DBMSL ASSIGNMENT - 3

Roll No. : 31446

Assignment No 3 (based on Student schema)

- Student (s_id, Drive_id,T_id,s_name,CGPA,s_branch,s_dob)
- Placement Drive(Drive_id, Pcompany_name,package,location)
- Training (T_id,Tcompany_name,T_Fee,T_date)

Use the tables created in assignment no 2 and execute the following queries:

1. Find the Student details and Placement details using NATURAL JOIN.

2. Find all the student details with company_name who have conducted in same drive

3. List all the Student name and Student branch of Student having package 5 LPA

4.List all the student names ,company_name having T_fee more than 20000

5. Display all training details attended by “shantanu” in year 2011

6. list the total number of companies who conduct training before 2015

7. List the students name with company ‘Microsoft’ and location ’Thane’

8. Find the names of all Students who have joined ‘Microsoft ‘ training in 2015 .

9. Create a view showing the Student and Training details.

10. Perform Manipulation on simple view-Insert, update, delete, drop view.

A3: Guidelines

Natural Join, Inner Join/Equi Join, Left Outer Join, Right Outer Join, Count Join, 2 queries on Subquery, complex view and manipulation on simple view must be covered.

```
CREATE TABLE PlacementDrive (
    Drive_id INT AUTO_INCREMENT PRIMARY KEY,
    Pcompany_name VARCHAR(50),
    package DECIMAL(10,2),
    location VARCHAR(50)
);

DESC PlacementDrive;
+---------------+---------------+------+-----+---------+----------------+
| Field         | Type          | Null | Key | Default | Extra          |
+---------------+---------------+------+-----+---------+----------------+
| Drive_id      | int           | NO   | PRI | NULL    | auto_increment |
| Pcompany_name | varchar(50)   | YES  |     | NULL    |                |
| package       | decimal(10,2) | YES  |     | NULL    |                |
| location      | varchar(50)   | YES  |     | NULL    |                |
+---------------+---------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)


CREATE TABLE Training (
    T_id INT AUTO_INCREMENT PRIMARY KEY,
    Tcompany_name VARCHAR(50),
    T_Fee DECIMAL(10,2),
    T_date DATE
);

DESC Training;
+---------------+---------------+------+-----+---------+----------------+
| Field         | Type          | Null | Key | Default | Extra          |
+---------------+---------------+------+-----+---------+----------------+
| T_id          | int           | NO   | PRI | NULL    | auto_increment |
| Tcompany_name | varchar(50)   | YES  |     | NULL    |                |
| T_Fee         | decimal(10,2) | YES  |     | NULL    |                |
| T_date        | date          | YES  |     | NULL    |                |
+---------------+---------------+------+-----+---------+----------------+
4 rows in set (0.01 sec)


CREATE TABLE Student (
    s_id INT AUTO_INCREMENT PRIMARY KEY,
    Drive_id INT,
    T_id INT,
    s_name VARCHAR(50),
    CGPA DECIMAL(3,2),
    s_branch VARCHAR(50),
    s_dob DATE,
    FOREIGN KEY (Drive_id) REFERENCES PlacementDrive(Drive_id) ON DELETE
CASCADE,
    FOREIGN KEY (T_id) REFERENCES Training(T_id) ON DELETE CASCADE
);

DESC Student;
+----------+-------------+------+-----+---------+----------------+
| Field    | Type        | Null | Key | Default | Extra          |
+----------+-------------+------+-----+---------+----------------+
| s_id     | int         | NO   | PRI | NULL    | auto_increment |
