Assignment 2
Due Date: October 23, 2014 (submit answers as hard copy)

[Q.1] Answer the following questions

(a) Explain the following query in English (based on company database)

```sql
SELECT FNAME, LNAME, SSN
FROM EMPLOYEE
WHERE NOT EXISTS (SELECT *
FROM WORKS_ON B
WHERE (B.PNO IN (SELECT PNUMBER
FROM PROJECT
WHERE DNUM = 5)
AND
NOT EXISTS (SELECT *
FROM WORKS_ON C
WHERE C.ESSN = SSN AND C.PNO = B.PNO))
);
```

(b) Modify the query to list employees who do not work all the projects controlled by the department number 5.

(c) Modify the query to list employees who work on any of the projects controlled by department number 5.

(d) Write SQL statements (in MySQL) to get intersection, difference, and union sets of the following two tables (Use temporary tables temp1 and temp2 to get intersection and difference of two sets).

```sql
SELECT PNAME
FROM PROJECT, DEPARTMENT, EMPLOYEE
WHERE DNUM=DNUMBER AND MGRSSN=SSN AND
LNAME='Smith';

SELECT PNAME
FROM PROJECT
WORKS_ON, EMPLOYEE
WHERE PNUMBER=PNO AND
ESSN=SSN AND LNAME='Smith';
```

(e) Explain why updates on materialized view are often difficult to perform.

[Q.2.] Answer the following questions based on tennis database

(a) Create a view named “Towns” that holds all town names from the PLAYERS table, and show the virtual contents of this new view.

(b) Create a view “Cplayers” that holds the player numbers and league numbers of all players who have a league number, and show the virtual contents of this view.

(c) Create a view STRATFORDERS that holds the player number, name, initials, and date of birth of each player who lives in Stratford, and show the virtual contents of this new view.

(d) For each town, create a view named “Residents” that holds the name of the town and the number of players who live in that town, and show the virtual contents of this new view.
(e) Explain what the following three SQL statements perform.

```
DROP VIEW IF EXISTS DIGITS;

CREATE VIEW DIGITS AS
SELECT 0 DIGIT UNION SELECT 1 UNION
SELECT 2 UNION SELECT 3 UNION
SELECT 4 UNION SELECT 5 UNION
SELECT 6 UNION SELECT 7 UNION
SELECT 8 UNION SELECT 9
;
SELECT * FROM DIGITS;
```

(f) Get the player and league numbers of the players whose player numbers are from 6 to 44.

(g) Remove the player whose league number is 7060.

(h) Get the different league numbers from Player, and sort the result in descending order.

(i) Get the five lowest league numbers with the corresponding player numbers and names from the PLAYERS table.

(j) Get the numbers of the top three best players. The best player is defined as the person with the highest number of matches won.

(k) Get the average of the four lowest penalty amounts.

(l) Get the numbers and names of the three players who paid the highest total amount of penalties.