Tutorial 8 (SC2207-CZ2007)

SQL

Classroom Exercise

1. Consider the following schema containing airport flight information. Primary Keys are in bold.

FLIGHTS (**flno:integer**, from:string, to:string, distance:integer, departs:time, arrives:time)
AIRCRAFT (**aid:integer**, aname:string, cruisingrange:integer)
CERTIFIED (**eid:integer**, **aid:integer**)
EMPLOYEES (**eid:integer**, ename:string, salary:integer)

Note that the Employees relation describes pilots and other kinds of employees as well; every pilot is certified for some aircraft (otherwise, he or she would not qualify as a pilot), and only pilots are certified to fly.

Give an SQL expression for the following query. Your solution should be only one SQL statement.

Find the eids of employees who make the second highest salary

2. The relational database schema for a Car-insurance company is given below.

person (driver-id, name, address)

car (license, year, model)

accident (report-number, location, date)

owns (driver-id, license)

participated (report-number, driver-id, license, damageamount)

employee (person-name, street, city)

works (person-name, company-name, salary)

company (company-name, city)

manages (person-name, manager-name)

(i) Modify the database so that Mark now lives in "Newstreet, Newtown" (i.e. the street changes to Newstreet and city changes to Newtown for Mark).

(ii) Give all employees of “FaceMatch” a 10 percent salary raise.

(iii) Give all managers of “FaceMatch” a 10 percent salary raise.

3. Consider the relation schema: STUDENT (name, ssn, majorcode, gpa).

Suppose the following view is defined on it: STUDENT-NO-GPA(name, ssn, majorcode).

(i) Is it possible to insert a tuple (’X’, 123, ’CMSC’) into the view? If yes, what should be the result of it? If not, why not?

(ii) Now consider the following view.

```
CREATE VIEW MAJOR-AVG AS
SELECT majorcode, avg(gpa) AS avggpa
FROM STUDENT
GROUP BY majorcode;
```

Is it possible now to insert a tuple (’CMSC’, 3.2) into this view? If yes, what should be the result of it? If not, why not?

4. The following schema relates to holiday chalets that government employees may rent:

EMPLOYEE (emp-id, name, category, salary, age)

CHALET (chalet-id, location, price-per-day)

RENTAL (emp-id, chalet-id, start-date, no-of-days)

Note: Examples of category are Division I, Division II, etc.

Consider the view defined over the above schema:

```
CREATE VIEW X-VIEW
```

```
AS SELECT AVG (PRICE)
FROM CHALET C, RENTAL R,
WHERE C.CHALET-ID = R.CHALET-ID
AND NO-OF-DAYS > 7
GROUP BY LOCATION;
```

Describe what this view shows and give three reasons why it is generally considered not updatable.