MySQL Hands on Activities (Day 2) (Table Creation and Data Insertion)

- **Table Creation**

```
mysql> use projectdb;
Database changed
mysql> CREATE TABLE DEPARTMENT
    -> (DepartmentCode VARCHAR(10) PRIMARY KEY,
    -> DepartmentName VARCHAR(50));
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE PROJECT
    -> (ProjectId VARCHAR(20),
    -> ProjectName VARCHAR(50));
Query OK, 0 rows affected (0.04 sec)

mysql> ALTER TABLE PROJECT
    -> ADD PRIMARY KEY(ProjectId);
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> CREATE TABLE EMPLOYEEPROJECTS (
    -> EmployeeNumber NUMERIC(10),
    -> ProjectId VARCHAR(10),
    -> StartDate DATE,
    -> EndDate DATE,
    -> PRIMARY KEY(EmployeeNumber,ProjectId),
    -> FOREIGN KEY(EmployeeNumber) REFERENCES EMPLOYEE(EmployeeNumber),
    -> FOREIGN KEY(ProjectId) REFERENCES PROJECT(ProjectId));
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> CREATE TABLE EMPLOYEE
    -> (EmployeeNumber NUMERIC(10) PRIMARY KEY,
    -> EmployeeName VARCHAR(50) ,
    -> DateOfBirth DATE,
    -> DateOfJoining DATE,
    -> Designation VARCHAR(5),
    -> Salary NUMERIC(10,2),
    -> ManagerEmployeeNumber NUMERIC(10),
    -> DepartmentCode VARCHAR(10) REFERENCES DEPARTMENT(DepartmentCode));
Query OK, 0 rows affected (0.05 sec)
```

- **Table Description**

```
mysql> DESC PROJECT;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| ProjectId   | varchar(20) | NO   | PRI | NULL    |       |
| ProjectName | varchar(50) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> DESC EMPLOYEE;
+----------------------+--------------+------+-----+---------+-------+
| Field                | Type         | Null | Key | Default | Extra |
+----------------------+--------------+------+-----+---------+-------+
| EmployeeNumber       | decimal(10,0) | NO   | PRI | NULL    |       |
| EmployeeName         | varchar(50)  | YES  |     | NULL    |       |
| DateOfBirth          | date         | YES  |     | NULL    |       |
| DateOfJoining        | date         | YES  |     | NULL    |       |
| Designation          | varchar(5)   | YES  |     | NULL    |       |
| Salary               | decimal(10,2) | YES  |     | NULL    |       |
| ManagerEmployeeNumber | decimal(10,0) | YES  | MUL | NULL    |       |
| DepartmentCode       | varchar(10)  | YES  |     | NULL    |       |
+----------------------+--------------+------+-----+---------+-------+
```

```
mysql> DESC EMPLOYEEPROJECTS;
+----------------+---------------+------+-----+---------+-------+
| Field          | Type          | Null | Key | Default | Extra |
+----------------+---------------+------+-----+---------+-------+
| EmployeeNumber | decimal(10,0) | NO   | PRI | NULL    |       |
| ProjectId      | varchar(10)   | NO   | PRI | NULL    |       |
| StartDate      | date          | YES  |     | NULL    |       |
| EndDate        | date          | YES  |     | NULL    |       |
+----------------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

- **Modifying Tables**

```
mysql> ALTER TABLE EMPLOYEE
    -> ADD COLUMN DateofBirth DATE
    -> AFTER  EmployeeName;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE EMPLOYEE
   -> ADD CONSTRAINT DESIGNATION_CHECK
   -> CHECK(Designation IN ('CEO', 'MD', 'SM', 'M', 'TL', 'SSE', 'SE'));
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE EMPLOYEE
    -> ADD FOREIGN KEY(ManagerEmployeeNumber) REFERENCES EMPLOYEE(EmployeeNumber);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