| Drive_id | int         | YES  | MUL | NULL    |                |
| T_id     | int         | YES  | MUL | NULL    |                |
| s_name   | varchar(50) | YES  |     | NULL    |                |
| CGPA     | decimal(3,2)| YES  |     | NULL    |                |
| s_branch | varchar(50) | YES  |     | NULL    |                |
| s_dob    | date        | YES  |     | NULL    |                |
+----------+-------------+------+-----+---------+----------------+
7 rows in set (0.00 sec)
```

```
INSERT INTO PlacementDrive (Pcompany_name, package, location) VALUES
('Microsoft', 7.50, 'Thane'),
('Google', 6.00, 'Mumbai'),
('Amazon', 5.00, 'Bangalore'),
('Facebook', 4.50, 'Pune'),
('Microsoft', 5.00, 'Thane');

SELECT * FROM PlacementDrive;
+----------+---------------+---------+-----------+
| Drive_id | Pcompany_name | package | location  |
+----------+---------------+---------+-----------+
|        1 | Microsoft     |    7.50 | Thane     |
|        2 | Google        |    6.00 | Mumbai    |
|        3 | Amazon        |    5.00 | Bangalore |
|        4 | Facebook      |    4.50 | Pune      |
|        5 | Microsoft     |    5.00 | Thane     |
+----------+---------------+---------+-----------+
5 rows in set (0.00 sec)


INSERT INTO Training (Tcompany_name, T_Fee, T_date) VALUES
('Microsoft', 25000, '2015-03-15'),
('Google', 18000, '2014-06-10'),
('Amazon', 22000, '2010-12-05'),
('Facebook', 15000, '2011-09-01'),
('Microsoft', 30000, '2011-07-20');

SELECT * FROM Training;
+------+---------------+----------+------------+
| T_id | Tcompany_name | T_Fee    | T_date     |
+------+---------------+----------+------------+
|    1 | Microsoft     | 25000.00 | 2015-03-15 |
|    2 | Google        | 18000.00 | 2014-06-10 |
|    3 | Amazon        | 22000.00 | 2010-12-05 |
|    4 | Facebook      | 15000.00 | 2011-09-01 |
|    5 | Microsoft     | 30000.00 | 2011-07-20 |
+------+---------------+----------+------------+
5 rows in set (0.00 sec)


INSERT INTO Student (Drive_id, T_id, s_name, CGPA, s_branch, s_dob) VALUES
(1, 1, 'Shantanu', 8.5, 'CSE', '1993-08-15'),
(2, 2, 'Anita', 9.1, 'ECE', '1992-05-10'),
(3, 3, 'Rahul', 7.8, 'ME', '1994-11-21'),
(4, 4, 'Priya', 8.9, 'CSE', '1993-01-12'),
(5, 5, 'Shantanu', 8.5, 'CSE', '1993-08-15'),
(1, 1, 'Rohit', 7.5, 'IT', '1993-03-05'),
(2, 2, 'Sneha', 8.3, 'ECE', '1992-07-20'),
(3, 3, 'Karan', 6.9, 'ME', '1994-12-01'),
(4, 4, 'Deepa', 7.7, 'CSE', '1993-04-30'),
(5, 5, 'Maya', 9.0, 'CSE', '1993-09-17');

SELECT * FROM Student;
+------+----------+------+----------+------+----------+------------+
| s_id | Drive_id | T_id | s_name   | CGPA | s_branch | s_dob      |
+------+----------+------+----------+------+----------+------------+
|    1 |        1 |    1 | Shantanu | 8.50 | CSE      | 1993-08-15 |
|    2 |        2 |    2 | Anita    | 9.10 | ECE      | 1992-05-10 |
|    3 |        3 |    3 | Rahul    | 7.80 | ME       | 1994-11-21 |
|    4 |        4 |    4 | Priya    | 8.90 | CSE      | 1993-01-12 |
|    5 |        5 |    5 | Shantanu | 8.50 | CSE      | 1993-08-15 |
|    6 |        1 |    1 | Rohit    | 7.50 | IT       | 1993-03-05 |
```

```
|    7 |        2 |    2 | Sneha    | 8.30 | ECE      | 1992-07-20 |
|    8 |        3 |    3 | Karan    | 6.90 | ME       | 1994-12-01 |
|    9 |        4 |    4 | Deepa    | 7.70 | CSE      | 1993-04-30 |
|   10 |        5 |    5 | Maya     | 9.00 | CSE      | 1993-09-17 |
+------+----------+------+----------+------+----------+------------+
10 rows in set (0.00 sec)
```

