, breadth of coverage. Recency of concepts
<i>Universal - covers all knowledge. But focus on Western culture, esp. U. S.</i></p> <p>2.2 Concepts: Specificity, depth of coverage (Section 16.2.2). Coverage at each level of specificity.
<i>Level of specificity varies (even among similar entities - e.g. 5 number countries vs. 20-number countries)</i></p> <p>2.3 Are all necessary facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1)
<i>Some facets are reflected in general and local tables. Whether all facets for a subject, such as education, are included is impossible to say without extensive analysis because the facets are not explicit.</i></p> <p>2.4 Nature of notation (if none, state that) (Section 15.5.2) <i>Alphanumeric notation, expressive on first two levels (two letters), then simply ordinal, at the very bottom it is again expressive (as in 675.P6 Prison libraries)</i></p> <p>2.5 Terms: Completeness of coverage of terminology (completeness of lead-in vocabulary). Recency of terms
<i>No attempt at covering terminology. Terms often old.</i></p> <p>2.6 Form of terms: Consistency, adherence to common usage. <i>No attempt to use common terminology. Terms often created for precise meaning of class.</i></p> |
| 3. | <p>Terminological and conceptual analysis and conceptual structure.</p> <p>3.1 Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Heading for 3.1 - 3.3)</p> <p>3.1.1 Expression of concepts through elemental concepts (closely related to definition)
<i>Explicit only where tables used or where the semantic factors are obvious from the hierarchy</i></p> <p>3.1.2 Hierarchical relationships (polyhierarchy). (Shown by arrangement or Broader Term / Narrower Term X-ref)
<i>Monohierarchy with very few cross-references (cf.) for hierarchical relationships not shown by arrangement</i></p> <p>3.1.3 Associative relationships (Implied by physical proximity in the arrangement or explicit Related Term X-ref)
<i>Very few Related Term cross-references, subsumed under designation cf.</i></p> <p>3.2 Quality of definitions, explications, scope notes (correctness, detail, clarity).
<i>Very few usage notes</i></p> <p>3.4 Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship? <i>Not a goal in LCC.</i></p> |

4. **Use of precombination in the index language** (concerns both 2 and 3) (Ch. 14, 15, esp. 15.4)
- 4.1 To what degree are the final descriptors assigned to documents, whether enumerated or built by the indexer, precombined? *Highly precombined*
- 4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?
Highly enumerated (more than Dewey)
- To what extent can the indexer build additional precombined descriptors?
Indexer can build more precombined classes by adding components from local and global tables.
- Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to the arrangement of a classification) (Section 15.5.2)
- Precombined descriptors have their own independent symbols. Combination order actually used by the editor varies. Often standard sequence of countries is used, with exceptions.*

5. **Access and display. Format of presentation of the vocabulary**
- For each format consider access/retrieval by concepts versus access/retrieval by terms.
Access can be provided through arrangement in a printed document or through a computer search system.
- 5.1 **Format of printed document** (Heading for 5.1.1- 5.1.3)
- 5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?
Divided into individual volumes by main class. Each volume has outline, main schedule of classes, sometimes global (volume-wide) tables, and an alphabetical index. Has outline to the entire classification, but no overall alphabetical index.
- 5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)
- through linear arrangement or graphical display (Section 15.5.2) *Almost exclusively*
 - through cross-references (Section 14.1) *Very few*
 - through descriptor-find index (Section 15.5.1) *No*
- How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).
Concepts are arranged in a meaningful sequence in the major hierarchical sequence, but on the lowest level there is often alphabetical arrangement of subjects. In the Bibliographies by subject part in Z, subjects are arranged alphabetically.
- 5.1.2 Display of terminological relationships (Synonymous Term) *No lead-vocabulary included*
- 5.2 **Access through computer system.** Navigation. Format of on-line displays
Classification Plus. Searchable and cross-references are hyperlinks. (More detailed analysis omitted.)

