

## Suman Paudel (33)

### Assignment IV

#### Lab 4:

Prepare Lab Sheet of MYSQL Statements for following.

1. Create tables Teacher (Id INT PRIMARY KEY, Tname VARCHAR(20)) and Student (id INT PRIMARY KEY, Sname VARCHAR(20));

#### SQL Script:

```
CREATE TABLE Teacher (  
    Id INT PRIMARY KEY,  
    Tname VARCHAR(20)  
);  
  
CREATE TABLE Student (  
    Id INT PRIMARY KEY,  
    Sname VARCHAR(20)  
);
```

#### Output:

```
suman_33_company=# CREATE TABLE Teacher (  
    Id INT PRIMARY KEY,  
    Tname VARCHAR(20)  
);
```

```
CREATE TABLE Student (  
    Id INT PRIMARY KEY,  
    Sname VARCHAR(20)  
);
```

```
CREATE TABLE  
CREATE TABLE
```

```
suman_33_company=# |
```

2. Insert values like {(1,"Ram"), (2,"Hari"), (3,"Sita")} in Teacher and {(2,"Hari"), (3,"Sita"), (4,"Gita")} in Student.

**SQL Script:**

```
INSERT INTO Teacher (Id, Tname) VALUES
(1, 'Ram'),
(2, 'Hari'),
(3, 'Sita');

INSERT INTO Student (Id, Sname) VALUES
(2, 'Hari'),
(3, 'Sita'),
(4, 'Gita');
```

**Output:**

```
suman_33_company=# INSERT INTO Teacher (Id, Tname) VALUES
(1, 'Ram'),
(2, 'Hari'),
(3, 'Sita');

INSERT INTO Student (Id, Sname) VALUES
(2, 'Hari'),
(3, 'Sita'),
(4, 'Gita');
INSERT 0 3
INSERT 0 3
suman_33_company=# |
```

3. Write query to find Union of Teacher and Student.

**SQL Script:**

```
SELECT * FROM Teacher
UNION
SELECT * FROM Student;
```

**Output:**

```
suman_33_company=# select * from teacher;
 id | tname
----+-----
  1 | Ram
  2 | Hari
  3 | Sita
(3 rows)
```

```
suman_33_company=# select * from student;
 id | sname
----+-----
  2 | Hari
  3 | Sita
  4 | Gita
(3 rows)
```

```
suman_33_company=# SELECT * FROM Teacher
UNION
SELECT * FROM Student;
 id | tname
----+-----
  4 | Gita
  3 | Sita
  2 | Hari
  1 | Ram
(4 rows)
```

```
suman_33_company=# |
```

4. Write query to find Intersection of Teacher and Student.

**SQL Script:**

```
SELECT * FROM Teacher
INTERSECT
SELECT * FROM Student;
```

**Output:**

```
suman_33_company=# select * from teacher;
```

| id | tname |
|----|-------|
| 1  | Ram   |
| 2  | Hari  |
| 3  | Sita  |

(3 rows)

```
suman_33_company=# select * from student;
```

| id | sname |
|----|-------|
| 2  | Hari  |
| 3  | Sita  |
| 4  | Gita  |

(3 rows)

```
suman_33_company=# SELECT * FROM Teacher
INTERSECT
```

```
SELECT * FROM Student;
```

| id | tname |
|----|-------|
| 3  | Sita  |
| 2  | Hari  |

(2 rows)

```
suman_33_company=# |
```

5. Write query to find intersection of names Teacher and Student using Distinct and Inner Join.

**SQL Script For Left Join:**

```
SELECT DISTINCT t.Tname
FROM Teacher t
INNER JOIN Student s ON t.Tname = s.Sname;
```

## Output:

```
suman_33_company=# select * from teacher;
```

| id | tname |
|----|-------|
| 1  | Ram   |
| 2  | Hari  |
| 3  | Sita  |

(3 rows)

```
suman_33_company=# select * from student;
```

| id | sname |
|----|-------|
| 2  | Hari  |
| 3  | Sita  |
| 4  | Gita  |

(3 rows)

```
suman_33_company=# SELECT DISTINCT t.Tname
```

```
FROM Teacher t
```

```
INNER JOIN Student s ON t.Tname = s.Sname;
```

