PRACTICAL : 1

SQL-

- SQL stands for Structured Query Language
- SQL lets you access and manipulate databases
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.

Functions:

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database

- SQL can set permissions on tables, procedures, and views.

Types of SQL Commands:

1. DDL (Data Definition Language):
   - DDL changes the structure of the table like creating a table, deleting a table, altering a table, etc.
   - All the command of DDL are auto-committed that means it permanently save all the changes in the database.

Commands Under DDL:

- CREATE
- ALTER
- DROP

2. DML (Data Manipulation Language):
   - DML commands are used to modify the database. It is responsible for all form of changes in the database.
   - The command of DML is not auto-committed that means it can't permanently save all the changes in the database. They can be rollback.

Commands Under DML:

- INSERT
- UPDATE
- DELETE

3. DQL (Data Query Language):

DQL is used to fetch the data from the database.

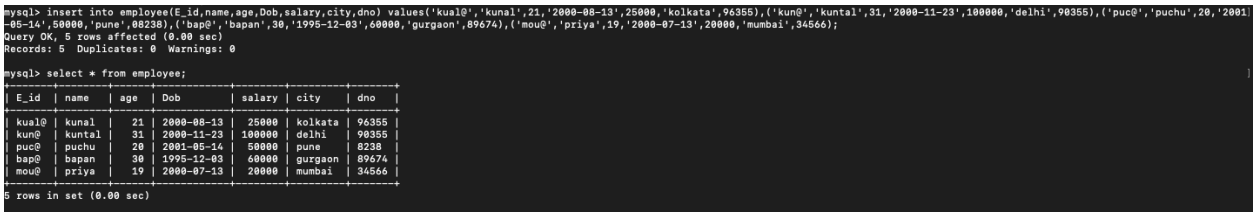
Commands Under DQL:

- SELECT

PRACTICAL : 2

(21.01.2021)

1.Insert rows in each table.



```
mysql> insert into employee(E_id,name,age,Dob,salary,city,dno) values('kual@','kunal',21,'2000-08-13',25000,'kolkata',96355),('kun@','kuntal',31,'2000-11-23',100000,'delhi',90355),('puc@','puchu',20,'2001
-05-14',50000,'pune',08238),('bap@','bapan',30,'1995-12-03',60000,'gurgaon',89674),('mou@','priya',19,'2000-07-13',20000,'mumbai',34566);
Query OK, 5 rows affected (0.00 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from employee;
+------+-------+------+------------+--------+---------+------+
| E_id | name  | age  | Dob        | salary | city    | dno  |
+------+-------+------+------------+--------+---------+------+
| kual@ | kunal |   21 | 2000-08-13 |  25000 | kolkata | 96355 |
| kun@  | kuntal |   31 | 2000-11-23 | 100000 | delhi   | 90355 |
| puc@  | puchu  |   20 | 2001-05-14 |  50000 | pune    | 8238  |
| bap@  | bapan  |   30 | 1995-12-03 |  60000 | gurgaon | 89674 |
| mou@  | priya  |   19 | 2000-07-13 |  20000 | mumbai  | 34566 |
+------+-------+------+------------+--------+---------+------+
5 rows in set (0.00 sec)
```

```
mysql> insert into department values( 'A001','set','gurgaon'),('A002','ssb','delhi'),('A003','ssd','noida');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> select * from department;
+------+------+----------+
| d_id | name | location |
+------+------+----------+
| A001 | set  | gurgaon  |
| A002 | ssb  | delhi    |
| A003 | ssd  | noida    |
+------+------+----------+
3 rows in set (0.00 sec)
```

```
mysql> create table works(e_id varchar(5),d_id varchar(5),hours integer);
Query OK, 0 rows affected (0.02 sec)

mysql> desc works;
+-------+------------+------+-----+---------+-------+
| Field | Type       | Null | Key | Default | Extra |
+-------+------------+------+-----+---------+-------+
| e_id  | varchar(5) | YES  |     | NULL    |       |
| d_id  | varchar(5) | YES  |     | NULL    |       |
| hours | int        | YES  |     | NULL    |       |
+-------+------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> insert into works values ('oj@12','A12',8),('ip@13','A13',9),('hi@34','A14',7);
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> select * from works;
+-------+------+-------+
| e_id  | d_id | hours |
+-------+------+-------+
| oj@12 | A12  |     8 |
| ip@13 | A13  |     9 |
| hi@34 | A14  |     7 |
+-------+------+-------+
3 rows in set (0.00 sec)
```

```
mysql> select * from student;
+-------+---------+
| s_id  | sname   |
+-------+---------+
| AU001 | kunal   |
| AU002 | vinayak |
| AU003 | akshat  |
| AU004 | tushar  |
| AU005 | randi   |
+-------+---------+
5 rows in set (0.00 sec)
```

2. Increase the size of the column city to 10 in the table employee.

```
mysql> alter table employee modify city char(10);
Query OK, 5 rows affected (0.07 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> desc employee;
+--------+------------+------+-----+---------+-------+
| Field  | Type       | Null | Key | Default | Extra |
+--------+------------+------+-----+---------+-------+
| E_id   | varchar(5) | YES  |     | NULL    |       |
| name   | char(7)    | YES  |     | NULL    |       |
| age    | int        | YES  |     | NULL    |       |
| Dob    | date       | YES  |     | NULL    |       |
| salary | int        | YES  |     | NULL    |       |
| city   | char(10)   | YES  |     | NULL    |       |
| dno    | varchar(5) | YES  |     | NULL    |       |
+--------+------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

3. Rename the table department to office.