Instructions for using the Library of Congress Classification

| | | | | | | | | | | | | | | | | | |
|---------------------------------|--|-----------------|-----------------------------|---------|---------------|-----------|--------------------------------|------------|------------|------------|-------|------------|--------|------------|-----------------------|------------|----------|
| <p>Indexing</p> | <p>Give one and only one class per document; if another class is a strong contender, list it as an alternate and give reasons for selecting the class you chose. (If there is no other class that would fit the document, leave the Alternate class blank.) For each class give the text as a hierarchical chain, starting with the main class, e.g.</p> <p style="padding-left: 40px;">E814.M5 History/US/Elements in the population/Elements, A-Z/
Mexicans</p> | | | | | | | | | | | | | | | | |
| <p>Query formulation</p> | <p>Try to list all classes where one should look for relevant documents on the shelves; if there are more than 10 classes, list a representative sample (enough to demonstrate that you how to find all classes throughout all the LCC main classes).</p> <p>Note: A class implies all its narrower classes; no need to list these narrower classes, they can be readily seen from the schedules. Consider this example from volume H (1997), Section HD <i>Economic history and conditions</i>, p. 158 (reproduced in the materials for Assignment 11):</p> <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">HD 9710-9710.37</td> <td>Automobiles. Motor Vehicles</td> </tr> <tr> <td>HD 9710</td> <td>General works</td> </tr> <tr> <td>HD 9710.3</td> <td>Automobile supply ... industry</td> </tr> <tr> <td>HD 9710.33</td> <td>Limousines</td> </tr> <tr> <td>HD 9710.34</td> <td>Buses</td> </tr> <tr> <td>HD 9710.35</td> <td>Trucks</td> </tr> <tr> <td>HD 9710.37</td> <td>Recreational vehicles</td> </tr> <tr> <td>HD 9710.38</td> <td>Trailers</td> </tr> </table> <p>Once you have specified HD9710-9710.37 <i>Automobiles. Motor Vehicles</i>, you need not individually specify the narrower classes HD9710.3 <i>Automobile supply ... industry</i>, HD9710.33 <i>Limousines</i>, HD9710.34 <i>Buses</i>, etc. The query formulation is the OR combination of all the classes or headings you list. (AND combinations are out: for shelving, only one class is assigned; while more than one class could be assigned for a classified catalog, LCC is not designed for combining class numbers in searching.)</p> <p>You may use the print version or the electronic version for all documents and queries. Questions H, <i>canals</i>, and I, <i>helicopters</i> (optional) are part of the Classification Web exercise. If you wish, you may try them in the print version as well for comparison.</p> | HD 9710-9710.37 | Automobiles. Motor Vehicles | HD 9710 | General works | HD 9710.3 | Automobile supply ... industry | HD 9710.33 | Limousines | HD 9710.34 | Buses | HD 9710.35 | Trucks | HD 9710.37 | Recreational vehicles | HD 9710.38 | Trailers |
| HD 9710-9710.37 | Automobiles. Motor Vehicles | | | | | | | | | | | | | | | | |
| HD 9710 | General works | | | | | | | | | | | | | | | | |
| HD 9710.3 | Automobile supply ... industry | | | | | | | | | | | | | | | | |
| HD 9710.33 | Limousines | | | | | | | | | | | | | | | | |
| HD 9710.34 | Buses | | | | | | | | | | | | | | | | |
| HD 9710.35 | Trucks | | | | | | | | | | | | | | | | |
| HD 9710.37 | Recreational vehicles | | | | | | | | | | | | | | | | |
| HD 9710.38 | Trailers | | | | | | | | | | | | | | | | |