- **Inserting Data**

```
mysql> INSERT INTO DEPATRMENT VALUES ('LKM', 'Learning and Knowledge Management');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO DEPATRMENT VALUES ('JavaCap', 'Java Capability');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO DEPATRMENT VALUES ('.NETCap', 'Dotnet Capability');
Query OK, 1 row affected (0.00 sec)

mysql> commit;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> INSERT INTO EMPLOYEE VALUES (7004, 'Lucy' , '1978-05-15', '2000-07-15' , 'MD' , 420000.00 , 7001, 'LKM');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7005, 'Amy' , '1978-09-16', '2000-11-16' , 'SM' , 240000.00 , 7002, 'JavaCap');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7006, 'Frank' , '1978-09-17', '2000-09-19' , 'SM' , 220000.00 , '7003', '.NETCap');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7007, 'Phil' , '1974-12-11','2000-11-12' , 'SM' , 220000.00 , '7004', 'LKM');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7008, 'Arnold' , '1984-03-13','2000-04-01' , 'TL' , 80000.00 , '7005', 'JavaCap');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7009, 'Jack' , '1984-09-23', '2000-06-23' , 'TL' , 88000.00 , '7006', '.NETCap');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7010, 'Justin' , '1984-11-07','2000-02-09' , 'TL' , 86000.00 , '7007', 'LKM');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7011, 'Megan' ,'1984-07-21', '2002-09-19' , 'TL' , 87000.00 , '7007', 'LKM');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7012, 'Stuart' , '1980-05-23', '2016-05-22' , 'SSE' , 35000.00 , '7008', 'JavaCap');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7013, 'Clarke' , '1994-02-24', '2016-05-22' , 'SSE' , 32000.00 , '7008', 'JavaCap');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES (7014, 'Darwin' , '1992-05-03','2016-05-22' , 'SE' , '30000.00' , '7009', '.NETCap');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7005, 'P1', '2014-07-01', null);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7006, 'P1', '2016-06-01', null);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7004, 'P2', '2014-07-16', '2015-05-11');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7013, 'P2', '2014-07-01', '2014-11-11');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7012, 'P2', '2016-06-01', '2015-02-28');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7007, 'P3', '2015-05-11', null);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7014, 'P3', '2014-11-11', null);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7013, 'P3', '2015-02-28', null);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7016, 'P2', '2014-07-16', null);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEEPROJECTS VALUES (7012, 'P1', '2015-03-01', null);
Query OK, 1 row affected (0.01 sec)

mysql> Commit;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> SELECT * FROM EMPLOYEE;
+----------------+--------------+-------------+--------------+-------------+----------+----------------------+----------------+
| EmployeeNumber | EmployeeName | DateofBirth | DateOfJoining | Designation | Salary   | ManagerEmployeeNumber | DepartmentCode |
+----------------+--------------+-------------+--------------+-------------+----------+----------------------+----------------+
|           7001 | Cynthya      | 1975-05-12  | 1997-02-14   | CEO         | 800000.00 |                 7001 | NULL           |
|           7002 | 03io         | 1976-02-14  | 1998-04-16   | MD          | 500000.00 |                 7001 | JavaCap        |
|           7003 | Jacob        | 1976-05-16  | 1998-05-16   | MD          | 400000.00 |                 7001 | .NETCap        |
|           7004 | Lucy         | 1978-05-15  | 2000-07-15   | MD          | 420000.00 |                 7001 | LKM            |
|           7005 | Amy          | 1978-09-16  | 2000-11-16   | SM          | 240000.00 |                 7002 | JavaCap        |
|           7006 | Frank        | 1978-09-17  | 2000-09-19   | SM          | 220000.00 |                 7003 | .NETCap        |
|           7007 | Phil         | 1974-12-11  | 2000-11-12   | SM          | 220000.00 |                 7004 | LKM            |
|           7008 | Arnold       | 1984-03-13  | 2000-04-01   | TL          |  80000.00 |                 7005 | JavaCap        |
|           7009 | Jack         | 1984-09-23  | 2000-06-23   | TL          |  88000.00 |                 7006 | .NETCap        |
|           7010 | Justin       | 1984-11-07  | 2000-02-09   | TL          |  86000.00 |                 7007 | LKM            |
|           7011 | Megan        | 1984-07-21  | 2002-09-19   | TL          |  87000.00 |                 7007 | LKM            |
|           7012 | Stuart       | 1980-05-23  | 2016-05-22   | SSE         |  35000.00 |                 7008 | JavaCap        |
|           7013 | Clarke       | 1994-02-24  | 2016-05-22   | SSE         |  32000.00 |                 7008 | JavaCap        |
|           7014 | Darwin       | 1992-05-03  | 2016-05-22   | SE          |  30000.00 |                 7009 | .NETCap        |
|           7015 | Chelsea      | 1994-01-19  | 2016-05-22   | SSE         |  38000.00 |                 7010 | LKM            |
|           7016 | Dan          | 1991-05-27  | 2016-07-07   | SE          |  30000.00 |                 7009 | .NETCap        |
|           7017 | Jimmy        | 1993-08-11  | 2016-07-07   | SE          |  32000.00 |                 7010 | LKM            |
|           7018 | James        | 1993-12-19  | 2016-07-07   | SE          |  35000.00 |                 NULL | .NETCap        |
|           7019 | Joseph       | 1992-12-31  | 2016-07-07   | SE          |  30000.00 |                 NULL | .NETCap        |
+----------------+--------------+-------------+--------------+-------------+----------+----------------------+----------------+
19 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM EMPLOYEEPROJECTS;
+----------------+-----------+------------+------------+
| EmployeeNumber | ProjectId | StartDate  | EndDate    |
+----------------+-----------+------------+------------+
|           7004 | P2        | 2014-07-16 | 2015-05-11 |
|           7005 | P1        | 2014-07-01 | NULL       |
|           7006 | P1        | 2016-06-01 | NULL       |
|           7007 | P3        | 2015-05-11 | NULL       |
|           7012 | P1        | 2015-03-01 | NULL       |
|           7012 | P2        | 2016-06-01 | 2015-02-28 |
|           7013 | P2        | 2014-07-01 | 2014-11-11 |
|           7013 | P3        | 2015-02-28 | NULL       |
|           7014 | P3        | 2014-11-11 | NULL       |
|           7016 | P2        | 2014-07-16 | NULL       |
+----------------+-----------+------------+------------+
10 rows in set (0.00 sec)
```