```
mysql> alter table deperment rename to office;
Query OK, 0 rows affected (0.02 sec)

mysql> desc office;
+----------+------------+------+-----+---------+-------+
| Field    | Type       | Null | Key | Default | Extra |
+----------+------------+------+-----+---------+-------+
| d_id     | varchar(5) | YES  |     | NULL    |       |
| name     | char(7)    | YES  |     | NULL    |       |
| location | char(7)    | YES  |     | NULL    |       |
+----------+------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

4.Drop the table student.

```
mysql> drop table student;
Query OK, 0 rows affected (0.01 sec)

mysql> desc student;
ERROR 1146 (42S02): Table 'db.student' doesn't exist
```

5.

```
mysql> delete from employee where dno=12;
Query OK, 2 rows affected (0.01 sec)

mysql> select*from employee;
+-------+-------+------+------------+--------+---------+------+
| e_id  | ename | age  | dob        | salary | city    | dno  |
+-------+-------+------+------------+--------+---------+------+
| a1011 | neerj |   23 | 1998-05-05 |  40000 | gurgaon | 11   |
| a1013 | varun |   28 | 1993-09-24 |  25000 | delhi   | 11   |
| a1015 | disha |   31 | 1990-08-19 |  50000 | noida   | 11   |
+-------+-------+------+------------+--------+---------+------+
3 rows in set (0.00 sec)
```

6.Increase the salary by 10% of those employees having a salary less than 10000.

```
mysql> update employee set salary= salary + (salary * 10 / 100) where salary > 30000;
Query OK, 3 rows affected (0.02 sec)
Rows matched: 3  Changed: 3  Warnings: 0

mysql> select * from employee;
+-------+--------+------------+--------+---------+------+-----------+
| E_id  | name   | Dob        | salary | address | dno  | state     |
+-------+--------+------------+--------+---------+------+-----------+
| kual@ | kunal  | 2000-08-13 |  25000 | kolkata | 96355 | westbengal |
| kun@  | kuntal | 2000-11-23 | 110000 | delhi   | 90355 | delhi      |
| puc@  | puchu  | 2001-05-14 |  55000 | pune    | 8238  | maharastra |
| bap@  | bapan  | 1995-12-03 |  66000 | gurgaon | 89674 | haryana    |
| mou@  | priya  | 2000-07-13 |  20000 | mumbai  | 34566 | maharastra |
+-------+--------+------------+--------+---------+------+-----------+
5 rows in set (0.00 sec)
```

7. Add a column state with char (10) in the table employee.

```
mysql> alter table employee modify city char(10);
Query OK, 5 rows affected (0.07 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> desc employee;
+--------+------------+------+-----+---------+-------+
| Field  | Type       | Null | Key | Default | Extra |
+--------+------------+------+-----+---------+-------+
| E_id   | varchar(5) | YES  |     | NULL    |       |
| name   | char(7)    | YES  |     | NULL    |       |
| age    | int        | YES  |     | NULL    |       |
| Dob    | date       | YES  |     | NULL    |       |
| salary | int        | YES  |     | NULL    |       |
| city   | char(10)   | YES  |     | NULL    |       |
| dno    | varchar(5) | YES  |     | NULL    |       |
+--------+------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

8. Insert values for the newly added column state in the employee table.

```
mysql> select * from employee;
+-------+--------+------------+--------+---------+-------+-------+
| E_id  | name   | Dob        | salary | address | dno   | state |
+-------+--------+------------+--------+---------+-------+-------+
| kual@ | kunal  | 2000-08-13 |  25000 | kolkata | 96355 | NULL  |
| kun@  | kuntal | 2000-11-23 | 100000 | delhi   | 90355 | NULL  |
| puc@  | puchu  | 2001-05-14 |  50000 | pune    | 8238  | NULL  |
| bap@  | bapan  | 1995-12-03 |  60000 | gurgaon | 89674 | NULL  |
| mou@  | priya  | 2000-07-13 |  20000 | mumbai  | 34566 | NULL  |
+-------+--------+------------+--------+---------+-------+-------+
5 rows in set (0.00 sec)

mysql> update employee set state='westbengal' where name ='kunal';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update employee set state='delhi' where name ='kuntal';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update employee set state='maharastra' where name ='puchu';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update employee set state='haryana' where name ='bapan';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update employee set state='maharastra' where name ='priya';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from employee;
+-------+--------+------------+--------+---------+-------+------------+
| E_id  | name   | Dob        | salary | address | dno   | state      |
+-------+--------+------------+--------+---------+-------+------------+
| kual@ | kunal  | 2000-08-13 |  25000 | kolkata | 96355 | westbengal |
| kun@  | kuntal | 2000-11-23 | 100000 | delhi   | 90355 | delhi      |
| puc@  | puchu  | 2001-05-14 |  50000 | pune    | 8238  | maharastra |
| bap@  | bapan  | 1995-12-03 |  60000 | gurgaon | 89674 | haryana    |
| mou@  | priya  | 2000-07-13 |  20000 | mumbai  | 34566 | maharastra |
+-------+--------+------------+--------+---------+-------+------------+
5 rows in set (0.00 sec)
```

9. Change the name of the city in the employee to the address.

```
mysql> desc employee;
+--------+------------+------+-----+---------+-------+
| Field  | Type       | Null | Key | Default | Extra |
+--------+------------+------+-----+---------+-------+
| E_id   | varchar(5) | YES  |     | NULL    |       |
| name   | char(7)    | YES  |     | NULL    |       |
| age    | int        | YES  |     | NULL    |       |
| Dob    | date       | YES  |     | NULL    |       |
| salary | int        | YES  |     | NULL    |       |
| city   | char(10)   | YES  |     | NULL    |       |
| dno    | varchar(5) | YES  |     | NULL    |       |
| state  | char(10)   | YES  |     | NULL    |       |
+--------+------------+------+-----+---------+-------+
8 rows in set (0.00 sec)

mysql> alter  table employee change city to address;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
mysql> alter  table employee change city address(10);
ERROR 1064 (42000): You have an error in your SQL syntax; check the
mysql> alter  table employee change city address;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
mysql> alter  table employee change city address char(10);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc employee;
+---------+------------+------+-----+---------+-------+
| Field   | Type       | Null | Key | Default | Extra |
+---------+------------+------+-----+---------+-------+
| E_id    | varchar(5) | YES  |     | NULL    |       |
| name    | char(7)    | YES  |     | NULL    |       |
| age     | int        | YES  |     | NULL    |       |
| Dob     | date       | YES  |     | NULL    |       |
| salary  | int        | YES  |     | NULL    |       |
| address | char(10)   | YES  |     | NULL    |       |
| dno     | varchar(5) | YES  |     | NULL    |       |
| state   | char(10)   | YES  |     | NULL    |       |
+---------+------------+------+-----+---------+-------+
8 rows in set (0.01 sec)
```

10.Add a column manager_id with varchar(5) in the table department.