Example of query formulation with LCC**Query topic: *Teaching of science at all levels***

| | |
|---------------|---|
| LB1532 | Education > Theory and practice of education > Primary education > Branches of study > Special > Nature study. Science |
| LB1585-1585.7 | Education > Theory and practice of education > Elementary or public school education > Special branches > Nature study. Science |
| Q160-161.2 | Science > Science (general) > Textbooks |
| Q181.A1-183.4 | Science > Science (general) > Study and teaching |
| Q190-197 | Science > Science (general) > Audiovisual aids in science teaching |
| QB61-62.7 | Science > Astronomy > Study and teaching. Research |
| QC20.8-20.82 | Science > Physics > Mathematical physics > Study and teaching. Research |
| QC23 | Science > Physics > Elementary textbooks |
| QC30-48 | Science > Physics > Study and teaching. Research |

etc.: Under every field of science (and some of their subfields), there are subdivisions such as *Textbooks* and *Study and teaching. Research*

Note on the example: As in Dewey, the combination order is as follows:

For primary and elementary education: Education – Subject

For secondary or higher education: Subject – Education

(there are no subject-specific classes in LB1603-169.6
Secondary education. High schools).

But LCC has some exceptions to this general rule, as in the example of QC23.

Your own notes on query formulation with LCC

Library of Congress Classification

Broad Outline (Main classes)

| | |
|-----|---|
| A | General works |
| B | Philosophy. Psychology. Religion |
| C | Auxiliary sciences of history |
| D | History: General and outside the Americas |
| E-F | History of America |
| E | History: America General and United States General |
| F | History: United States local, Canada, and Latin America |
| G | Geography |
| H | Social sciences |
| J | Political science |
| K | Law |
| L | Education |
| M | Music and books on music |
| N | Fine arts |
| P | Language and literature |
| Q | Science |
| R | Medicine |
| S | Agriculture |
| T | Technology |
| U | Military science |
| V | Naval science |
| Z | Bibliography and library science |

The following pages give first a detailed outline and then examples of classes dealing with or relevant to *transportation and traffic*.

In the detailed outline, each group of classes indicated by [on the left margin is in one volume of LCC.

Library of Congress Classification. Detailed Outline

A General works

- [AC Collections. Series. Collected works
- [AE Encyclopedias (General)
- [AG Dictionaries and other General reference works
- [AI Indexes (General)
- [AM Museums (General). Collectors and collecting (General)
- [AN Newspapers
- [AP Periodicals
- [AS Academies and learned societies (General)
- [AY Yearbooks. Almanacs. Directories
- [AZ History of scholarship and learning. The humanities

B Philosophy. Psychology. Religion

B-BJ Philosophy, incl. BF Psychology

- [B Philosophy (General)
 - [BC Logic
 - [BD Speculative philosophy
 - [BF Psychology. Parapsychology. Occult sciences
 - [BH Aesthetics
 - [BJ Ethics. Social usages. Etiquette
- ### BL-BX Religion
- [BL Religions. Mythology. Rationalism
 - [BM Judaism
 - [BP Islam. Bahaim. Theosophy
 - [BQ Buddhism
 - BR-BX Christianity
 - [BR Christianity
 - [BS The Bible
 - [BT Doctrinal theology
 - [BV Practical theology
 - [BX Christian denominations

C Auxiliary sciences of history

- [C Auxiliary sciences of history (General)
- [CB History of civilization
- [CC Archaeology (General)
- [CD Diplomatics. Archives. Seals
- [CE Technical chronology. Calendar
- [CJ Numismatics
- [CN Inscriptions. Epigraphy
- [CR Heraldry
- [CS Genealogy
- [CT Biography [General]

D History: General and Old World

- [D History (General). Europe (General)
- [DA Great Britain
- [DAW Central Europe
- [DB Austria, Hungary, Czech Republic, Slovakia
- [DC France
- [DD Germany
- [DE Mediterranean region. Greco Roman World
- [DF Greece
- [DG Italy
- [DH Netherlands (low Countries). Belgium, Luxemburg
- [DJ Netherlands (Holland)
- [DJK Eastern Europe
- [DK Russia and former Soviet republics. Poland
- [DL Northern Europe. Scandinavia
- [DP Spain. Portugal
- [DQ Switzerland
- [DR Balkan peninsula
- [DS Asia
- [DT Africa
- [DU Oceania (South Seas) [Australia. New Zealand]
- [DX Roma (Gypsies)

