

Assignment 4

Name: Sayantani Karmakar

Roll No: 20CS8024

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)
```

```
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)
```