| tname |
|-------|
|-------|

|      |
|------|
| Hari |
|------|

|      |
|------|
| Sita |
|------|

(2 rows)

```
suman_33_company=# |
```

6. Write query to find intersection of names Teacher and Student using IN and Sub query.

**SQL Script:**

```
SELECT Tname
FROM Teacher
WHERE Tname IN (SELECT Sname FROM Student);
```

**Output:**

```
suman_33_company=# select * from teacher;
```

| id | tname |
|----|-------|
| 1  | Ram   |
| 2  | Hari  |
| 3  | Sita  |

(3 rows)

```
suman_33_company=# select * from student;
```

| id | sname |
|----|-------|
| 2  | Hari  |
| 3  | Sita  |
| 4  | Gita  |

(3 rows)

```
suman_33_company=# SELECT Tname
FROM Teacher
WHERE Tname IN (SELECT Sname FROM Student);
tname
```

|      |
|------|
| Hari |
| Sita |

(2 rows)

```
suman_33_company=# SELECT Tname
FROM Teacher
WHERE id IN (SELECT id FROM Student);
tname
```

|      |
|------|
| Hari |
| Sita |

(2 rows)

```
suman_33_company=# |
```

7. Write query to find Teacher MINUS Student using Left Join.

**SQL Script:**

```
SELECT t.Tname
FROM Teacher t
LEFT JOIN Student s ON t.Tname = s.Sname
WHERE s.Sname IS NULL;
```

**Output:**

```
suman_33_company=# select * from teacher;
 id | tname
----+-----
  1 | Ram
  2 | Hari
  3 | Sita
(3 rows)
```

```
suman_33_company=# select * from student;
 id | sname
----+-----
  2 | Hari
  3 | Sita
  4 | Gita
(3 rows)
```

```
suman_33_company=# SELECT t.Tname
FROM Teacher t
LEFT JOIN Student s ON t.Tname = s.Sname
WHERE s.Sname IS NULL;
 tname
-----
 Ram
(1 row)
```

8. Find the number of offices in the Office table from the COMPANY Database in Lab-1 using COUNT function.

**SQL Script:**

```
SELECT COUNT(*) AS num_offices
FROM Office;
```

## Output:

```
suman_33_company=# select * from office;
onumber |      oname      | country
-----+-----+-----
      1 | Suman_Office_33 | Nepal
      3 | Prabhat Ale     | USA
      4 | Anish Thapaliya | India
      5 | Gaurav Pandey   | Japan
      2 | Ntc_Suman_33    | Nepal
(5 rows)

suman_33_company=# SELECT COUNT(*) AS num_offices
FROM Office;
num_offices
-----
          5
(1 row)
```

9. Write a query to count the distinct names of Employees.

## SQL Script:

```
SELECT COUNT(DISTINCT Ename) AS distinct_names
FROM Employee;
```

## Output:

```
suman_33_company=# select * from employee;
ssn |      ename      | gender | bdate   |      address      | salary | ono | years_of_experience | marital_status
-----+-----+-----+-----+-----+-----+---+-----+-----
 33 | Suman Paudel    | M      | 1997-10-22 | Kathmanu, Nepal   | 30000.00 | 1 | 3 | Single
  1 | Rekha Thapa     | F      | 1992-03-22 | Kathmandu, Nepal  | 55000.00 | 2 | 5 | Married
  2 | KP Oli          | M      | 1978-11-08 | Bhaktapur, Nepal  | 72000.00 | 3 | 12 | Married
  3 | Puspa Kamal Dahal Pracanda | M      | 1990-09-01 | Lalitpur, Nepal   | 48000.00 | 4 | 3 | Married
  4 | Rabi Lamichane  | M      | 1983-04-30 | Chitwan, Nepal    | 60000.00 | 4 | 7 | Divorced
(5 rows)

suman_33_company=# SELECT COUNT(DISTINCT Ename) AS distinct_names
FROM Employee;
distinct_names
-----
          5
(1 row)
```



10. Write a query to find sum of salary of Employees.

### SQL Script:

```
SELECT SUM(Salary) AS total_salary
FROM Employee;
```

### Output:

```
suman_33_company=# select * from employee;
ssn |      ename      | gender |   bdate   |      address      | salary | ono | years_of_experience | marital_status
-----+-----+-----+-----+-----+-----+---+-----+-----
 33 | Suman Paudel    | M      | 1997-10-22 | Kathmanu, Nepal   | 30000.00 | 1  | 3 | Single
  1 | Rekha Thapa     | F      | 1992-03-22 | Kathmandu, Nepal  | 55000.00 | 2  | 5 | Married
  2 | KP Oli          | M      | 1978-11-08 | Bhaktapur, Nepal  | 72000.00 | 3  | 12 | Married
  3 | Puspa Kamal Dahal Pracanda | M      | 1990-09-01 | Lalitpur, Nepal   | 48000.00 | 4  | 3 | Married
  4 | Rabi Lamichane  | M      | 1983-04-30 | Chitwan, Nepal    | 60000.00 | 4  | 7 | Divorced
(5 rows)

suman_33_company=# SELECT SUM(Salary) AS total_salary FROM Employee;
total_salary
-----
 265000.00
(1 row)

suman_33_company=#
```