E-F History of America

- [E1-143 America (General)
- [E151-857 United States (Gen.)
- [F1-957 United States: States and Local
- [F1001-1140 Canada
- [F1201- Other individual countries [mostly Latin America]

G Geography

G - GF Geography

- [G Geography (General). Atlases. Maps
- [GA Mathematical geography. Cartography
- [GB Physical geography
- [GC Oceanography
- [GE Environmental sciences
- [GF Human ecology. Anthropogeography
- [GN Anthropology
- [GR Folklore
- [GT Manners and customs (General)
- [GV Recreation. Leisure

H Social sciences

- [H Social sciences (General)
 - [HA Statistics
- ### HB-HJ Economics
- [HB Economic theory. Demography
 - [HC- Economic history and conditions
 - [HD conditions
 - [HE Transportation and communication
 - [HF Commerce
 - [HG Finance
 - [HJ Public finance
- ### HM-HX Sociology
- [HM Sociology (General and theoretical)
 - [HN Social history. Social problems. Social reform
 - [HQ The family. Marriage. Woman
 - [HS Societies: secret, benevolent, etc. Clubs
 - [HT Communities. Classes. Races
 - [HV Social pathology. Social and public welfare. Criminology
 - [HX Socialism. Communism. Anarchism

J Political science

- [J General legislative and executive papers
- [JA-JC Political science
- [JA Collections and general works
- [JC Political theory
- [JF-JQ Political institutions and public administration
- [JF General works. Comparative works
- [JK United States
- [JL Brit. America. Latin America
- [JN Europe
- [JQ Asia. Africa. Australia. Oceania
- [JS Local government
- [JV Colonies and colonization. Emigration and Immigration
- [JX International law. International relations
- [JX No longer used at LC

K Law

- [K Law (General)
- [KD United Kingdom and Ireland
- [KDZ America. N.Am. (w/ KG,KH)
- [KE Canada
- [KF United States
- [KG Central America, Caribbean
- [KH South America
- [KJ-KKZ Europe (3 vols., KJV-KJW France, KK-KKC Germany)
- [KL-KWX [The rest of the world]

L Education

- L Education (General)
- LA History of education
- LB Theory and practice of educ.
- LC Special aspects of education
- LD-LG Individual institutions
- LD United States
- LE America except United States
- LF Europe
- LG Asia, Africa, Oceania
- LH Coll. & school mag. & papers
- LJ Student fraternities and societies in the United States
- LT [Multi-subject] Textbooks

M Music and books on music

- M Music [instrumental and vocal]
- ML Literature of music
- MT Musical instruction and study

N Fine arts

- N Visual arts (General)
- NA Architecture
- NB Sculpture
- NC Drawing. Design. Illustration
- ND Painting
- NE Print media
- NK Decorative arts. Applied arts. Decoration and ornament
- NX Arts in General

P Language and literature (l&l)

- P Philology and linguistics (Gen.)
- PA Classical l&l (w. supplement)
- PB-PH Modern European lang.
- PB Celtic languages and literature
- PC Romance languages
- PD-PF Germanic languages
- PD Scandinavian. North Germanic
- PE English
- PF West Germanic
- PG Slavic. Baltic. Albanian l&l
- PH Finno-Ugrian. Basque l&l
- PJ-PL Oriental languages & lit.
- PJ Oriental. Semitic
- PK Indo-Iranian
- PL L&l E. Asia, Africa, Oceania
- PM Hyperborean, Indian, and artificial languages
- PN Index to languages & dialects
- PN-PZ Literature**
- PN Literary history and collections
- PQ French & Romance lit. (1&2)
- PR English literature
- PS American literature
- PT German & Germanic lit. (1&2)
- PZ Children's literature