QUERIES

Write and execute SQL statements for the following:

• Increase the salary of ALL employees by 5%. Save the changes done to the database table.

```
mysql> UPDATE EMPLOYEE
    -> SET SALARY =SALARY*1.05;
Query OK, 19 rows affected (0.01 sec)
Rows matched: 19  Changed: 19  Warnings: 0

mysql> COMMIT;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM EMPLOYEE;
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
| EmployeeNumber | EmployeeName | DateofBirth | DateOfJoining | Designation | Salary    | ManagerEmployeeNumber | DepartmentCode |
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
|           7001 | Cynthya      | 1975-05-12  | 1997-02-14    | CEO         | 840000.00 |                 7001 | NULL           |
|           7002 | 03io         | 1976-02-14  | 1998-04-16    | MD          | 525000.00 |                 7001 | JavaCap        |
|           7003 | Jacob        | 1976-05-16  | 1998-05-16    | MD          | 420000.00 |                 7001 | .NETCap        |
|           7004 | Lucy         | 1978-05-15  | 2000-07-15    | MD          | 441000.00 |                 7001 | LKM            |
|           7005 | Amy          | 1978-09-16  | 2000-11-16    | SM          | 252000.00 |                 7002 | JavaCap        |
|           7006 | Frank        | 1978-09-17  | 2000-09-19    | SM          | 231000.00 |                 7003 | .NETCap        |
|           7007 | Phil         | 1974-12-11  | 2000-11-12    | SM          | 231000.00 |                 7004 | LKM            |
|           7008 | Arnold       | 1984-03-13  | 2000-04-01    | TL          |  84000.00 |                 7005 | JavaCap        |
|           7009 | Jack         | 1984-09-23  | 2000-06-23    | TL          |  92400.00 |                 7006 | .NETCap        |
|           7010 | Justin       | 1984-11-07  | 2000-02-09    | TL          |  90300.00 |                 7007 | LKM            |
|           7011 | Megan        | 1984-07-21  | 2002-09-19    | TL          |  91350.00 |                 7007 | LKM            |
|           7012 | Stuart       | 1980-05-23  | 2016-05-22    | SSE         |  36750.00 |                 7008 | JavaCap        |
|           7013 | Clarke       | 1994-02-24  | 2016-05-22    | SSE         |  33600.00 |                 7008 | JavaCap        |
|           7014 | Darwin       | 1992-05-03  | 2016-05-22    | SE          |  31500.00 |                 7009 | .NETCap        |
|           7015 | Chelsea      | 1994-01-19  | 2016-05-22    | SSE         |  39900.00 |                 7010 | LKM            |
|           7016 | Dan          | 1991-05-27  | 2016-07-07    | SE          |  31500.00 |                 7009 | .NETCap        |
|           7017 | Jimmy        | 1993-08-11  | 2016-07-07    | SE          |  33600.00 |                 7010 | LKM            |
|           7018 | James        | 1993-12-19  | 2016-07-07    | SE          |  36750.00 |                 NULL | .NETCap        |
|           7019 | Joseph       | 1992-12-31  | 2016-07-07    | SE          |  31500.00 |                 NULL | .NETCap        |
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
19 rows in set (0.00 sec)
```

