KEY Midterm 1 157A Fall 2012 10/22

Class-id Name

Part III Describe your contribution in the team project before mid night today.

Part I Questions and Answers (10 pts EACH)

1. (DB3) Please write SQL for
   (a) $\sigma_{\text{length} \geq 100}(\text{MOVIES})$
   (b) $\pi_{\text{title}, \text{year}, \text{length}}(\text{MOVIES})$

P14 Simple.ppt
- Selection
- (SELECT *
  FROM Movies
  WHERE studioName = 'Disney'
  AND year = 1990);
- projection
  SELECT title, length
  FROM MOVIES

2. (DB1) Let SUPPLIERS and PARTS relations be denoted by $S$ and $P$ respectively
   Please write SQL for
   (a) Cartesian Product $S \times P$
p.20
   SELECT *
   FROM Movies, MovieExec
   (b) Natural Join $S \bowtie P$
P23.
   SELECT
   S.SNUM, S.SNAME, S.STATUS, S.CITY, P.PNUM, P.PNAME, P.COLOR, P.WEIGHT
   FROM SUPPLIERS S, PARTS P
   WHERE S.CITY= P.CITY;
3. (DB2) Please write an SQL to retrieve the last name (LNAME) of each employee whose home address contains BELLAIRE

```sql
SELECT E.LNAME 
FROM EMPLOYEE E 
WHERE E.ADDRESS LIKE '%BELLAIRE%';
```

4 (DB2) Write the output of or the meaning in English in the following SQL

```sql
SELECT E.SSN, E.FNAME, E.LNAME FROM EMPLOYEE E 
WHERE EXISTS (SELECT * FROM DEPENDENT D WHERE E.SSN = D.DEPSSN) 
AND EXISTS (SELECT * FROM DEPARTMENT P WHERE E.SSN = P.MGRSSN);
```

English statement (I did explain in class)
Write the SSN, first name, last name of an employee
Who has dependent and is a manager

5. (DB3) Please write an SQL to retrieve supplier’s names who supply ‘P2’.

```sql
SELECT SNAME 
FROM SUPPLIERS 
WHERE SNUM in (SELECT SNUM 
FROM SHIPMENTS 
WHERE PNUM='P2')
```
Part II

1. (DB3)

To retrieves title of the movies whose length is unknown
Which of the following SQL is correct

a) *SELECT Title FROM Movies WHERE length is null;
b) SELECT Title FROM Movies WHERE length = null;
c) SELECT Title FROM Movies WHERE length = 0;
d) None of the above

2. (DB1)

SELECT SNUM, STATUS
FROM SUPPLIERS
WHERE CITY = 'PARIS'
ORDER BY STATUS DESC;

The output is

a) *S3 30
   S2 10
b) S2 10
   S3 30
c) S3 10
   S2 30
d) S2 30
   S3 10
e) None of the above

3. (DB3)

The output of the following SQL is a relation whose column names are

SELECT title as Name, length as Hours
FROM Movies
WHERE studioName = 'DISNEY' and AND year = 1990;

(a) Title and length
(b) *Name and Hours
(c) Both are correct
(d) Both are incorrect
(e) None of the above

4. (DB3)
SELECT *
FROM Movies, MovieExec
WHERE title = 'STAR''s WARS'
AND producerC# = cert#;

What kind of operation is this SQL performing
a) Equi join
b) Natural join
c) Cartesian product
d) Inequality join
e) None of the above

5.

SELECT SNAME
FROM SUPPLIERS s, (SELECT SNUM
FROM SHIPMENTS WHERE PNUM='P2') t
Where s.snum = t.snum;

What kind of operation is this SQL performing
a) Temp Join query
b) Join query
c) Sub query
d) None of the above

c) Sub query
d) None of the above

6. Will the following SQL

SELECT SNAME
FROM SUPPLIERS s, SHIPMENTS sh
Where sh. pnum='P2' and s.snum = sh.snum;

Produces the same result as previous one

(a) True (b) False

7. SELECT Star1.name, Star2.name FROM MovieStar Star1, MovieStar Star2
   WHERE Star1.address = Star2.address AND Star1.name < Star2.name;
   The role of the second condition is to avoid the repetition of outputs
   What would happen if we use <>?

   a) The output will not repeat
   b) The output will repeat
   c) None of the above

8. The schema of Movies_e indicates TITLE has data type VARCHAR2(22)
The schema of Starsin_e indicates MOVIE_TITLE has data type CHAR2(22)

The output of

\[
\begin{align*}
& (\text{SELECT title FROM Movies_e}) \\
& \quad \text{Intersect} \nonumber \\
& (\text{SELECT movieTitle FROM StarsIN_e}); 
\end{align*}
\]

is always “no row selected.” Why?

a) * Because the data types of “title” and “movieTitle” are different

b) Some rows may be selected

9. (DB3)

\[
\begin{align*}
& \text{SELECT name} \\
& \quad \text{FROM MovieExec} \\
& \quad \text{WHERE cert# IN} \\
& \quad \quad (\text{SELECT producerC#} \\
& \quad \quad \quad \text{FROM Movies} \\
& \quad \quad \quad \text{WHERE (title, year) IN} \\
& \quad \quad \quad \quad (\text{SELECT movieTitle, movieYear} \\
& \quad \quad \quad \quad \quad \text{FROM StarsIN} \\
& \quad \quad \quad \quad \quad \text{WHERE starName = 'SAMUEL HENRY'}); 
\end{align*}
\]

Who should be in the output:

NAME

---------------------

a) * JAMES CAMERON

b) DANNY BOYLE

c) PETER JACKSON

d) CATHERINE WINDER

e) None of the above

10. (DB3) What will be the output of following query:

\[
\begin{align*}
& \text{SELECT name} \\
& \quad \text{FROM MovieExec} \\
& \quad \text{WHERE cert# NOT in} \\
& \quad \quad (\text{SELECT producerC#} \\
& \quad \quad \quad \text{FROM Movies} \\
& \quad \quad \quad \text{WHERE (title, year) IN} \\
& \quad \quad \quad \quad (\text{SELECT movieTitle, movieYear} \\
& \quad \quad \quad \quad \quad \text{FROM StarsIN} \\
& \quad \quad \quad \quad \quad \text{WHERE starName = 'SAMUEL HENRY'}); 
\end{align*}
\]
Extra credits

11. (DB3) :
    SELECT name
    FROM   MovieExec
    WHERE  cert# =
        (SELECT producerC#
         FROM   Movies
         WHERE (title, year) IN
            (SELECT movieTitle, movieYear
             FROM   StarsIN
             WHERE  starName = 'SAMUEL HENRY')
        );

    The output is
    NAME
    ------------------------
    JAMES CAMERON
    (a) *True (b) False

12. (DB3) :
    SELECT name
    FROM   MovieExec
    WHERE  cert# =
        (SELECT producerC#
         FROM   Movies
         WHERE (title, year) NOT IN
            (SELECT movieTitle, movieYear
             FROM   StarsIN
             WHERE  starName = 'SAMUEL HENRY')
        );

    The output is
    ERROR at line 4:
RA-01427: single-row subquery returns more than one row

(a) * True (b) False

13. (DB3) :

```
SELECT name
FROM   MovieExec
WHERE  cert# in
   (SELECT producerC#
        FROM   Movies
        WHERE  (title, year) NOT IN
               (SELECT movieTitle, movieYear
                FROM   StarsIN
                WHERE  starName = 'SAMUEL HENRY'));
```

The output is

```
NAME
-----------------------------
CATHERINE WINDER
DANNY BOYLE
Darren Aronofsky
DAN BRODER
```

(a) * True (b) False