Q Science

- Q Science (General)
- QA Mathematics. [Computer science]
- QB Astronomy
- QC Physics
- QD Chemistry
- QE Geology
- QH-QR Biology
- QH Natural history (General). Biology (General)
- QK Botany
- QL Zoology
- QM Human anatomy
- QP Physiology
- QR Microbiology

R Medicine

R-RL Medicine

- R Medicine (General)
- RA Public aspects of medicine
- RB Pathology
- RC Internal medicine. Practice of Medicine
- RD Surgery
- RE Ophthalmology
- RF Otorhinolaryngology
- RG Gynecology and obstetrics
- RJ Pediatrics
- RK Dentistry
- RL Dermatology
- RM-RZ Allied disciplines**
- RM Therapeutics. Pharmacology
- RS Pharmacy and materia medica
- RT Nursing
- RV Botanic, Thomsonian, and eclectic medicine
- RX Homeopathy
- RZ Other systems of medicine [Chiropractic. Osteopathy. Mental healing]

S Agriculture

- S Agriculture (General)
- SB Plant culture
- SD Forestry
- SF Animal culture
- SH Aquaculture. Fisheries. Angling
- SK Hunting

T Technology

- T Technology (General)
- TA-TH General engineering and civil engineering**
- TA General
- TC Hydraulic and ocean eng.
- TD Environmental technology, sanitary engineering
- TE Highway engineering
- TF Railroads
- TG Bridge engineering
- TH Buildings
- TJ-TL Mechanical group**
- TJ Mechanical engineering
- TK Electrical engineering. Nuclear engineering
- TL Motor vehicles. Aeronautics. Astronautics
- TN-TR Chemical group**
- TN Mining, metallurgy
- TP Chemical technology
- TR Photography
- TS-TX Composite group**
- TS Manufactures
- TT Arts and crafts. Handicrafts
- TX Home economics

U Military science

- U Military science (General)
- UA Armies: Organization, description, facilities, etc
- UB Military administration
- UC Maintenance and transportation
- UD Infantry
- UE Cavalry, armor
- UF Artillery
- UG Military engineering. Air forces. Air warfare
- UH Other services

V Naval science

- V Naval science (General)
- VA Navies: Org., descr., fac., etc
- VB Naval administration
- VC Naval maintenance
- VD Naval seamen
- VE Marines
- VF Naval ordnance
- VG Minor services of navies
- VK Navigation. Merchant marine
- VM Naval engineering. Ship building. Marine Engineering

Z Bibliography and library science.

- Z4-115 Books (General). Writing. Paleography
- Z116-659 Book industry & trade
- Z662-1000 Libraries. [Library science. Information science]
- Z1001-8999 Bibliography

LCC Education outline

LCC sample pages inserted here

LCC sample pages end on even

Assignment 13.4 LCC**Assigned: Apr. 20****Due: May 4****Media Streams Iconic Classification**

| | |
|---------------------|---|
| Objectives | Inherited from Assignment 13 |
| Deliverables | An essay analyzing / critiquing / commenting on the scheme,
3 - 5 p., with examples

Outline for the analysis of Knowledge Organization Systems |
| Tasks | Explore the classification and prepare an essay / report

Fill in the Outline for the analysis of Knowledge Organization Systems |
| Materials | There is one Macintosh laptop in the GA office that has the system on it. The system was briefly demonstrated in Lecture 12.2 |
| Readings | See readings for Lecture 12.2

Also of interest:

Marc Davis. "Editing Out Video Editing." IEEE MultiMedia, 10 (2).
April-June 2003. 54-64.
http://fusion.sims.berkeley.edu/GarageCinema/pubs/pdf/pdf_32493130-AE7A-4F50-91EF029FC6E32567.pdf

Marc Davis. "From Pirates to Patriots: Fair Use for Digital Media."
IEEE MultiMedia, 9 (4). October-December 2002. 4-7.
http://fusion.sims.berkeley.edu/GarageCinema/pubs/pdf/pdf_06C344BC-84CF-4145-B7049AD77E22B959.pdf