• Increase the salary of SSEs by 5% in addition to increase done in the previous statement. Save the changes done to the database table.

```
mysql> UPDATE EMPLOYEE
    -> SET SALARY=SALARY*1.05
    -> WHERE DESIGNATION="SSE";
Query OK, 3 rows affected (0.01 sec)
Rows matched: 3  Changed: 3  Warnings: 0

mysql> COMMIT;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM EMPLOYEE;
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
| EmployeeNumber | EmployeeName | DateofBirth | DateOfJoining | Designation | Salary    | ManagerEmployeeNumber | DepartmentCode |
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
|           7001 | Cynthya      | 1975-05-12  | 1997-02-14    | CEO         | 840000.00 |                 7001 | NULL           |
|           7002 | 03io         | 1976-02-14  | 1998-04-16    | MD          | 525000.00 |                 7001 | JavaCap        |
|           7003 | Jacob        | 1976-05-16  | 1998-05-16    | MD          | 420000.00 |                 7001 | .NETCap        |
|           7004 | Lucy         | 1978-05-15  | 2000-07-15    | MD          | 441000.00 |                 7001 | LKM            |
|           7005 | Amy          | 1978-09-16  | 2000-11-16    | SM          | 252000.00 |                 7002 | JavaCap        |
|           7006 | Frank        | 1978-09-17  | 2000-09-19    | SM          | 231000.00 |                 7003 | .NETCap        |
|           7007 | Phil         | 1974-12-11  | 2000-11-12    | SM          | 231000.00 |                 7004 | LKM            |
|           7008 | Arnold       | 1984-03-13  | 2000-04-01    | TL          |  84000.00 |                 7005 | JavaCap        |
|           7009 | Jack         | 1984-09-23  | 2000-06-23    | TL          |  92400.00 |                 7006 | .NETCap        |
|           7010 | Justin       | 1984-11-07  | 2000-02-09    | TL          |  90300.00 |                 7007 | LKM            |
|           7011 | Megan        | 1984-07-21  | 2002-09-19    | TL          |  91350.00 |                 7007 | LKM            |
|           7012 | Stuart       | 1980-05-23  | 2016-05-22    | SSE         |  38587.50 |                 7008 | JavaCap        |
|           7013 | Clarke       | 1994-02-24  | 2016-05-22    | SSE         |  35280.00 |                 7008 | JavaCap        |
|           7014 | Darwin       | 1992-05-03  | 2016-05-22    | SE          |  31500.00 |                 7009 | .NETCap        |
|           7015 | Chelsea      | 1994-01-19  | 2016-05-22    | SSE         |  41895.00 |                 7010 | LKM            |
|           7016 | Dan          | 1991-05-27  | 2016-07-07    | SE          |  31500.00 |                 7009 | .NETCap        |
|           7017 | Jimmy        | 1993-08-11  | 2016-07-07    | SE          |  33600.00 |                 7010 | LKM            |
|           7018 | James        | 1993-12-19  | 2016-07-07    | SE          |  36750.00 |                 NULL | .NETCap        |
|           7019 | Joseph       | 1992-12-31  | 2016-07-07    | SE          |  31500.00 |                 NULL | .NETCap        |
+----------------+--------------+-------------+---------------+-------------+-----------+----------------------+----------------+
19 rows in set (0.00 sec)
```