11. Write a query to find average of salary of Employees.

### SQL Script:

```
SELECT AVG(Salary) AS avg_salary
FROM Employee;
```

### Output:

```
suman_33_company=# select * from employee;
ssn |      ename      | gender |   bdate   |      address      | salary | ono | years_of_experience | marital_status
-----+-----+-----+-----+-----+-----+---+-----+-----
 33 | Suman Paudel    | M      | 1997-10-22 | Kathmanu, Nepal   | 30000.00 | 1  | 3 | Single
  1 | Rekha Thapa     | F      | 1992-03-22 | Kathmandu, Nepal  | 55000.00 | 2  | 5 | Married
  2 | KP Oli          | M      | 1978-11-08 | Bhaktapur, Nepal  | 72000.00 | 3  | 12 | Married
  3 | Puspa Kamal Dahal Pracanda | M      | 1990-09-01 | Lalitpur, Nepal   | 48000.00 | 4  | 3 | Married
  4 | Rabi Lamichane  | M      | 1983-04-30 | Chitwan, Nepal    | 60000.00 | 4  | 7 | Divorced
(5 rows)

suman_33_company=# SELECT ROUND(AVG(Salary)) AS avg_salary FROM Employee;
avg_salary
-----
 53000
(1 row)

suman_33_company=#
```

12. Write a query to find Maximum PF Amount from the PF Table.

SQL Script:

```
SELECT MAX(PFAmount) AS max_pf_amount
FROM PF;
```

Output:

```
suman_33_company=# select * from pf;
 pfid | ssn | pfcategoryname | amount | start_date | remarks
-----+-----+-----+-----+-----+-----
  1   | 33  | Retirement     | 50000.00 | 2022-01-01 | Regular contribution
  2   | 1   | Medical        | 20000.00 | 2022-02-15 | Health insurance
  3   | 2   | Education      | 30000.00 | 2022-03-01 | Child education fund
  4   | 3   | Retirement     | 16000.00 | 2022-04-01 | Additional contribution
  5   | 4   | Housing        | 40000.00 | 2022-05-01 |
  6   | 33  | Retirement     | 55000.00 | 2022-06-01 | Regular contribution
  7   | 1   | Medical        | 25000.00 | 2022-07-01 | Dental insurance
  8   | 2   | Education      | 35000.00 | 2022-08-01 | Child tuition
  9   | 3   | Retirement     | 65000.00 | 2022-09-01 | Additional contribution
 10   | 4   | Housing        | 45000.00 | 2022-10-01 |
(10 rows)

suman_33_company=# select max(amount) as max_amount from pf;
 max_amount
-----
 65000.00
(1 row)

suman_33_company=#
```

13. Write a query to find Minimum PF Amount from the PF Table.

SQL Script:

```
SELECT MIN(PFAmount) AS min_pf_amount
FROM PF;
```

Output:

```
suman_33_company=# select * from pf;
 pfid | ssn | pfcategoryname | amount | start_date | remarks
-----+-----+-----+-----+-----+-----
  1   | 33  | Retirement     | 50000.00 | 2022-01-01 | Regular contribution
  2   | 1   | Medical        | 20000.00 | 2022-02-15 | Health insurance
  3   | 2   | Education      | 30000.00 | 2022-03-01 | Child education fund
  4   | 3   | Retirement     | 16000.00 | 2022-04-01 | Additional contribution
  5   | 4   | Housing        | 40000.00 | 2022-05-01 |
  6   | 33  | Retirement     | 55000.00 | 2022-06-01 | Regular contribution
  7   | 1   | Medical        | 25000.00 | 2022-07-01 | Dental insurance
  8   | 2   | Education      | 35000.00 | 2022-08-01 | Child tuition
  9   | 3   | Retirement     | 65000.00 | 2022-09-01 | Additional contribution
 10   | 4   | Housing        | 45000.00 | 2022-10-01 |
(10 rows)

suman_33_company=# select min(amount) as min_salary from pf;
 min_salary
-----
 16000.00
(1 row)

suman_33_company=#
```