```
mysql> alter table office add column manager_id varchar(5);
ERROR 1146 (42S02): Table 'db.office' doesn't exist
mysql> alter table department add column manager_id varchar(5);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc department;
+------------+------------+------+-----+---------+-------+
| Field      | Type       | Null | Key | Default | Extra |
+------------+------------+------+-----+---------+-------+
| d_id       | varchar(5) | YES  |     | NULL    |       |
| name       | char(7)    | YES  |     | NULL    |       |
| location   | char(7)    | YES  |     | NULL    |       |
| manager_id | varchar(5) | YES  |     | NULL    |       |
+------------+------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> select * from department;
+------+------+----------+------------+
| d_id | name | location | manager_id |
+------+------+----------+------------+
| A001 | set  | gurgaon  | NULL       |
| A002 | ssb  | delhi    | NULL       |
| A003 | ssd  | noida    | NULL       |
+------+------+----------+------------+
3 rows in set (0.00 sec)
```

11. Now insert values for the newly added column manager_id in the department.

```
mysql> update department set manager_id='Yo@54' where d_id ='A001';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update department set manager_id='jo@12' where d_id ='A002';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update department set manager_id='rt@90' where d_id ='A003';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from department;
+------+------+----------+------------+
| d_id | name | location | manager_id |
+------+------+----------+------------+
| A001 | set  | gurgaon  | Yo@54      |
| A002 | ssb  | delhi    | jo@12      |
| A003 | ssd  | noida    | rt@90      |
+------+------+----------+------------+
3 rows in set (0.00 sec)
```

PRACTICAL : 3

(28.02.2021)

1.List down the employees who are having salaries greater than equal to 20000 and less than equal to 50000.

```
mysql> select * from employee where salary>=20000 and salar<=50000;
ERROR 1054 (42S22): Unknown column 'salar' in 'where clause'
mysql> select * from employee where salary>=20000 and salary<=50000;
+-------+-------+------------+--------+---------+-------+------------+
| E_id  | name  | Dob        | salary | address | dno   | state      |
+-------+-------+------------+--------+---------+-------+------------+
| kual@ | kunal | 2000-08-13 |  25000 | kolkata | 96355 | westbengal |
| puc@  | puchu | 2001-05-14 |  50000 | pune    | 8238  | maharastra |
| mou@  | priya | 2000-07-13 |  20000 | mumbai  | 34566 | maharastra |
+-------+-------+------------+--------+---------+-------+------------+
3 rows in set (0.00 sec)
```

2. List down the departments located in Noida.

```
mysql> select * from department;
+------+------+----------+------------+
| d_id | name | location | manager_id |
+------+------+----------+------------+
| A001 | set  | gurgaon  | Yo@54      |
| A002 | ssb  | delhi    | jo@12      |
| A003 | ssd  | noida    | rt@90      |
+------+------+----------+------------+
3 rows in set (0.00 sec)

mysql> select * from department where location='noida';
+------+------+----------+------------+
| d_id | name | location | manager_id |
+------+------+----------+------------+
| A003 | ssd  | noida    | rt@90      |
+------+------+----------+------------+
1 row in set (0.00 sec)
```

3.List the eid, name of those employees whose name starts with the letter k and ends with the letter l.

```
Database changed
mysql> select e_id from employee where name like'k%l';
+--------+
| e_id   |
+--------+
| kual@  |
| kun@   |
+--------+
2 rows in set (0.00 sec)

mysql> select e_id from employee where name like'a%a';
Empty set (0.00 sec)
```

4.List those employees who are having an age greater than 30 yrs and are residing in Delhi.

```
mysql> select name from employee where age>30;
+---------+
| name    |
+---------+
| kuntal  |
| bapan   |
+---------+
2 rows in set (0.00 sec)
```

5.List the eid, age, name of employees living in either Noida, Delhi, or Gurgaon using in the predicate.

```
mysql> select e_id,name,age from employee where address in('noida','gurgaon','delhi');
+------+---------+------+
| e_id | name    | age  |
+------+---------+------+
| kun@ | kuntal  |   31 |
| bap@ | bapan   |   38 |
+------+---------+------+
2 rows in set (0.00 sec)
```

6.List the details of the departments whose location name has the second character as a and second last character as a.

```
mysql> select e_id from employee where name like'__a%_a';
Empty set (0.00 sec)

mysql> select e_id from employee where name like'__n%_l';
+-------+
| e_id  |
+-------+
| kual@ |
| kun@  |
+-------+
2 rows in set (0.00 sec)
```

PRACTICAL : 4

Q2- Insert the following data into these respective tables:

Data for Client Master:

Clientno	Name	city	state	bal.due
0001	Ivan	Bombay	Maharashtra	15000
0002	Vandana	Madras	Tamilnadu	20000
0003	Pramada	Bombay	Maharashtra	5000
0004	Basu	Bombay	Maharashtra	30000
0005	Ravi	Delhi	null	20000
0006	Rukmini	Bombay	Maharashtra	10000

Data for Product Master:

Product No.	Desciption	Qty	Sell price
P00001	1.44floppies	100	500
P03453	Monitors	10	11200
P06734	Mouse	20	1050
P07865	1.22 floppies	100	525
P07868	Keyboards	10	3050
P07885	CD Drive	10	5100
P07965	540 HDD	10	8000
P07975	1.44 Drive	10	1050
P08865	1.22 Drive	5	1050

```
mysql> select * from ProductMaster;
+-----------+-------------+------+-----------+
| ProductNo | Description | Qty  | Sellprice |
+-----------+-------------+------+-----------+
| P0001     | 1.44floppies |  100 |       500 |
| P03453    | Moniters     |   10 |     11200 |
| P06734    | Mouse        |   20 |      1050 |
| P07865    | 1.22floppies |  100 |       525 |
| P07868    | Keyboards    |   10 |      3050 |
| P07885    | CDdrive      |   10 |      5100 |
| P07965    | 540HDD       |   10 |      8000 |
| P07975    | 1.44Drive    |   10 |      1050 |
| P08865    | 1.22Drive    |   10 |      1050 |
+-----------+-------------+------+-----------+
9 rows in set (0.00 sec)
```

```
mysql> select * from client_master;
+----------+---------+--------+-------------+---------+
| clientno | name    | city   | state       | bal_due |
+----------+---------+--------+-------------+---------+
| C0001    | Ivan    | Bombay | Maharashtra |   15000 |
| C0002    | Vandana | Madras | Tamilnadu   |  200000 |
| C0003    | Pramada | Bombay | Maharashtra |   50000 |
| C0004    | Basu    | Bombay | Maharashtra |   30000 |
| C0005    | Ravi    | Delhi  | null        |   20000 |
| C0006    | Rukmini | Bombay | Maharashtra |   10000 |
+----------+---------+--------+-------------+---------+
6 rows in set (0.00 sec)
```

1.Find the names of all the clients.