1. Find the Student details and Placement details using NATURAL JOIN.

```
SELECT * FROM Student NATURAL JOIN PlacementDrive;
```

```
+----------+------+------+----------+------+----------+------------+---------------+---------+-----------+
| Drive_id | s_id | T_id | s_name   | CGPA | s_branch | s_dob      | Pcompany_name | package | location  |
+----------+------+------+----------+------+----------+------------+---------------+---------+-----------+
|        1 |    1 |    1 | Shantanu | 8.50 | CSE      | 1993-08-15 | Microsoft     |    7.50 | Thane     |
|        1 |    6 |    1 | Rohit    | 7.50 | IT       | 1993-03-05 | Microsoft     |    7.50 | Thane     |
|        2 |    2 |    2 | Anita    | 9.10 | ECE      | 1992-05-10 | Google        |    6.00 | Mumbai    |
|        2 |    7 |    2 | Sneha    | 8.30 | ECE      | 1992-07-20 | Google        |    6.00 | Mumbai    |
|        3 |    3 |    3 | Rahul    | 7.80 | ME       | 1994-11-21 | Amazon        |    5.00 | Bangalore |
|        3 |    8 |    3 | Karan    | 6.90 | ME       | 1994-12-01 | Amazon        |    5.00 | Bangalore |
|        4 |    4 |    4 | Priya    | 8.90 | CSE      | 1993-01-12 | Facebook      |    4.50 | Pune      |
|        4 |    9 |    4 | Deepa    | 7.70 | CSE      | 1993-04-30 | Facebook      |    4.50 | Pune      |
|        5 |    5 |    5 | Shantanu | 8.50 | CSE      | 1993-08-15 | Microsoft     |    5.00 | Thane     |
|        5 |   10 |    5 | Maya     | 9.00 | CSE      | 1993-09-17 | Microsoft     |    5.00 | Thane     |
+----------+------+------+----------+------+----------+------------+---------------+---------+-----------+
10 rows in set (0.00 sec)
```

2. Find all the student details with company_name who have conducted in same drive

```
SELECT s.*, p.Pcompany_name
FROM Student s
JOIN PlacementDrive p ON s.Drive_id = p.Drive_id;
```

```
+------+----------+------+----------+------+----------+------------+---------------+
| s_id | Drive_id | T_id | s_name   | CGPA | s_branch | s_dob      | Pcompany_name |
+------+----------+------+----------+------+----------+------------+---------------+
|    1 |        1 |    1 | Shantanu | 8.50 | CSE      | 1993-08-15 | Microsoft     |
|    6 |        1 |    1 | Rohit    | 7.50 | IT       | 1993-03-05 | Microsoft     |
|    2 |        2 |    2 | Anita    | 9.10 | ECE      | 1992-05-10 | Google        |
|    7 |        2 |    2 | Sneha    | 8.30 | ECE      | 1992-07-20 | Google        |
|    3 |        3 |    3 | Rahul    | 7.80 | ME       | 1994-11-21 | Amazon        |
|    8 |        3 |    3 | Karan    | 6.90 | ME       | 1994-12-01 | Amazon        |
|    4 |        4 |    4 | Priya    | 8.90 | CSE      | 1993-01-12 | Facebook      |
|    9 |        4 |    4 | Deepa    | 7.70 | CSE      | 1993-04-30 | Facebook      |
|    5 |        5 |    5 | Shantanu | 8.50 | CSE      | 1993-08-15 | Microsoft     |
|   10 |        5 |    5 | Maya     | 9.00 | CSE      | 1993-09-17 | Microsoft     |
+------+----------+------+----------+------+----------+------------+---------------+
10 rows in set (0.00 sec)
```

