UBLIS571%Assignment1

Spring 2016

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|  | Assignment 2 | Assigned: January 27 |
|  |  | Due: February 10 |

**Bibliographic retrieval system exploration: Medline**

**Task 3 Individual essay**

You prepare your individual essay (Task 3) last, but for the reader / grader it is best to read it first.

Other parts of the assignment on the following pages

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**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. Following the examples in Documents 1 and 2, for Documents **3** - **10**, 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., **Computer-Aided Design** or **Algorithms**) (see hierarchy in Figure 1). (For black and white print, red is underlined to distinguish.) The descriptors of interest are bolded to facilitate your task. In this search only major descriptors (marked with \*) are used for retrieval. (**Deliverable 1a**). (Note: Tasks 1a and 1b have also been called 1.1 and 1.2)

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| For the analysis required in 1.2, you need the answer sets in which document is included as given here. |
| **1** Answer Set **1**  ● Speech recognition in noise. Development of a computerized test and preparation of test material.  *Tags*: Human  *Descriptors*: \***Computer-Aided Design;** \*Noise--Adverse Effects**;** \*Speech Perception**;** \***Speech Reception Threshold Test;** Audiometry, Speech **;** Hearing Loss, Sensorineural  **2** Answer Sets **1, 2, 3, 4, 5**  ● Effect of sampling frequencies and averaging resolution on medical parameters of auditory brainstem responses.  *Tags*: Human  *Descriptors*: \***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  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **3** Answer Set **1**  ● Composite probability modeling of increasing resolution where diagnostic covariates are unmeasurable for some subjects.  *Tags*: Human  *Descriptors*: \***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  **4** Answer Set **1**  ● A neural network approach to the prediction of pure tone thresholds with distortion product emissions.  *Tags*: Comparative Study**;** Female**;** Human**;** Male**;** Support, Non-U.S. Gov't  *Descriptors*: \***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  **5** Answer Set **1**  ● 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 |

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| **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  **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  **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 Pro-cessing, Computer-Assisted**--Instrumentation**;** Acoustic Stimulation--Methods**;** Adolescence**;** Adult**;** Aged**;** Child**;** Cochlear Nerve--Physiopathology**;** Edema--Physiopathology**;** Meniere's Disease--Physiopathology**;** Middle Age  **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  **10** Answer Set **1**  ● Komputerwa 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  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **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 |

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| **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  **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  **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  **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  **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  **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  **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  **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 |

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| **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  **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  **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  **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  **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  **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  **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 |

**Medline Worksheet 1. Task 1b.**

**Questions on the main search queries using assigned subject descriptors ( Task 1b)**

**1 What effect does focusing the query formulation have on the number of documents found?**

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Note for questions.2 - 4: The listing for Answer Set 1also gives for each document the other answer sets in which it was found.

**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 Document 6 is not?**

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**3 Why is Document 18 retrieved into Answer Set 4 but not into Answer Set 5?**

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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?

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**Medline Worksheet 2. Task 2.**

**1** **Compare controlled vocabulary search and free-text search**

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*?

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**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?**

►

**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?**

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