```
mysql> select name from client_master;
+---------+
| name    |
+---------+
| Ivan    |
| Vandana |
| Pramada |
| Basu    |
| Ravi    |
| Rukmini |
+---------+
6 rows in set (0.00 sec)
```

2.Retrieve the list of names and cities all the clients.

```
mysql> select name,city from client_master;
+---------+--------+
| name    | city   |
+---------+--------+
| Ivan    | Bombay |
| Vandana | Madras |
| Pramada | Bombay |
| Basu    | Bombay |
| Ravi    | Delhi  |
| Rukmini | Bombay |
+---------+--------+
6 rows in set (0.00 sec)
```

3.List the various product available from the ProductMaster table.

```
mysql> select Description  from ProductMaster;
+--------------+
| Description  |
+--------------+
| 1.44floppies |
| Moniters     |
| Mouse        |
| 1.22floppies |
| Keyboards    |
| CDdrive      |
| 540HDD       |
| 1.44Drive    |
| 1.22Drive    |
+--------------+
9 rows in set (0.00 sec)
```

4.List all the clients who are located in Bombay.

```
mysql> select name from client_master where city='Bombay';
+---------+
| name    |
+---------+
| Ivan    |
| Pramada |
| Basu    |
| Rukmini |
+---------+
4 rows in set (0.00 sec)
```

5.Display the information for the client no C0001 and C0002.

```
mysql> select * from client_master where clientno in('C0001','C0002');
+----------+---------+--------+-------------+---------+
| clientno | name    | city   | state       | bal_due |
+----------+---------+--------+-------------+---------+
| C0001    | Ivan    | Bombay | Maharashtra |   15000 |
| C0002    | Vandana | Madras | Tamilnadu   |  200000 |
+----------+---------+--------+-------------+---------+
2 rows in set (0.00 sec)
```

6.Find the products with a description as ‘1.44dDrive’ and ‘1.22Drive’.

```
mysql> select * from ProductMaster where Description in('1.44Drive','1.22Drive');
+-----------+-------------+------+-----------+
| ProductNo | Description | Qty  | Sellprice |
+-----------+-------------+------+-----------+
| P07975    | 1.44Drive   |   10 |      1050 |
| P08865    | 1.22Drive   |   10 |      1050 |
+-----------+-------------+------+-----------+
2 rows in set (0.00 sec)
```

7.Find all products whose sell price is greater than 5000.

```
mysql> select * from ProductMaster where Sellprice>5000;
+-----------+-------------+------+-----------+
| ProductNo | Description | Qty  | Sellprice |
+-----------+-------------+------+-----------+
| P03453    | Moniters    |   10 |     11200 |
| P07885    | CDdrive     |   10 |      5100 |
| P07965    | 540HDD      |   10 |      8000 |
+-----------+-------------+------+-----------+
3 rows in set (0.01 sec)
```

8.Find the products whose selling price is greater than 2000 and less than or equal to 5000.

```
mysql> select * from ProductMaster where Sellprice>2000 and Sellprice<=5000;
+-----------+-------------+------+-----------+
| ProductNo | Description | Qty  | Sellprice |
+-----------+-------------+------+-----------+
| P07868    | Keyboards   |   10 |      3050 |
+-----------+-------------+------+-----------+
1 row in set (0.00 sec)
```

9.List the name, city, and state of the client not in the state of Maharashtra.

```
mysql> select name,city,state from client_master where state not in('Maharashtra');
+---------+--------+-----------+
| name    | city   | state     |
+---------+--------+-----------+
| Vandana | Madras | Tamilnadu |
| Ravi    | Delhi  | null      |
+---------+--------+-----------+
2 rows in set (0.00 sec)
```

10.Change the city of a client no C0005 to Bombay.

```
mysql> update client_master set city='Bombay' where clientno='C0005';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select *  from client_master;
+----------+---------+--------+-------------+----------+
| clientno | name    | city   | state       | bal_due |
+----------+---------+--------+-------------+----------+
| C0001    | Ivan    | Bombay | Maharashtra |   15000 |
| C0002    | Vandana | Madras | Tamilnadu   |  200000 |
| C0003    | Pramada | Bombay | Maharashtra |   50000 |
| C0004    | Basu    | Bombay | Maharashtra |   30000 |
| C0005    | Ravi    | Bombay | null        |   20000 |
| C0006    | Rukmini | Bombay | Maharashtra |   10000 |
+----------+---------+--------+-------------+----------+
6 rows in set (0.00 sec)
```

11.Delete all the details of the product where quantity is equal to 100.

```
mysql> delete from ProductMaster where Qty=100;
ERROR 2006 (HY000): MySQL server has gone away
No connection. Trying to reconnect...
Connection id:    20
Current database: db

Query OK, 2 rows affected (0.16 sec)

mysql> select * from ProductMaster;
+-----------+-------------+------+-----------+
| ProductNo | Description | Qty  | Sellprice |
+-----------+-------------+------+-----------+
| P03453    | Moniters    |   10 |     11200 |
| P06734    | Mouse       |   20 |      1050 |
| P07868    | Keyboards   |   10 |      3050 |
| P07885    | CDdrive     |   10 |      5100 |
| P07965    | 540HDD      |   10 |      8000 |
| P07975    | 1.44Drive   |   10 |      1050 |
| P08865    | 1.22Drive   |   10 |      1050 |
+-----------+-------------+------+-----------+
7 rows in set (0.00 sec)
```

12.Add a column telephone to the table client_master with the domain number(10,0) and add the values for it.

