I. Consider the Company database with following tables:

1. Employee

Emp_No (PRIMARY KEY)
Emp_Name
Address
Sex
Dept
Salary
DOJ
Branch

2. Department

Dept_No (Primary Key)
DName
Mgr_Id
Mgr_Strtdate

Perform the following:

1. Create Company database

```
mysql>create database Company;
Query OK, 1 row affected (0.08 sec)
```

2. Viewing all databases

```
mysql>show databases;
+--------------------+
| Database           |
+--------------------+
| Company            |
| employeeDB         |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| testDB             |
+--------------------+
7 rows in set (0.00 sec)

mysql>use Company;
Database changed
```

3. Viewing all Tables in a Database,

```
mysql> show tables;
+----------------------+
| Tables_in_Company |
+----------------------+
| Department        |
| Employee          |
+----------------------+
2 rows in set (0.00 sec)
```

4. Creating Tables (With and Without Constraints)

```
mysql>create table Employee(
    -> Emp_No int primary key,
    -> Emp_Name varchar(25) not null,
    -> Address varchar(45) not null,
    -> Sex varchar(5),
    -> Dept varchar(25) not null,
    -> Salary int not null,
    -> DOJ date not null,
    -> Branch varchar(25) not null);
Query OK, 0 rows affected (0.11 sec)
```

```
mysql> select * from Employee;
+--------+----------+----------+------+----------+--------+------------+----------+
| Emp_No | Emp_Name | Address  | Sex  | Dept     | Salary | DOJ        | Branch   |
+--------+----------+----------+------+----------+--------+------------+----------+
|    201 | Aswin    | ngo      | male | sales    |  25000 | 2003-05-12 | software |
|    202 | Dilshad  | kakkodi  | male | purchase |  18500 | 2005-07-25 | hardware |
|    203 | Martin   | balussery| male | hr       |  42500 | 2000-03-21 | IT       |
+--------+----------+----------+------+----------+--------+------------+----------+
3 rows in set (0.00 sec)
```

```
mysql> create table Department(
 -> Dept_No int primary key,
 -> DName varchar(25),
 -> mgr_id varchar(25) not null,
 -> mgr_Strtdate date not null);
Query OK, 0 rows affected (0.11 sec)
```

```
mysql> select * from Department;
+---------+-------------+--------+--------------+
| Dept_No | DName       | mgr_id | mgr_Strtdate |
+---------+-------------+--------+--------------+
|     101 | sales       | 10     | 1996-03-27   |
|     102 | advertisement | 12   | 1998-06-28   |
+---------+-------------+--------+--------------+
2 rows in set (0.00 sec)
```

5. Inserting/Updating/Deleting Records in a Table

```
mysql> insert into Employee values
    -> (201,"Aswin","ngo","male","sales",25000,"2003-05-12","software"),
    -> (202,"Dilshad","kakkodi","male","purchase",18500,"2005-07-
25","hardware"),
    -> (203,"Martin","balussery","male","hr",42500,"2000-03-21","IT");
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> insert into Department values
    -> (101,"sales",10,"1996-03-27"),
    -> (102,"Adv",12,"1998-06-28");
Query OK, 2 rows affected (0.04 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> update Employee
    -> set Branch="software"
    -> where Branch="IT";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from Employee;
+--------+----------+----------+------+----------+--------+------------+----------+
| Emp_No | Emp_Name | Address  | Sex  | Dept     | Salary | DOJ        | Branch   |
+--------+----------+----------+------+----------+--------+------------+----------+
|    201 | Aswin    | ngo      | male | sales    |  25000 | 2003-05-12 | software |
|    202 | Dilshad  | kakkodi  | male | purchase |  18500 | 2005-07-25 | hardware |
|    203 | Martin   | balussery| male | hr       |  42500 | 2000-03-21 | software |
+--------+----------+----------+------+----------+--------+------------+----------+
3 rows in set (0.00 sec)

mysql> delete from Employee
    -> where Emp_No=201;
Query OK, 1 row affected (0.06 sec)

mysql> select * from Employee;
+--------+----------+----------+------+----------+--------+------------+----------+
| Emp_No | Emp_Name | Address  | Sex  | Dept     | Salary | DOJ        | Branch   |
+--------+----------+----------+------+----------+--------+------------+----------+
|    202 | Dilshad  | kakkodi  | male | purchase |  18500 | 2005-07-25 | hardware |
|    203 | Martin   | balussery| male | hr       |  42500 | 2000-03-21 | software |
+--------+----------+----------+------+----------+--------+------------+----------+
   2 rows in set (0.00 sec)
```