• Delete ALL rows from "EmployeeProject" table. Undo the changes done to the database table.

```
mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql> DELETE FROM EMPLOYEEPROJECTS;
Query OK, 10 rows affected (0.00 sec)

mysql> SELECT * FROM EMPLOYEEPROJECTS;
Empty set (0.00 sec)

mysql> ROLLBACK;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM EMPLOYEEPROJECTS;
+----------------+-----------+------------+------------+
| EmployeeNumber | ProjectId | StartDate  | EndDate    |
+----------------+-----------+------------+------------+
|           7004 | P2        | 2014-07-16 | 2015-05-11 |
|           7005 | P1        | 2014-07-01 | NULL       |
|           7006 | P1        | 2016-06-01 | NULL       |
|           7007 | P3        | 2015-05-11 | NULL       |
|           7012 | P1        | 2015-03-01 | NULL       |
|           7012 | P2        | 2016-06-01 | 2015-02-28 |
|           7013 | P2        | 2014-07-01 | 2014-11-11 |
|           7013 | P3        | 2015-02-28 | NULL       |
|           7014 | P3        | 2014-11-11 | NULL       |
|           7016 | P2        | 2014-07-16 | NULL       |
+----------------+-----------+------------+------------+
10 rows in set (0.00 sec)
```

• Delete rows from "EmployeProject" table if the employee is working for project 'P1'. Undo the changes done to the database table.

```
mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql> DELETE FROM EMPLOYEEPROJECTS
    -> WHERE PROJECTID="P1";
Query OK, 3 rows affected (0.01 sec)

mysql> SELECT * FROM EMPLOYEEPROJECTS;
+----------------+-----------+------------+------------+
| EmployeeNumber | ProjectId | StartDate  | EndDate    |
+----------------+-----------+------------+------------+
|           7004 | P2        | 2014-07-16 | 2015-05-11 |
|           7007 | P3        | 2015-05-11 | NULL       |
|           7012 | P2        | 2016-06-01 | 2015-02-28 |
|           7013 | P2        | 2014-07-01 | 2014-11-11 |
|           7013 | P3        | 2015-02-28 | NULL       |
|           7014 | P3        | 2014-11-11 | NULL       |
|           7016 | P2        | 2014-07-16 | NULL       |
+----------------+-----------+------------+------------+
7 rows in set (0.00 sec)

mysql> ROLLBACK;
Query OK, 0 rows affected (0.00 sec)

mysql> COMMIT;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM EMPLOYEEPROJECTS;
+----------------+-----------+------------+------------+
| EmployeeNumber | ProjectId | StartDate  | EndDate    |
+----------------+-----------+------------+------------+
|           7004 | P2        | 2014-07-16 | 2015-05-11 |
|           7005 | P1        | 2014-07-01 | NULL       |
|           7006 | P1        | 2016-06-01 | NULL       |
|           7007 | P3        | 2015-05-11 | NULL       |
|           7012 | P1        | 2015-03-01 | NULL       |
|           7012 | P2        | 2016-06-01 | 2015-02-28 |
|           7013 | P2        | 2014-07-01 | 2014-11-11 |
|           7013 | P3        | 2015-02-28 | NULL       |
|           7014 | P3        | 2014-11-11 | NULL       |
|           7016 | P2        | 2014-07-16 | NULL       |
+----------------+-----------+------------+------------+
```

• Delete ALL rows from "Department" table. Observe the error.

```
mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql> DELETE FROM DEPARTMENT;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails (`projectdb`.`EMPLOYEE`, CONSTRAINT `EMPLOYEE_ibfk_2` FOREIGN KEY (`DepartmentCode`)
 REFERENCES `DEPARTMENT` (`DepartmentCode`))
```

Day-3

Write and Execute MySQL queries for the following:

• Display the maximum of salary of the company.

```
mysql> SELECT MAX(SALARY) FROM EMPLOYEE;
+--------------+
| MAX(SALARY) |
+--------------+
|   840000.00 |
+--------------+
1 row in set (0.00 sec)
```

• Display the average salary of the company.

```
mysql> SELECT AVG(SALARY) FROM EMPLOYEE;
+----------------+
| AVG(SALARY)    |
+----------------+
| 188350.657895 |
+----------------+
1 row in set (0.00 sec)
```

• Display the maximum salary of employees who are TLs.

```
mysql> SELECT MAX(SALARY)
    -> FROM EMPLOYEE
    -> WHERE DESIGNATION="TL";
+--------------+
| MAX(SALARY) |
+--------------+
|    92400.00 |
+--------------+
1 row in set (0.00 sec)
```

• Display the total number of employees in the company.

```
mysql> SELECT DISTINCT COUNT(EMPLOYEENUMBER) AS TOTAL_NO_OF_EMPLOYEES  FROM EMPLOYEE;
+------------------------+
| TOTAL_NO_OF_EMPLOYEES |
+------------------------+
|                     19 |
+------------------------+
1 row in set (0.00 sec)
```