```
mysql> alter table client_master add column telephone integer;
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc client_master;
+-----------+------------+------+-----+---------+-------+
| Field     | Type       | Null | Key | Default | Extra |
+-----------+------------+------+-----+---------+-------+
| clientno  | varchar(6) | YES  |     | NULL    |       |
| name      | char(8)    | YES  |     | NULL    |       |
| city      | char(8)    | YES  |     | NULL    |       |
| state     | char(13)   | YES  |     | NULL    |       |
| bal_due   | int        | YES  |     | NULL    |       |
| telephone | int        | YES  |     | NULL    |       |
+-----------+------------+------+-----+---------+-------+
6 rows in set (0.03 sec)
```

13.Change the size of the selling price to (10,2).

```
mysql> alter table ProductMaster modify Sellprice decimal(10,2);
Query OK, 7 rows affected (0.05 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> desc ProductMaster;
+-------------+---------------+------+-----+---------+-------+
| Field       | Type          | Null | Key | Default | Extra |
+-------------+---------------+------+-----+---------+-------+
| ProductNo   | varchar(10)   | YES  |     | NULL    |       |
| Description | varchar(20)   | YES  |     | NULL    |       |
| Qty         | int           | YES  |     | NULL    |       |
| Sellprice   | decimal(10,2) | YES  |     | NULL    |       |
+-------------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

14.Find the names of the clients having “a” as the second letter in their names.

```
mysql> select name from client_master where name like '__a%';
+---------+
| name    |
+---------+
| Ivan    |
| Pramada |
+---------+
2 rows in set (0.00 sec)
```

PRACTICAL : 6

1.Create a table Emp with attributes ename, ecity, salary, enumber with following constraints: enumber is the primary key and should start with ‘E’, ecity should have default values as Delhi.

```
mysql> create table Emp(Ename varchar(10),Ecity varchar(5) default 'Delhi',Enumber varchar(5) primary key check(Enumber like 'E%'));
Query OK, 0 rows affected (0.02 sec)

mysql> desc Emp;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| Ename   | varchar(10) | YES  |     | NULL    |       |
| Ecity   | varchar(5)  | YES  |     | Delhi   |       |
| Enumber | varchar(5)  | NO   | PRI | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

```
mysql> alter table Emp  add salary integer;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc Emp;
+----------+---------------+------+-----+----------+--------+
| Field    | Type          | Null | Key | Default  | Extra  |
+----------+---------------+------+-----+----------+--------+
| Ename    | varchar(10)   | YES  |     | NULL     |        |
| Ecity    | varchar(5)    | YES  |     | Delhi    |        |
| Enumber  | varchar(5)    | NO   | PRI | NULL     |        |
| salary   | int           | YES  |     | NULL     |        |
+----------+---------------+------+-----+----------+--------+
4 rows in set (0.00 sec)
```

2.Create another Table Department with attributes did, budget and manager_id, dname with following constraints: budget should not be less than 10000.

```
mysql> create table Department(Did varchar(5),Budget int check(Budget<=10000),Manager_id varchar(5),Dname varchar(10));
Query OK, 0 rows affected (0.02 sec)

mysql> desc Department;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| Did        | varchar(5)  | YES  |     | NULL    |       |
| Budget     | int         | YES  |     | NULL    |       |
| Manager_id | varchar(5)  | YES  |     | NULL    |       |
| Dname      | varchar(10) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

3.Create another Table Works with attributes did and eid& combination of both as primary key.

```
mysql> create table works(did varchar(5),eid varchar(5),primary key(did,eid));
Query OK, 0 rows affected (0.01 sec)

mysql> desc works;
+-------+------------+------+-----+---------+-------+
| Field | Type       | Null | Key | Default | Extra |
+-------+------------+------+-----+---------+-------+
| did   | varchar(5) | NO   | PRI | NULL    |       |
| eid   | varchar(5) | NO   | PRI | NULL    |       |
+-------+------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

4.Alter table Department and make did as the primary key.

```
mysql> alter table Department add constraint pk primary key(Did);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc Department;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| Did        | varchar(5)  | NO   | PRI | NULL    |       |
| Budget     | int         | YES  |     | NULL    |       |
| Manager_id | varchar(5)  | YES  |     | NULL    |       |
| Dname      | varchar(10) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

5.Alter table Department and make manager_id as the foreign key.

```
mysql> alter table Department add constraint fg foreign key(Manager_id) references Emp (Enumber);
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc Department;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| Did        | varchar(5)  | NO   | PRI | NULL    |       |
| Budget     | int         | YES  |     | NULL    |       |
| Manager_id | varchar(5)  | YES  | MUL | NULL    |       |
| Dname      | varchar(10) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

6.Alter table Works and make did and eid as foreign key.

```
mysql> alter table works add constraint fk foreign key(did) references Department(Did);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table works add constraint fk foreign key(eid) references Emp(Enumber);
ERROR 1826 (HY000): Duplicate foreign key constraint name 'fk'
mysql> alter table works add constraint fk1 foreign key(eid) references Emp(Enumber);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc works;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| did   | varchar(5) | NO   | PRI | NULL    |       |
| eid   | varchar(5) | NO   | PRI | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

7.Create table book with attributes ISBN, title, price, pid with following constraints: ISBN is the primary key, price should be >=20/<=200, title should not have null values.

```
mysql> create table book(ISBN integer primary key,title char (15) default'not null',price integer check(price>=20 and price<=200),pid varchar(15));
Query OK, 0 rows affected (0.02 sec)

mysql> desc book;
+-------+-------------+------+-----+----------+-------+
| Field | Type        | Null | Key | Default  | Extra |
+-------+-------------+------+-----+----------+-------+
| ISBN  | int         | NO   | PRI | NULL     |       |
| title | char(15)    | YES  |     | not null |       |
| price | int         | YES  |     | NULL     |       |
| pid   | varchar(15) | YES  |     | NULL     |       |
+-------+-------------+------+-----+----------+-------+
4 rows in set (0.00 sec)
```

8.Create table publisher with attributes pid, pname, state with following constraints: pname should not have null values; state should be either Haryana, Tamil nadu, Maharashtra.

```
mysql> create table publisher(pid varchar(15),pname char(20) default'NOT NULL',state char(20) check(state in ('Haryana','Tamilnadu','Maharastra')));
Query OK, 0 rows affected (0.02 sec)

mysql> desc publisher;
+-------+-------------+------+-----+----------+-------+
| Field | Type        | Null | Key | Default  | Extra |
+-------+-------------+------+-----+----------+-------+
| pid   | varchar(15) | YES  |     | NULL     |       |
| pname | char(20)    | YES  |     | NOT NULL |       |
| state | char(20)    | YES  |     | NULL     |       |
+-------+-------------+------+-----+----------+-------+
3 rows in set (0.01 sec)
```