3. List all the Student name and Student branch of Student having package 5 LPA

```
SELECT s.s_name, s.s_branch
FROM Student s
JOIN PlacementDrive p ON s.Drive_id = p.Drive_id
WHERE p.package = 5.00;
```

```
+----------+----------+
| s_name   | s_branch |
+----------+----------+
| Rahul    | ME       |
| Karan    | ME       |
| Shantanu | CSE      |
| Maya     | CSE      |
+----------+----------+
4 rows in set (0.00 sec)
```

4. List all the student names, company_name having T_fee more than 20000

```
SELECT s.s_name, t.Tcompany_name
FROM Student s
JOIN Training t ON s.T_id = t.T_id
WHERE t.T_Fee > 20000;
+----------+---------------+
| s_name   | Tcompany_name |
+----------+---------------+
| Shantanu | Microsoft     |
| Rohit    | Microsoft     |
| Rahul    | Amazon        |
| Karan    | Amazon        |
| Shantanu | Microsoft     |
| Maya     | Microsoft     |
+----------+---------------+
6 rows in set (0.00 sec)
```

5. Display all training details attended by "shantanu" in year 2011

```
SELECT t.*
FROM Student s
JOIN Training t ON s.T_id = t.T_id
WHERE s.s_name = 'Shantanu' AND YEAR(t.T_date) = 2011;
+------+---------------+----------+------------+
| T_id | Tcompany_name | T_Fee    | T_date     |
+------+---------------+----------+------------+
|    5 | Microsoft     | 30000.00 | 2011-07-20 |
+------+---------------+----------+------------+
1 row in set (0.00 sec)
```

6. List the total number of companies who conduct training before 2015

```
SELECT COUNT(DISTINCT Tcompany_name) AS total_companies
FROM Training
WHERE YEAR(T_date) < 2015;
+-----------------+
| total_companies |
+-----------------+
|               4 |
+-----------------+
1 row in set (0.01 sec)
```

7. List the students name with company 'Microsoft' and location 'Thane'

```
SELECT DISTINCT s.s_name
FROM Student s
JOIN PlacementDrive p ON s.Drive_id = p.Drive_id
WHERE p.Pcompany_name = 'Microsoft' AND p.location = 'Thane';
+----------+
| s_name   |
+----------+
| Shantanu |
| Rohit    |
| Maya     |
+----------+
3 rows in set (0.01 sec)
```

8. Find the names of all Students who have joined 'Microsoft' training in 2015

```
SELECT s.s_name
FROM Student s
JOIN Training t ON s.T_id = t.T_id
WHERE t.Tcompany_name = 'Microsoft' AND YEAR(t.T_date) = 2015;
+----------+
| s_name   |
+----------+
| Shantanu |
| Rohit    |
+----------+
2 rows in set (0.00 sec)
```

9. Create a view showing the Student and Training details

```
CREATE VIEW StudentTrainingView AS
SELECT s.s_name, s.CGPA, s.s_branch, t.Tcompany_name, t.T_Fee, t.T_date
FROM Student s
JOIN Training t ON s.T_id = t.T_id;

SELECT * FROM StudentTrainingView;
+----------+------+----------+---------------+----------+------------+
| s_name   | CGPA | s_branch | Tcompany_name | T_Fee    | T_date     |
+----------+------+----------+---------------+----------+------------+
| Shantanu | 8.50 | CSE      | Microsoft     | 25000.00 | 2015-03-15 |
| Rohit    | 7.50 | IT       | Microsoft     | 25000.00 | 2015-03-15 |
| Anita    | 9.10 | ECE      | Google        | 18000.00 | 2014-06-10 |
| Sneha    | 8.30 | ECE      | Google        | 18000.00 | 2014-06-10 |
| Rahul    | 7.80 | ME       | Amazon        | 22000.00 | 2010-12-05 |
| Karan    | 6.90 | ME       | Amazon        | 22000.00 | 2010-12-05 |
| Priya    | 8.90 | CSE      | Facebook      | 15000.00 | 2011-09-01 |
| Deepa    | 7.70 | CSE      | Facebook      | 15000.00 | 2011-09-01 |
| Shantanu | 8.50 | CSE      | Microsoft     | 30000.00 | 2011-07-20 |
| Maya     | 9.00 | CSE      | Microsoft     | 30000.00 | 2011-07-20 |
+----------+------+----------+---------------+----------+------------+
10 rows in set (0.00 sec)
```