• Display the total number of Managers in the company. (If an employee is playing the role of the supervisor for any other employee, then the employee is considered as Manager).

```
mysql> SELECT COUNT(DISTINCT(MANAGEREMPLOYEENUMBER)) AS TOTAL_NO_OF_MANAGERS  FROM EMPLOYEE;
+----------------------+
| TOTAL_NO_OF_MANAGERS |
+----------------------+
|                   10 |
+----------------------+
1 row in set (0.00 sec)
```

• Display the total number SMs in the company.

```
mysql> SELECT COUNT(EMPLOYEENUMBER) AS TOTAL_NUMBER_OF_SM FROM EMPLOYEE  WHERE DESIGNATION="SM";
+-------------------+
| TOTAL_NUMBER_OF_SM |
+-------------------+
|                 3 |
+-------------------+
1 row in set (0.00 sec)
```

Write and Execute MySQL queries for the following:

• Display designation and number of employees in each designation.

```
mysql> SELECT DESIGNATION,COUNT(EmployeeNumber) AS EMPLOYEE_COUNT
    -> FROM EMPLOYEE
    -> GROUP BY DESIGNATION;
+-------------+----------------+
| DESIGNATION | EMPLOYEE_COUNT |
+-------------+----------------+
| CEO         |              1 |
| MD          |              3 |
| SM          |              3 |
| TL          |              4 |
| SSE         |              3 |
| SE          |              5 |
+-------------+----------------+
6 rows in set (0.00 sec)
```

• Display designation and maximum salary for each designation.

```
mysql> SELECT DESIGNATION,MAX(SALARY) AS MAXIMUM_SALARY
    -> FROM EMPLOYEE
    -> GROUP BY DESIGNATION;
+-------------+----------------+
| DESIGNATION | MAXIMUM_SALARY |
+-------------+----------------+
| CEO         |      840000.00 |
| MD          |      525000.00 |
| SM          |      252000.00 |
| TL          |       92400.00 |
| SSE         |       41895.00 |
| SE          |       36750.00 |
+-------------+----------------+
6 rows in set (0.00 sec)
```

• Display Designation and maximum salary for each designation. Display the results in the decreasing order of maximum salary.

```
mysql> SELECT DESIGNATION,MAX(SALARY) AS MAXIMUM_SALARY
    -> FROM EMPLOYEE
    -> GROUP BY DESIGNATION
    -> ORDER BY MAXIMUM_SALARY DESC;
+-------------+----------------+
| DESIGNATION | MAXIMUM_SALARY |
+-------------+----------------+
| CEO         |      840000.00 |
| MD          |      525000.00 |
| SM          |      252000.00 |
| TL          |       92400.00 |
| SSE         |       41895.00 |
| SE          |       36750.00 |
+-------------+----------------+
6 rows in set (0.00 sec)
```

• Display Department_Code and number of employees working for each department.

```
mysql> SELECT DepartmentCode,COUNT(EmployeeNumber) as NoOfEmployees
    -> FROM EMPLOYEE
    -> WHERE DEPARTMENTCODE IS NOT NULL
    -> GROUP BY DEPARTMENTCODE;
+----------------+---------------+
| DepartmentCode | NoOfEmployees |
+----------------+---------------+
| .NETCap        |             7 |
| JavaCap        |             5 |
| LKM            |             6 |
+----------------+---------------+
3 rows in set (0.00 sec)
```

• Display Designation and maximum salary for 'TL' and 'SSE.

```
mysql> SELECT Designation,MAX(Salary) AS MAXIMUM_SALARY
    -> FROM EMPLOYEE
    -> WHERE DESIGNATION IN ('TL','SSE')
    -> GROUP BY DESIGNATION;
+-------------+----------------+
| Designation | MAXIMUM_SALARY |
+-------------+----------------+
| TL          |       92400.00 |
| SSE         |       41895.00 |
+-------------+----------------+
2 rows in set (0.00 sec)
```

