

Lectures 27/28

Final review

- 30 1 Discuss security issues in a comprehensive person database of a university. The database covers all faculty, staff, and student records. It supports public access (telephone/email/homepage directory, online registration and grade inquiries), personnel administration including payroll, and student administration.
- 20 2 Discuss potential data mining (broadly defined) applications in a library.
- 30 3 Assume a customer database of a mail-order business. Applications need the following pieces of data about customers, among others:
- the age of a customer
 - the distance of a customer from the nearest company warehouse.
- Give the general idea of an object definition to support easy access to these data.
- 40 4 You have to develop the data model for a large catalog of equipment (make/model rather than individual units) of all kinds, where some data are needed for all kinds of equipment and others only for a certain type of equipment. How would you use entity types and subtypes in this task? How would this problem be addressed in an object-oriented database.
- 30 5 For the university database, construct SQL queries for the following:
- 5.1 A list of all students in a given course offering whose grade is below the average for that course offering.
 - 5.2 A list of course offerings with the average grade given.
 - 5.4 There will be a question that involves using CONNECT BY

There will be a question on E-R modeling

There will be a question of using CONNECT BY

```

SELECT t5.LastName, t4.Grade
FROM t5stuid t5, t4cstugr t4
WHERE
    t4.CofNo = 'COF01' AND
    t4.Grade <
        (SELECT AVG (t4a.Grade)
         FROM t4cstugr t4a
         WHERE t4a.CofNo = 'COF01' ) AND
    t5.StudentID = t4.StudentID;

```

```

SQL> @finalrev51
Input truncated to 38 characters

```

LASTNAME	GRADE
Lund	2
Doe	0

```

SELECT RTRIM(t5.LastName) || ', ' || t5.FirstInit Student, t4.Grade
FROM t5stuid t5, t4cstugr t4
WHERE
    t4.CofNo = 'COF01' AND
    t4.Grade <
        (SELECT AVG (t4a.Grade)
         FROM t4cstugr t4a
         WHERE t4a.CofNo = 'COF01' ) AND
    t5.StudentID = t4.StudentID;

```

```

SQL> @finalrev51a
Input truncated to 38 characters

```

STUDENT	GRADE
Lund, M.	2
Doe, V.	0

```
SELECT t4.CofNo, AVG (t4.Grade)
      FROM t4cstugr t4
      GROUP BY t4.CofNo;
```

```
SQL> @finalrev52
```

```
COFNO  AVG (T4 . GRADE)
-----  -----
COF01          2.25
COF02           4
COF03     2.33333333
COF04     2.33333333
COF05           3
COF06     3.66666667
COF07     3.33333333
COF08          3.25
COF09          2.75
COF10     3.33333333
COF11     3.66666667
COF12           2.8
COF13           3.5
```

```
SELECT t4.CofNo, AVG (t4.Grade)
      FROM t4cstugr t4
      GROUP BY t4.CofNo
      HAVING AVG (t4.Grade) < 2.5;
```

```
SQL> @finalrev52a
```

```
COFNO  AVG (T4 . GRADE)
-----  -----
COF01          2.25
COF03     2.33333333
COF04     2.33333333
```

CREATE TABLE Serial

```
(
  Issn          CHAR (9)   NOT NULL,
  Title         VARCHAR2 (60) NOT NULL,
  Pub           VARCHAR2 (11),
  Agency        VARCHAR2 (11),
  Freq          INT,
  StartY        CHAR (4)   NOT NULL,
  Price         DECIMAL (7,2),
  CallNo        VARCHAR2 (15),
  RoutND        CHAR (1)   CHECK (RoutND IN ('y', 'n')),
  Loc           VARCHAR (20),
  Treat         VARCHAR2 (40),
  BDFreq        INT,
  BDForm        VARCHAR2 (50),
  NTitle        CHAR (9),
  OLine         VARCHAR2 (80),
  PRIMARY KEY (Issn),
  UNIQUE (Title));
```

Create a view and report about all the titles changed after a certain serial using "CONNECT BY"

```
SQL> create view ntitleCL
  2 as select ISSN, title, StartY, ntitle
  3 from serial
  4 start with issn='0316-0003'
  5 connect by issn=prior ntitle
  6 ;
```

```
SQL> set linesize 120
SQL> column ISSN format a10
SQL> column TITLE format a30
SQL> column StartYear format a5
SQL> column NEWTITLE format a10
SQL> title 'New title of college Libraries'
SQL> select * from ntitleCL;
```

```
Tue Dec 05                                page    1
      New title of college Libraries

ISSN          TITLE                                STAR  NTITLE
-----
0316-0003    College Libraries                            1960  0016-1009
0016-1009    Libraries In Universities                        1973  0016-1568
0016-1568    Academic Librarianship                          1985
```