10. Perform Manipulation on simple view-Insert, Update, Delete, Drop view

```
CREATE VIEW simple_student_view AS
SELECT s_id, s_name, s_branch FROM Student;

SELECT * FROM simple_student_view;
+------+----------+----------+
| s_id | s_name   | s_branch |
+------+----------+----------+
|    1 | Shantanu | CSE      |
|    2 | Anita    | ECE      |
|    3 | Rahul    | ME       |
|    4 | Priya    | CSE      |
|    5 | Shantanu | CSE      |
|    6 | Rohit    | IT       |
|    7 | Sneha    | ECE      |
|    8 | Karan    | ME       |
|    9 | Deepa    | CSE      |
|   10 | Maya     | CSE      |
+------+----------+----------+
10 rows in set (0.00 sec)
```

INSERT

```
INSERT INTO simple_student_view (s_name, s_branch)
VALUES ('Ravi', 'ME');

SELECT * FROM simple_student_view;
+------+----------+----------+
| s_id | s_name   | s_branch |
+------+----------+----------+
|    1 | Shantanu | CSE      |
|    2 | Anita    | ECE      |
|    3 | Rahul    | ME       |
|    4 | Priya    | CSE      |
|    5 | Shantanu | CSE      |
|    6 | Rohit    | IT       |
|    7 | Sneha    | ECE      |
|    8 | Karan    | ME       |
|    9 | Deepa    | CSE      |
|   10 | Maya     | CSE      |
|   11 | Ravi     | ME       |
+------+----------+----------+
11 rows in set (0.00 sec)
```

UPDATE

```
UPDATE simple_student_view
SET s_branch = 'CSE'
WHERE s_name = 'Ravi';

SELECT * FROM simple_student_view;
+------+----------+----------+
| s_id | s_name   | s_branch |
+------+----------+----------+
|    1 | Shantanu | CSE      |
|    2 | Anita    | ECE      |
|    3 | Rahul    | ME       |
|    4 | Priya    | CSE      |
|    5 | Shantanu | CSE      |
|    6 | Rohit    | IT       |
|    7 | Sneha    | ECE      |
|    8 | Karan    | ME       |
|    9 | Deepa    | CSE      |
|   10 | Maya     | CSE      |
|   11 | Ravi     | CSE      |
+------+----------+----------+
11 rows in set (0.00 sec)
```

DELETE

```
DELETE FROM simple_student_view
WHERE s_name = 'Ravi';

SELECT * FROM simple_student_view;
+------+----------+----------+
| s_id | s_name   | s_branch |
+------+----------+----------+
|    1 | Shantanu | CSE      |
|    2 | Anita    | ECE      |
|    3 | Rahul    | ME       |
|    4 | Priya    | CSE      |
```

```
|    5 | Shantanu | CSE      |
|    6 | Rohit    | IT       |
|    7 | Sneha    | ECE      |
|    8 | Karan    | ME       |
|    9 | Deepa    | CSE      |
|   10 | Maya     | CSE      |
+------+----------+----------+
10 rows in set (0.00 sec)
```

DROP VIEW

```
DROP VIEW simple_student_view;
Query OK, 0 rows affected (0.24 sec)
```