• Display ManagerEmployeeNumber and Number of employees working under the Manager (Exclude Null from ManagerEmployeeNumber column).

```
mysql> SELECT ManagerEmployeeNumber,COUNT(EmployeeNumber)
    -> FROM EMPLOYEE
    -> WHERE ManagerEmployeeNumber IS NOT NULL
    -> GROUP BY ManagerEmployeeNumber;
+-----------------------+------------------------+
| ManagerEmployeeNumber | COUNT(EmployeeNumber) |
+-----------------------+------------------------+
|                  7001 |                      4 |
|                  7002 |                      1 |
|                  7003 |                      1 |
|                  7004 |                      1 |
|                  7005 |                      1 |
|                  7006 |                      1 |
|                  7007 |                      2 |
|                  7008 |                      2 |
|                  7009 |                      2 |
|                  7010 |                      2 |
+-----------------------+------------------------+
10 rows in set (0.00 sec)
```

• Display DepartmentCode and NumberOfEmployees if the department has more than 5 employees.

```
mysql> SELECT DepartmentCode,COUNT(EmployeeNumber) AS NUMBER_OF_EMPLOYEES
    -> FROM EMPLOYEE
    -> GROUP BY DepartmentCode
    -> HAVING NUMBER_OF_EMPLOYEES>5;
+----------------+---------------------+
| DepartmentCode | NUMBER_OF_EMPLOYEES |
+----------------+---------------------+
| .NETCap        |                   7 |
| LKM            |                   6 |
+----------------+---------------------+
2 rows in set (0.00 sec)
```

• Display Department Code and average salary if the average salary of the department is more than INR150,000 (Exclude Null under Department Code column).

```
mysql> SELECT DepartmentCode, ROUND(AVG(SALARY),2) AS AVERAGE_SALARY
    -> FROM EMPLOYEE
    -> WHERE DepartmentCode IS NOT NULL
    -> GROUP BY DepartmentCode
    -> HAVING AVERAGE_SALARY>150000;
+---------------+----------------+
| DepartmentCode | AVERAGE_SALARY |
+---------------+----------------+
| JavaCap        |      186973.50 |
| LKM            |      154857.50 |
+---------------+----------------+
2 rows in set (0.00 sec)
```

• Display Designation and average salary of each designation for "LKM" department if the average salary is more than INR 35,000. Display the results in the increasing order of average salary.

```
mysql> SELECT Designation,ROUND(AVG(Salary),2) AS AVERAGE_SALARY
    -> FROM EMPLOYEE
    -> WHERE DepartmentCode='LKM'
    -> GROUP BY Designation
    -> HAVING AVERAGE_SALARY >35000
    -> ORDER BY AVERAGE_SALARY ASC;
+-------------+----------------+
| Designation | AVERAGE_SALARY |
+-------------+----------------+
| SSE         |       41895.00 |
| TL          |       90825.00 |
| SM          |      231000.00 |
| MD          |      441000.00 |
+-------------+----------------+
4 rows in set (0.00 sec)
```

• Display Project_Id, number of employees working in the project. Display the results in the decreasing order of number of employees (Exclude the results if the enddate is not null).

```
mysql> SELECT ProjectId,COUNT(EmployeeNumber)
    -> FROM EMPLOYEEPROJECTS
    -> WHERE EndDate IS NULL
    -> GROUP BY ProjectId
    -> ORDER BY COUNT(EmployeeNumber) DESC;
+-----------+------------------------+
| ProjectId | COUNT(EmployeeNumber) |
+-----------+------------------------+
| P1        |                      3 |
| P3        |                      3 |
| P2        |                      1 |
+-----------+------------------------+
3 rows in set (0.00 sec)
```

• Display EmployeeName and DateOfBirth of employees who were born in 90's (1990 to 1999). The DateOfBirth must be displayed in 'DD-Mon-YYYY' format.

```
mysql> SELECT EmployeeName, DATE_FORMAT(DateOfBirth,"%d-%m-%Y") AS DateOfBirth
    -> FROM EMPLOYEE
    -> WHERE YEAR(DateOfBirth) BETWEEN 1990 AND 1999;
+--------------+-------------+
| EmployeeName | DateOfBirth |
+--------------+-------------+
| Clarke       | 24-02-1994  |
| Darwin       | 03-05-1992  |
| Chelsea      | 19-01-1994  |
| Dan          | 27-05-1991  |
| Jimmy        | 11-08-1993  |
| James        | 19-12-1993  |
| Joseph       | 31-12-1992  |
+--------------+-------------+
7 rows in set (0.00 sec)
```