6. Saving (Commit) and Undoing (rollback)

II. Consider the Department table

1. Rename the table Department as Dept

```
mysql> alter table Department
    -> rename to Dept;
Query OK, 0 rows affected (0.05 sec)
```

2. Add a new column Phone with not null constraints to the existing table Dept

```
mysql> alter table Dept
    -> add (phone int not null);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

3. Rename the column DName to Dept_Name in Dept table

```
mysql> alter table Dept
    -> rename column DName to Dept_Name;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

4. Change the data type of column DName as CHAR with size 10

```
mysql> alter table Dept modify Dept_Name char(10);
Query OK, 2 rows affected (0.07 sec)
Records: 2  Duplicates: 0  Warnings: 0
```

5. Delete table

```
mysql> drop table Dept;
Query OK, 0 rows affected (0.02 sec)
```

III. Consider the Employee table

1. Display all the fields of the Employee table

```
mysql> select * from Employee;
+--------+----------+-----------+------+----------+--------+------------+----------+
| Emp_No | Emp_Name | Address   | Sex  | Dept     | Salary | DOJ        | Branch   |
+--------+----------+-----------+------+----------+--------+------------+----------+
|    202 | Dilshad  | kakkodi   | male | purchase |  18500 | 2005-07-25 | hardware |
|    203 | Martin   | balussery | male | hr       |  42500 | 2000-03-21 | software |
+--------+----------+-----------+------+----------+--------+------------+----------+
2 rows in set (0.01 sec)
```

2. Retrieve employee number and their salary

```
mysql> select Emp_no,Salary from Employee;
+--------+--------+
| Emp_no | Salary |
+--------+--------+
|    202 |  18500 |
|    203 |  42500 |
+--------+--------+
2 rows in set (0.01 sec)
```

3. Retrieve average salary of all employee

```
mysql> select avg(Salary) from Employee;
+-------------+
| avg(Salary) |
+-------------+
| 30500.0000 |
+-------------+
1 row in set (0.04 sec)
```

4. Retrieve number of employee

```
mysql> select count(*) from Employee;
+-------------+
| count(*) |
+-------------+
|         2 |
+-------------+
1 row in set (0.00 sec)
```

5. Retrieve distinct number of employee

```
mysql> select sum(Salary) from Employee
    -> where Salary>1200;
+----------------+
| sum(Salary) |
+----------------+
|        61000 |
+----------------+
1 row in set (0.00 sec)
```

6. Retrieve total salary of employee group by employee name and count similar names

```
select Emp_Name,sum(salary),count(Emp_Name) from Employee group
by Emp_Name;
+----------+-------------+-----------------+
| Emp_Name | sum(salary) | count(Emp_Name) |
+----------+-------------+-----------------+
| Aswin    |       25000 |               1 |
| Dilshad  |       18500 |               1 |
| Martin   |       42500 |               1 |
+----------+-------------+-----------------+
```

4 rows in set (0.00 sec)

7. Retrieve total salary of employee which is greater than >12000

```
mysql> select Salary from Employee
    -> where Salary>12000;
+--------+
| Salary |
+--------+
|  18500 |
|  42500 |
+--------+
3 rows in set (0.00 sec)
```

8. Display name of employee in descending order

```
mysql> select * from Employee
    -> order by Emp_Name desc;
+--------+----------+----------+------+----------+--------+------------+----------+
| Emp_No | Emp_Name | Address  | Sex  | Dept     | Salary | DOJ        | Branch   |
+--------+----------+----------+------+----------+--------+------------+----------+
|    203 | Martin   | balussery | male | hr       |  42500 | 2000-03-21 | software |
|    202 | Dilshad  | kakkodi  | male | purchase |  18500 | 2005-07-25 | hardware |
+--------+----------+----------+------+----------+--------+------------+----------+
2 rows in set (0.00 sec)
```

9. Display details of employee whose name is ‘Martin’ and salary greater than 20000;

```
mysql> select * from Employee
    -> where Emp_Name="Martin" and Salary>20000;
+--------+----------+-----------+------+------+--------+------------+----------+
| Emp_No | Emp_Name | Address   | Sex  | Dept | Salary | DOJ        | Branch   |
+--------+----------+-----------+------+------+--------+------------+----------+
|    203 | Martin   | balussery | male | hr   |  42500 | 2000-03-21 | software |
+--------+----------+-----------+------+------+--------+------------+----------+
1 row in set (0.00 sec)
```