COMPLEX VIEW

```
CREATE VIEW complex_view AS
SELECT p.Pcompany_name, COUNT(s.s_id) AS total_students
FROM Student s
JOIN PlacementDrive p ON s.Drive_id = p.Drive_id
GROUP BY p.Pcompany_name;

mysql> SELECT * FROM complex_view;
+---------------+----------------+
| Pcompany_name | total_students |
+---------------+----------------+
| Microsoft     |              4 |
| Google        |              2 |
| Amazon        |              2 |
| Facebook      |              2 |
+---------------+----------------+
4 rows in set (0.00 sec)
```

Inner Join

```
SELECT s.s_name, p.Pcompany_name
FROM Student s
INNER JOIN PlacementDrive p ON s.Drive_id = p.Drive_id;
+----------+---------------+
| s_name   | Pcompany_name |
+----------+---------------+
| Shantanu | Microsoft     |
| Rohit    | Microsoft     |
| Anita    | Google        |
| Sneha    | Google        |
| Rahul    | Amazon        |
| Karan    | Amazon        |
| Priya    | Facebook      |
| Deepa    | Facebook      |
| Shantanu | Microsoft     |
| Maya     | Microsoft     |
+----------+---------------+
10 rows in set (0.00 sec)
```

Left Outer Join

```
SELECT s.s_name, p.Pcompany_name
FROM Student s
LEFT JOIN PlacementDrive p ON s.Drive_id = p.Drive_id;
```

```
+----------+---------------+
| s_name   | Pcompany_name |
+----------+---------------+
| Shantanu | Microsoft     |
| Anita    | Google        |
| Rahul    | Amazon        |
| Priya    | Facebook      |
| Shantanu | Microsoft     |
| Rohit    | Microsoft     |
| Sneha    | Google        |
| Karan    | Amazon        |
| Deepa    | Facebook      |
| Maya     | Microsoft     |
+----------+---------------+
10 rows in set (0.00 sec)
```

Right Outer Join

```
SELECT s.s_name, p.Pcompany_name
FROM Student s
RIGHT JOIN PlacementDrive p ON s.Drive_id = p.Drive_id;
+----------+---------------+
| s_name   | Pcompany_name |
+----------+---------------+
| Shantanu | Microsoft     |
| Rohit    | Microsoft     |
| Anita    | Google        |
| Sneha    | Google        |
| Rahul    | Amazon        |
| Karan    | Amazon        |
| Priya    | Facebook      |
| Deepa    | Facebook      |
| Shantanu | Microsoft     |
| Maya     | Microsoft     |
+----------+---------------+
10 rows in set (0.00 sec)
```

COUNT

```
SELECT p.Pcompany_name, COUNT(s.s_id) AS student_count
FROM Student s
JOIN PlacementDrive p ON s.Drive_id = p.Drive_id
GROUP BY p.Pcompany_name;
+---------------+---------------+
| Pcompany_name | student_count |
+---------------+---------------+
| Microsoft     |             4 |
| Google        |             2 |
| Amazon        |             2 |
| Facebook      |             2 |
+---------------+---------------+
4 rows in set (0.00 sec)
```

SUBQUERY

E.G. - 1 : Find students whose training fee is more than average

```
SELECT s_name
FROM Student s
WHERE s.T_id IN (
    SELECT T_id FROM Training WHERE T_Fee > (SELECT AVG(T_Fee) FROM Training)
);
+----------+
| s_name   |
+----------+
| Shantanu |
| Rohit    |
| Shantanu |
| Maya     |
+----------+
4 rows in set (0.00 sec)
```

E.G. - 2 : Students who attended Google training

```
SELECT s_name
FROM Student
WHERE T_id = (SELECT T_id FROM Training WHERE Tcompany_name = 'Google');
+--------+
| s_name |
+--------+
| Anita  |
| Sneha  |
+--------+
2 rows in set (0.01 sec)
```