9.Alter the table publisher by making pid as primary key.

```
mysql> alter table publisher add constraint primary key (pid);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc publisher;
+-------+-------------+------+-----+----------+-------+
| Field | Type        | Null | Key | Default  | Extra |
+-------+-------------+------+-----+----------+-------+
| pid   | varchar(15) | NO   | PRI | NULL     |       |
| pname | char(20)    | YES  |     | NOT NULL |       |
| state | char(20)    | YES  |     | NULL     |       |
+-------+-------------+------+-----+----------+-------+
3 rows in set (0.00 sec)
```

10.Alter the table book by making pid as foreign key.

```
mysql> desc book;
+-------+-------------+------+-----+----------+-------+
| Field | Type        | Null | Key | Default  | Extra |
+-------+-------------+------+-----+----------+-------+
| ISBN  | int         | NO   | PRI | NULL     |       |
| title | char(15)    | YES  |     | not null |       |
| price | int         | YES  |     | NULL     |       |
| pid   | varchar(15) | YES  | MUL | NULL     |       |
+-------+-------------+------+-----+----------+-------+
4 rows in set (0.01 sec)
```

PRACTICAL : 7

1. Create table sailors with attributes-s_id, s_name, s_age, s_rating with s_id as primary key.

```
mysql> desc sailors;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| s_id     | varchar(20) | NO   | PRI | NULL    |       |
| s_name   | char(20)    | YES  |     | NULL    |       |
| s_age    | int         | YES  |     | NULL    |       |
| s_rating | int         | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

```
mysql> select * from sailors;
+------+---------+-------+----------+
| s_id | s_name  | s_age | s_rating |
+------+---------+-------+----------+
| S001 | biplab  |    25 |        5 |
| S002 | rahim   |    28 |        6 |
| S003 | arindam |    21 |        6 |
| S004 | tapu    |    38 |        8 |
| S005 | bapan   |    30 |        9 |
+------+---------+-------+----------+
5 rows in set (0.00 sec)
```

2.Create table reserves with attributes-s_id, b_id, day (date) with (s_id+b_id) as primary key and s_id and b_id as foreign key.

```
ysql> desc reserves;
+-------+------------+------+-----+---------+-------+
| Field | Type       | Null | Key | Default | Extra |
+-------+------------+------+-----+---------+-------+
| s_id  | varchar(20) | NO   | PRI | NULL    |       |
| b_id  | varchar(20) | NO   | PRI | NULL    |       |
| day   | date       | YES  |     | NULL    |       |
+-------+------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> select * from reserves;
+------+------+------------+
| s_id | b_id | day        |
+------+------+------------+
| S002 | B001 | 2021-04-02 |
| S002 | B003 | 2021-04-06 |
| S003 | B002 | 2021-05-23 |
| S004 | B005 | 2021-04-12 |
| S005 | B002 | 2021-04-17 |
+------+------+------------+
5 rows in set (0.00 sec)
```

3.Create table boats with attributes-b_id, bname, bcolour with b_id as primary key.

```
mysql> desc boats;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| b_id    | varchar(20) | NO   | PRI | NULL    |       |
| b_name  | char(20)    | YES  |     | NULL    |       |
| b_color | char(20)    | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> select * from boats;
+------+----------+---------+
| b_id | b_name   | b_color |
+------+----------+---------+
| B001 | radha    | red     |
| B002 | radha    | green   |
| B003 | bazigar  | green   |
| B004 | tismar   | red     |
| B005 | khalnyak | red     |
+------+----------+---------+
5 rows in set (0.00 sec)
```

4.Find the sid of the sailors who have reserved red boat but not green boat.

```
mysql> select R.s_id from reserves R,boats B  where R.b_id=B.b_id and B.b_color='red' and R.s_id  not in (select R.s_id from reserves R,boats B where R.b_id=B
.b_id and B.b_color='green');
+------+
| s_id |
+------+
| S004 |
+------+
1 row in set (0.01 sec)
```

5.Find the sid of the sailors who have reserved red boat or green boat.

```
mysql> select R.s_id from reserves R,boats B  where R.b_id=B.b_id and B.b_color in ('red','green');
+------+
| s_id |
+------+
| S002 |
| S003 |
| S005 |
| S002 |
| S004 |
+------+
5 rows in set (0.01 sec)
```

6.Find the sid of the sailors who have reserved both red boat and green boat.

```
mysql> select R.s_id from reserves R,boats B  where R.b_id=B.b_id and B.b_color='red' and B.b_color='green';
Empty set (0.00 sec)
```

PRACTICAL : 9

1.Find the age of youngest sailors for each rating level.

```
mysql> select s_rating,min(s_age) from sailors group by (s_rating);
+----------+------------+
| s_rating | min(s_age) |
+----------+------------+
|        5 |         25 |
|        6 |         28 |
|        4 |         21 |
|        8 |         38 |
|        9 |         30 |
+----------+------------+
5 rows in set (0.01 sec)
```

2.Find the age of youngest sailor who is eligible to vote for each rating level with at least two such sailor.

3.For each red boat, find the number of reservations for this boat.

```
mysql> select B.b_id ,B.b_name,B.b_color, count(R.b_id) from boats B natural join reserves R group by B.b_id having B.b_color="red";
+------+----------+---------+--------------+
| b_id | b_name   | b_color | count(R.b_id) |
+------+----------+---------+--------------+
| B001 | radha    | red     |            1 |
| B005 | khalnyak | red     |            1 |
+------+----------+---------+--------------+
2 rows in set (0.00 sec)
```

4.Find average age of sailor for each rating level that has at least two such sailors.

```
mysql> select s_rating,avg(s_age) average_age from sailors group by s_rating having count(s_rating)>1;
+----------+-------------+
| s_rating | average_age |
+----------+-------------+
|        6 |     24.5000 |
+----------+-------------+
1 row in set (0.01 sec)
```

5.**Write a query to print the following sentence** :

Sailor named …….. with sailor id…….has reserved boat number……..on date…….

