### Alex Lema

## Lemac001

## **Problem 1**

1.

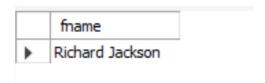
2.

3.

```
23 • SELECT DISTINCT C.name FROM cs4707.Class C
        WHERE C.room = 'R128'
 25 ⊝ OR C.name IN (
        SELECT E.cname
 26
        FROM cs4707.Enrolled E
 27
        GROUP BY E.cname
 28
        HAVING COUNT(*)>=5);
 29
                                        | Export: | | Wrap Cell Content: IA
Archaeology of the Incas
  Dairy Herd Management
  Data Structures
  Database Systems
  Intoduction to Math
  Operating System Design
  Patent Law
```

```
mysql> SELECT DISTINCT S.sname FROM cs4707.Student S, cs4707.Enrolled E, cs4707.Class C
    -> WHERE
    -> S.snum
    -> IN
    -> (SELECT E1.snum FROM cs4707.Enrolled E1, cs4707.Enrolled E2, cs4707.Class C1, cs4707.Class C2
-> WHERE E1.snum = E2.snum AND E1.cname = E2.cname AND E1.cname = C1.name
    -> AND E2.cname = C2.name AND C1.meets_at = C2.meets_at);
  sname
  Kenneth Hill
  Juan Rodriguez
  Ana Lopez
  Karen Scott
  Joseph Thompson
  Christopher Garcia
  Paul Hall
  Lisa Walker
  Luis Hernandez
  Susan Martin
  Betty Adams
11 rows in set (0.00 sec)
```

5.



6.

```
mysql> SELECT DISTINCT F.fname
   -> FROM cs4707.Faculty F WHERE 5 > (
   -> SELECT COUNT(E.snum)
   -> FROM cs4707.Class C, cs4707.Enrolled E
   -> WHERE C.name = E.cname AND C.fid = F.fid
 fname
 John Williams
 Elizabeth Taylor
 Mary Johnson
 William Moore
 James Smith
 Barbara Wilson
 Patricia Jones
 Michael Miller
 Robert Brown
 David Anderson
 Richard Jackson
 Ulysses Teach
 Jennifer Thomas
3 rows in set (0.00 sec)
```

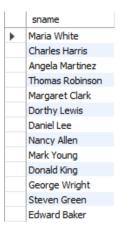
8.

9.

10.

	sname	
•	Ana Lopez	
	Juan Rodriguez	

#### 11.



### 12

	level	age
١	FR	17
	SO	18
	SO	19
	JR	20
	SR	21
	SR	22

## Problem 2.

```
156 •
         SELECT DISTINCT E.snum
157
         FROM cs4707.Enrolled E

→ WHERE E.snum NOT IN (
158
           SELECT derived.snum
159
           FROM(
160
            SELECT DISTINCT E.snum
161
162
           FROM cs4707.Enrolled E, cs4707.Grade G
           WHERE E.snum = G.snum
163
164
            )derived );
Export: Wrap Cell Content: IA
  snum
556784565
```

# Problem 3.

```
172 •
          SELECT grade_data.cname, grade_data.sname, MAX(grade_data.score) AS high_score
173
174
              -- Get the students for each class with their scores
175
              SELECT * FROM cs4707.Grade G
              NATURAL JOIN cs4707.Student S
176
              ORDER BY score, S.age
177
          )grade_data GROUP BY cname;
178
<
Export: Wrap Cell Content: IA
   cname
                        sname
                                       high_score
  Database Systems
                       Joseph Thompson
                                       100
   Operating System Design Luis Hernandez 100
   Data Structures
                       Karen Scott
                                       100
   Communication Networks Ana Lopez
                                      87
  Optical Electronics
                       Luis Hernandez
                                      87
  Perception
                   Juan Rodriguez 87
  Social Cognition Social Cognition Odriguez
Patent Law
                                      87
                                     65
   Urban Economics
                      Betty Adams
                                       45
```

### Problem 4.

```
186 • ⊝ SELECT * FROM(
187
             SELECT *, RANK() OVER (ORDER BY G.score DESC) AS ranking FROM cs4707.Grade G
188
             NATURAL JOIN cs4707.Student S
         WHERE G.cname = 'Operating System Design'
189
             ORDER BY G.score DESC ,S.sname ASC, G.cname , S.age
190
         )ranker
191
192
         WHERE ranker.ranking =2
         ORDER BY ranker.snum LIMIT 0,1;
193
<
Result Grid Filter Rows:
                                        Export: Wrap Cell Content: IA
   snum
             cname
                                score sname
                                                     major
                                                               level age ranking
▶ 115987938 Operating System Design 98
                                      Christopher Garcia Computer Science JR 20
                                                                               2
```

### Problem 5.

```
mysql> SELECT COUNT(*) AS C
-> FROM cs4707.Student S
-> GROUP BY S.sname
-> HAVING C > 1;
Empty set (0.00 sec)
```

### Problem 6.

```
SELECT sname, RANK() OVER (ORDER BY G.score DESC) AS ranking FROM cs4707.Grade G
206
207
        NATURAL JOIN cs4707.Student S
208
        WHERE G.cname = 'Operating System Design'
209
       ORDER BY G.score DESC;
                                                                                                   Export: Wrap Cell Content: IA
sname
                ranking
Luis Hernandez
                1
  Ana Lopez
  Karen Scott
  Christopher Garcia 2
  Lisa Walker
  Joseph Thompson 6
```

## Problem 7.

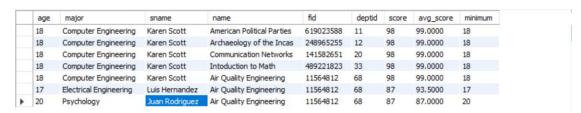
```
nysql> SELECT DISTINCT C.name
   -> FROM cs4707.Class C
   -> WHERE C.name NOT IN (
   -> SELECT DISTINCT P.cname
   -> FROM cs4707.Prerequisite P
 name
 Air Quality Engineering
 American Political Parties
 Archaeology of the Incas
 Aviation Accident Investigation
 Data Structures
 Intoduction to Math
 Introductory Latin
 Marketing Research
Operating System Design
 Optical Electronics
 Orbital Mechanics
 Organic Chemistry
 Patent Law
 Perception
 Seminar in American Art
Social Cognition
 Urban Economics
7 rows in set (0.00 sec)
```

### Problem 8.

```
mysql> SELECT * FROM cs4707.Prerequisite P WHERE P.cname = 'Operating System Design'
-> UNION
-> SELECT * FROM cs4707.Prerequisite P WHERE P.cname = 'Multivariate Analysis';
```

### Problem 9.

### Problem 10.



### Problem 11.

```
Query OK, 4 rows affected (0.13 sec)
Rows matched: 4 Changed: 4 Warnings: 0
```

## **After**