Assignment 4

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Question:

Create the Following tables:

EMP

Attribute	Data Type	Size	Constraints
Eno	Char	2	Primary key and first character must be “E”
Ename	Varchar2	10	Not null
City	Varchar2	10	Cities allowed “Chennai”,“Mumbai”, “Delhi”, “Kolkata”
Salary	Number	6	
Dno	Number	2	Foreign key references DEPT table

DEPT

Attribute	Data Type	Size	Constraints
Dno	Number	6	Primary key
DesDname	Varchar2	15	

PROJECT

Attribute	Data Type	Size	Constraints
Pno	Char	2	PK, first character must be “P”
Eno	Char	2	PK and FK references EMP

Insert at least five data values into the respective tables related with the following queries. Perform the following queries:

1. **Find the average salary of all employees.**
2. **List all the employee names whose salary is greater than 7000 and lesser than 18000.**
3. **Retrieve all information about employees where the Ename is 4 characters long and the first two characters are ‘AS’.**
4. **Display the number of employees in each department.**
5. **Find the difference between highest and lowest salary.**

Solution:

Creation of Tables

```
CREATE DATABASE Assignment_1;
USE Assignment_1;

--Creating EMP Table
CREATE TABLE EMP( Eno char(2), Ename Varchar(10), City Varchar(10), Salary
int(6), Dno int(2));

ALTER TABLE EMP ADD PRIMARY KEY(Eno);
ALTER TABLE EMP MODIFY COLUMN Ename varchar(10) NOT NULL;
ALTER TABLE EMP  ADD CHECK (SUBSTRING(Eno, 1, 1) = 'E');
ALTER TABLE EMP ADD CHECK (City = 'Chennai' OR City = 'Mumbai' OR City =
'Delhi' OR City = 'Kolkata');

--Creating DEPT Table
CREATE TABLE DEPT ( Dno int(6) PRIMARY KEY, DesDname varchar(15) );

--Creating Project Table
CREATE TABLE PROJECT ( Pno char(2) PRIMARY KEY , Eno char(2), FOREIGN
KEY(Eno) REFERENCES EMP(Eno) );
ALTER TABLE PROJECT ADD CHECK (LEFT(Pno, 1) = 'P');

ALTER TABLE EMP ADD FOREIGN KEY (Dno) REFERENCES DEPT(Dno);
ALTER TABLE EMP ADD FOREIGN KEY (Dno) REFERENCES DEPT(Dno);
```

```
MariaDB [Assignment_1]> show columns from EMP;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| Eno    | char(2)     | NO   | PRI | NULL    |       |
| Ename  | varchar(10) | NO   |     | NULL    |       |
| City   | varchar(10) | YES  |     | NULL    |       |
| Salary | int(6)      | YES  |     | NULL    |       |
| Dno    | int(2)      | YES  | MUL | NULL    |       |
+--------+-------------+------+-----+---------+-------+
5 rows in set (0.001 sec)
```

```
MariaDB [Assignment_1]> show columns from DEPT;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| Dno      | int(6)      | NO   | PRI | NULL    |       |
| DesDname | varchar(15) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
2 rows in set (0.001 sec)
```

```
MariaDB [Assignment_1]> show columns from PROJECT;
+-------+---------+------+-----+---------+-------+
| Field | Type    | Null | Key | Default | Extra |
+-------+---------+------+-----+---------+-------+
| Pno   | char(2) | NO   | PRI | NULL    |       |
| Eno   | char(2) | YES  | MUL | NULL    |       |
+-------+---------+------+-----+---------+-------+
2 rows in set (0.001 sec)
```

```sql
INSERT INTO DEPT VALUES
(1, 'Consulting'),
(2, 'Tech Support'),
(3, 'Marketing'),
(4, 'PR'),
(5, 'Development');

INSERT INTO EMP VALUES
("E1", "John", "Kolkata", 20000, 2),
("E2", "Emily", "Mumbai", 30000, 4),
("E3", "Richard", "Chennai", 50000, 5),
("E4", "Daniel", "Delhi", 40000, 1),
("E5", "Steve", "Mumbai", 30000, 3);

INSERT INTO PROJECT VALUES
('P1', 'E1'),
('P2', 'E2'),
('P3', 'E3'),
('P4', 'E4'),
('P5', 'E5');
```

```
MariaDB [Assignment_1]> SELECT * FROM EMP;
+-----+---------+---------+--------+------+
| Eno | Ename   | City    | Salary | Dno  |
+-----+---------+---------+--------+------+
| E1  | John    | Kolkata |  20000 |    2 |
| E2  | Emily   | Mumbai  |  30000 |    4 |
| E3  | Richard | Chennai |  50000 |    5 |
| E4  | Daniel  | Delhi   |  40000 |    1 |
| E5  | Steve   | Mumbai  |  30000 |    3 |
+-----+---------+---------+--------+------+
5 rows in set (0.010 sec)
```

```
MariaDB [Assignment_1]> SELECT * FROM DEPT;
+-----+--------------+
| Dno | DesDname     |
+-----+--------------+
|   1 | Consulting   |
|   2 | Tech Support |
|   3 | Marketing    |
|   4 | PR           |
|   5 | Development  |
+-----+--------------+
5 rows in set (0.001 sec)
```

```
MariaDB [Assignment_1]> SELECT * FROM PROJECT;
+-----+------+
| Pno | Eno  |
+-----+------+
| P1  | E1   |
| P2  | E2   |
| P3  | E3   |
| P4  | E4   |
| P5  | E5   |
+-----+------+
5 rows in set (0.001 sec)
```

Required Operations:

1. Find the average salary of all employees.

```
MariaDB [Assignment_1]> SELECT AVG(Salary) FROM EMP;
+-------------+
| AVG(Salary) |
+-------------+
|  34000.0000 |
+-------------+
1 row in set (0.001 sec)
```

2. List all the employee names whose salary is greater than 7000 and lesser than 18000.

```
MariaDB [Assignment_1]> SELECT Ename FROM EMP WHERE (Salary > 7000 AND Salary < 18000);
Empty set (0.001 sec)
```

3. Retrieve all information about employees where the Ename is 4 characters long and the first two characters are ‘AS’.

```
MariaDB [Assignment_1]> SELECT * FROM EMP WHERE LENGTH(Ename) = 4 AND LEFT(Ename, 2) = 'AS'
    -> ;
Empty set (0.001 sec)
```

4. Display the number of employees in each department.

```
MariaDB [Assignment_1]> SELECT COUNT(Eno),Dno FROM EMP GROUP BY Dno;
+------------+------+
| COUNT(Eno) | Dno  |
+------------+------+
|          1 |    1 |
|          1 |    2 |
|          1 |    3 |
|          1 |    4 |
|          1 |    5 |
+------------+------+
5 rows in set (0.001 sec)
```

5. Find the difference between highest and lowest salary.

```
MariaDB [Assignment_1]> SELECT MAX(Salary)-MIN(Salary) from EMP;
+------------------------+
| MAX(Salary)-MIN(Salary) |
+------------------------+
|                  30000 |
+------------------------+
1 row in set (0.001 sec)
```