```
mysql> select concat ("Sailor named ",S.s_name,"with sailor id ",S.s_id,"has reserved boat number ",R.b_id,"on date", R.day) detailed_information from sailors
 S natural join reserves R;
+-------------------------------------------------------------------------------+
| detailed_information                                                          |
+-------------------------------------------------------------------------------+
| Sailor named rahimwith sailor id S002has reserved boat number B001on date2021-04-02   |
| Sailor named rahimwith sailor id S002has reserved boat number B003on date2021-04-06   |
| Sailor named arindamwith sailor id S003has reserved boat number B002on date2021-05-23 |
| Sailor named tapuwith sailor id S004has reserved boat number B005on date2021-04-12    |
| Sailor named bapanwith sailor id S005has reserved boat number B002on date2021-04-17   |
+-------------------------------------------------------------------------------+
5 rows in set (0.01 sec)
```

PRACTICAL : 8

Using natural join :

Find names of sailors who have reserved boat number B003.

```
mysql> select sailors.s_name from sailors natural join reserves where reserves.b_id="B003";
+--------+
| s_name |
+--------+
| rahim  |
+--------+
1 row in set (0.01 sec)
```

2.Find names of sailors who have reserved at least one boat.

```
mysql> select sailors.s_name from sailors natural join reserves R group by s_id;
+---------+
| s_name  |
+---------+
| rahim   |
| arindam |
| bapan   |
| tapu    |
+---------+
4 rows in set (0.01 sec)
```

3.Find names of sailors who have reserved a red boat.

```
mysql> select s_name from sailors S natural join reserves R natural join boats B where B.b_color="red";
+--------+
| s_name |
+--------+
| rahim  |
| tapu   |
+--------+
2 rows in set (0.00 sec)
```

4.Find the colors of boat reserved by bapan.

```
mysql> select B.b_color from sailors S natural join reserves R natural join boats B where S.s_name="bapan";
+---------+
| b_color |
+---------+
| green   |
+---------+
1 row in set (0.00 sec)
```

Using Equi join :

5.Find names of sailors who have reserved boat number B003.

```
mysql> select S.s_name from sailors S join reserves R on S.s_id = R.s_id where R.b_id = "B003";
+--------+
| s_name |
+--------+
| rahim  |
+--------+
```

6.Find names of sailors who have reserved at least one boat.

```
mysql> select S.s_name from sailors S join reserves R on S.s_id = R.s_id group by S.s_name;
+----------+
| s_name   |
+----------+
| rahim    |
| arindam  |
| bapan    |
| tapu     |
+----------+
4 rows in set (0.00 sec)
```

7.Find names of sailors who have reserved a red boat

```
mysql> select S.s_name from sailors S join reserves R on S.s_id = R.s_id join boats B on B.b_id = R.b_id where B.b_color = 'red' group by S.s_name
+--------+
| s_name |
+--------+
| rahim  |
| tapu   |
+--------+
2 rows in set (0.00 sec)
```

8.Find the colors of boat reserved by bapan.

```
mysql> select B.b_color from sailors S join reserves R on S.s_id = R.s_id join boats B on B.b_id = R.b_id where S.s_name ="bapan";
+---------+
| b_color |
+---------+
| green   |
+---------+
1 row in set (0.01 sec)
```

Nested queries :

1.Find the sailors whose rating is better than some sailor called tapu.

```
mysql> select * from sailors where s_rating >(select s_rating from sailors where s_name ="tapu");
+------+--------+-------+----------+
| s_id | s_name | s_age | s_rating |
+------+--------+-------+----------+
| S005 | bapan  |    30 |        9 |
+------+--------+-------+----------+
1 row in set (0.00 sec)
```

2.Find the sailors whose rating is better than every sailor called biplab.

```
mysql> select * from sailors where s_rating >(select s_rating from sailors where s_name ="biplab");
+------+---------+-------+----------+
| s_id | s_name  | s_age | s_rating |
+------+---------+-------+----------+
| S002 | rahim   |    28 |        6 |
| S003 | arindam |    21 |        6 |
| S004 | tapu    |    38 |        8 |
| S005 | bapan   |    30 |        9 |
+------+---------+-------+----------+
4 rows in set (0.00 sec)
```

3.Find the sailor with highest rating.

```
mysql> select s_id, max(s_rating) from sailors group by (s_id);
+------+---------------+
| s_id | max(s_rating) |
+------+---------------+
| S001 |             5 |
| S002 |             6 |
| S003 |             6 |
| S004 |             8 |
| S005 |             9 |
+------+---------------+
5 rows in set (0.00 sec)
```

Self join :

Create a table employee (emp_no, name, manager_no) where emp_no is the primary key and manager_no is the foreign key.

```
mysql> insert into employee values ('E01','basu','E02'),('E02','rukman','E05'),('E03','carol','E04'),('E04','bayross','NULL'),('E05','ivan','NULL');
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from employee;
+--------+---------+------------+
| emp_no | name    | manager_no |
+--------+---------+------------+
| E01    | basu    | E02        |
| E02    | rukman  | E05        |
| E03    | carol   | E04        |
| E04    | bayross | NULL       |
| E05    | ivan    | NULL       |
+--------+---------+------------+
5 rows in set (0.00 sec)
```

1.Execute a query to retrieve names of the employees and the name of their respective managers from the employee table.