Marc Davis. "Garage Cinema and the Future of Media Technology."
Communications of the ACM (50th Anniversary Edition Invited Article)
40 (2 1997): 42-48.
http://fusion.sims.berkeley.edu/GarageCinema/pubs/pdf/pdf_599AB179-D346-4374-8F0AE11D9D76EBEF.pdf |
| Time | 6 hours or a little more |

Outline for the analysis of Knowledge Organization Systems

For some items, a section number from Soergel, Organizing information is given in ()

| | |
|----|--|
| 1. | Purpose
1.1 Information system or type of information system in which to be used

1.2 Intended for controlled vocabulary indexing <input type="checkbox"/> or query term expansion <input type="checkbox"/> (Ch. 12, Introduction)

1.3 Type of file and search mechanism for which originally designed
Shelving <input type="checkbox"/> Card catalog / printed index <input type="checkbox"/> Online system <input type="checkbox"/> |
| 2. | Coverage and designation of concepts. Coverage and format of terms
2.1 Concepts: Scope , breadth of coverage. Recency of concepts

2.2 Concepts: Specificity , depth of coverage (Section 16.2.2). Coverage at each level of specificity.
2.3 Are all necessary facets included? Concepts formed in semantic factoring and facet analysis? (S.a. 3.1)

2.4 Nature of notation (if none, state that) (Section 15.5.2)

2.5 Terms: Completeness of coverage of terminology (completeness of lead-in vocabulary). Recency of terms

2.6 Form of terms: Consistency, adherence to common usage. |
| 3. | Terminological and conceptual analysis and conceptual structure.
3.1 Quality of conceptual structure (14): Facet analysis. Types and degree of differentiation of conceptual relationships included. For each type indicate the completeness of inclusion. (Fill in 3.1.1 - 3.1.3)
3.1.1 Expression of concepts through elemental concepts (closely related to definition)
3.1.2 Hierarchical relationships (polyhierarchy). (Shown by arrangement or Broader Term / Narrower Term X-ref)
3.1.3 Associative relationships (Implied by physical proximity in the arrangement or explicit Related Term X-ref)

3.2 Quality of definitions , explications, scope notes (correctness, detail, clarity).

3.3 Completeness of terminological relationships: Does the vocabulary contain terms that are synonymous or quasi-synonymous without indicating the relationship? |

4. **Use of precombination in the index language** (concerns both 2 and 3) (Ch. 14, 15, esp. 15.4)

4.1 To what degree are the final descriptors assigned to documents, whether enumerated or built by the indexer, precombined?

4.2 To what extent are precombined descriptors enumerated and/or given in the alphabetical index?

To what extent can the indexer build additional precombined descriptors?

Are precombined descriptors designated by an independent symbol or a string of symbols? Combination order free or fixed? To what extent do the components of a precombined descriptor determine its place in the arrangement? (Relates also to the arrangement of a classification) (Section 15.5.2)

5. **Access and display. Format of presentation of the vocabulary**

For each format consider access/retrieval by concepts versus access/retrieval by terms.

Access can be provided through arrangement in a printed document or through a computer search system.

5.1 **Format of printed document** (Fill in 5.1.1- 5.1.3)

5.1.1 Overall format: Thesaurus parts and information given in each, connections between them. Is the overall format clear and helpful for finding the appropriate concepts and terms or notations in indexing and query formulation?

5.1.2 Display of conceptual relationships (Broader Term, Narrower Term, Related Term)

- through linear arrangement or graphical display (Section 15.5.2)

- through cross-references (Section 14.1)

- through descriptor-find index (Section 15.5.1)

How well does the display reflect the conceptual analysis, e.g., sequence of concepts on the same hierarchical level (sequence of the children of a concept, that is, the concepts one level further down).

5.1.3 Display of terminological relationships (Synonymous Term)

5.2 **Access through computer system.** Navigation. Format of on-line displays

Indexing forms Documents A - C

Query forms Queries D - F

Index 3 documents (A-C, all on education). For each document, a copy of the title page, the cover or jacket blurb, and the table of contents are provided. Copies of the two books can be examined in Baldy 14A; the third document is a Web site, <http://forum.swarthmore.edu/mathmagic>.

For each document there is a *document indexing form*.

For each scheme, there are instructions for indexing.

Formulate 3 queries (D-F, 2 on education, 1 on transportation).

For each query there is a *query form*.

For each scheme, there are instructions for query formulation.

The indexing and query forms provide space for writing down the descriptors from all schemes for ease of comparison. Write down the class/descriptor number (if any) and the class/descriptor text, for example,

DDC: 371.5 Education > Elementary ed. > El. ed. in special subjects > Computers, science, technology, health > Science and tech.

ERIC: Elementary School Science

LCSH: Science - Study and teaching (elementary)

Yahoo: Science > Education > K-12 [el. school not available]

LCC: LB1535 Education > Theory and practice of education >
Elementary or public school education > Special branches > Nature study. Science >
General works

Add comments or observations on each scheme in the space for the scheme, spilling over to the comment area at the bottom if needed. Add comments or observations on the comparison of two or more schemes at the bottom

To be handed in

Yahoo precombined class(es):

Elemental indexing concepts (components of the class):

DDC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCSH headings (not more than 5)

ERIC descriptors (not more than 10)

Comments (on any of the schemes or on comparisons):

Yahoo precombined class(es):

Elemental indexing concepts (components of the class):

DDC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCSH headings (not more than 5)

ERIC descriptors (not more than 10)

Comments (on any of the schemes or on comparisons):

Yahoo precombined class(es):

Elemental indexing concepts (components of the class):

DDC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCC class:

Alternate class:

Hierarchical chain (in words):

Components (if class was built):

LCSH headings (not more than 5)

ERIC descriptors (not more than 10)

Comments (on any of the schemes or on comparisons):

D Query form. (1) Mexicans in (2) American schools

(1) Mexican-Americans and aliens from Mexico. (2) American is understood, so just look for schools

Yahoo List 5-7 classes or give a Boolean query formulation using elemental concepts from Yahoo

DDC List 5 - 7 representative classes from across the classification

LCC List 5 - 7 representative classes from across the classification

LCSH List 5 - 7 representative subject headings from across the alphabet

ERIC Give a Boolean query formulation using applicable ERIC descriptors
(Some concepts may require an OR combination of descriptors similar in meaning.)

Comments (on any of the schemes or on comparisons):

E Query form. **Mexicans in American society** (a topic broader than D)

(Mexican-Americans and aliens from Mexico)

(For Yahoo, DDC, LCC, and LCSH, all the classes or headings for query D must be used in searching; no need to repeat them. Just give a few of the many additional classes or headings for illustration)

Yahoo List 5 - 7 illustrative additional classes or give a Boolean query formulation using elemental concepts from Yahoo

DDC List 5 - 7 illustrative additional classes

LCC List 5 - 7 illustrative additional classes

LCSH List 5 - 7 illustrative additional subject headings

Comments (on any of the schemes or on comparisons):

F Query form. All aspects of canals (for transportation)

(This query illustrates that the main classes in DDC and LCC are based on disciplines, not on concrete objects. Observe the "relative" nature of the alphabetical index in DDC which brings together all the different places where **Canal** occurs in the scheme.)

Yahoo List 5 - 7 representative classes or give a Boolean query formulation using elemental concepts from Yahoo

DDC List 5 - 7 representative classes from across the classification (use Dewey for Windows)

LCC List 5 - 7 representative classes from across the classification (use Cataloger's Desktop)

LCSH List all applicable subject headings (use electronic version)

Comments (on any of the schemes or on comparisons):

Document materials

for the three documents to be indexed

Also look at the actual documents in Baldy 14A

A. Differentiating the teaching staff. / James Lewis

B The open classroom reader. / Charles E. Silberman, editor

C MathMagic (The Web site <http://forum.swarthmore.edu/mathmagic>)