```
mysql> select E.name E_name ,M.name M_name from employee E join employee M on E.manager_no = M.emp_no;
+---------+---------+
| E_name | M_name  |
+---------+---------+
| basu   | rukman  |
| rukman | ivan    |
| carol  | bayross |
+---------+---------+
3 rows in set (0.00 sec)
```

Outer join :

1.Create tables and insert these rows:

Students

Student_ID	Student_Name	Advisor_ID
1	Student_1	1
2	Student_2	8
4	Student_4	2
5	Student_5	3
7	Student_7	3
9	Student_9	1
10	Student_10	3

Advisors

Advisor_ID	Advisor_Name
1	Advisor 1
3	Advisor 3
5	Advisor 5

```
mysql> create table students(student_id int primary key,student_name char(20),advisor_id int);
Query OK, 0 rows affected (0.07 sec)
```

```
ysql> insert into students values(1,'student_1',1),(2,'student_2',8),(4,'student_4',2),(5,'student_5',3),(7,'student_7',3),(9,'student_9',1),(10,'student_10'
3);
uery OK, 7 rows affected (0.01 sec)
ecords: 7  Duplicates: 0  Warnings: 0
```

```
mysql> select * from students;
+------------+--------------+------------+
| student_id | student_name | advisor_id |
+------------+--------------+------------+
|          1 | student_1    |          1 |
|          2 | student_2    |          8 |
|          4 | student_4    |          2 |
|          5 | student_5    |          3 |
|          7 | student_7    |          3 |
|          9 | student_9    |          1 |
|         10 | student_10   |          3 |
+------------+--------------+------------+
7 rows in set (0.00 sec)
```

```
mysql> create table advisors(advisor_id int primary key,advisor_name varchar(20));
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> insert into advisors values(1,'advisor_1'),(3,'advisor_3'),(5,'advisor_5');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> select * from advisors;
+------------+--------------+
| advisor_id | advisor_name |
+------------+--------------+
|          1 | advisor_1    |
|          3 | advisor_3    |
|          5 | advisor_5    |
+------------+--------------+
3 rows in set (0.00 sec)
```

2.Query for retrieving the student details along with their advisory detail.

```
mysql> select *  from students S right join advisors A on S.advisor_id = A.advisor_id union select *  from students S left join advisors A on S.advisor_id = A
.advisor_id;
+------------+--------------+------------+------------+--------------+
| student_id | student_name | advisor_id | advisor_id | advisor_name |
+------------+--------------+------------+------------+--------------+
|          1 | student_1    |          1 |          1 | advisor_1    |
|          9 | student_9    |          1 |          1 | advisor_1    |
|          5 | student_5    |          3 |          3 | advisor_3    |
|          7 | student_7    |          3 |          3 | advisor_3    |
|         10 | student_10   |          3 |          3 | advisor_3    |
|       NULL | NULL         |       NULL |          5 | advisor_5    |
|          2 | student_2    |          8 |       NULL | NULL         |
|          4 | student_4    |          2 |       NULL | NULL         |
+------------+--------------+------------+------------+--------------+
8 rows in set (0.06 sec)
```

3.Query for retrieving the details of all the student along with details of advisory (using outer join).

```
mysql> select *  from students S left join advisors A on S.advisor_id = A.advisor_id ;
+------------+--------------+------------+------------+--------------+
| student_id | student_name | advisor_id | advisor_id | advisor_name |
+------------+--------------+------------+------------+--------------+
|          1 | student_1    |          1 |          1 | advisor_1    |
|          2 | student_2    |          8 |       NULL | NULL         |
|          4 | student_4    |          2 |       NULL | NULL         |
|          5 | student_5    |          3 |          3 | advisor_3    |
|          7 | student_7    |          3 |          3 | advisor_3    |
|          9 | student_9    |          1 |          1 | advisor_1    |
|         10 | student_10   |          3 |          3 | advisor_3    |
+------------+--------------+------------+------------+--------------+
7 rows in set (0.01 sec)
```

4.Query for retrieving the details of student along with details of all the advisory (using outer join).

```
mysql> select *  from students S right join advisors A on S.advisor_id = A.advisor_id ;
+------------+--------------+------------+------------+--------------+
| student_id | student_name | advisor_id | advisor_id | advisor_name |
+------------+--------------+------------+------------+--------------+
|          1 | student_1    |          1 |          1 | advisor_1    |
|          9 | student_9    |          1 |          1 | advisor_1    |
|          5 | student_5    |          3 |          3 | advisor_3    |
|          7 | student_7    |          3 |          3 | advisor_3    |
|         10 | student_10   |          3 |          3 | advisor_3    |
|       NULL | NULL         |       NULL |          5 | advisor_5    |
+------------+--------------+------------+------------+--------------+
6 rows in set (0.00 sec)
```

PRACTICAL : 10

1.Basic definition and advantages of views.
Create a table staff with attributes staff_no, firstname, lastname, position, DOB, salary, branch_no with staff_no as primary key.
Insert six rows in it.

```
mysql> create table staff(staff_no varchar(20),firstname varchar(20),lastname varchar(20),position varchar(20),DOB date,salary int,branch_no varchar(20),prima
ry key(staff_no));
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> insert into staff values('S001','vinnet','negi','devloper','2000-01-01',30000,'B01'),('S002','brotin','sharma','manager','2000-04-12',32000,'B03'),('S0
03','arindam','de','junior employee','2000-03-24',23000,'B02'),('S004','kuntal','acharya','ceo','1990-05-29',200000,'B001'),('S005','vinayak','vajpayee','eplo
yee','2000-04-12',35000,'B04'),('S006','raja','das','photographer','2000-07-27',20000,'B02');
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

```
mysql> select * from staff;
+----------+----------+----------+-----------------+------------+--------+-----------+
| staff_no | firstname | lastname | position        | DOB        | salary | branch_no |
+----------+----------+----------+-----------------+------------+--------+-----------+
| S001     | vinnet    | negi     | devloper        | 2000-01-01 |  30000 | B02       |
| S002     | brotin    | sharma   | manager         | 2000-04-12 |  32000 | B03       |
| S003     | arindam   | de       | junior employee | 2000-03-24 |  23000 | B02       |
| S004     | kuntal    | acharya  | ceo             | 1990-05-29 | 200000 | B02       |
| S005     | vinayak   | vajpayee | eployee         | 2000-04-12 |  35000 | B04       |
| S006     | raja      | das      | photographer    | 2000-07-27 |  20000 | B02       |
+----------+----------+----------+-----------------+------------+--------+-----------+
6 rows in set (0.01 sec)
```

2.Create a view so that manager at branch 200 can see only the details for staff who work in his/her branch office.

```
mysql> create view report as select * from staff where branch_no='B02';
Query OK, 0 rows affected (0.02 sec)

mysql> select * from report;
+----------+-----------+----------+-----------------+------------+--------+-----------+
| staff_no | firstname | lastname | position        | DOB        | salary | branch_no |
+----------+-----------+----------+-----------------+------------+--------+-----------+
| S001     | vinnet    | negi     | devloper        | 2000-01-01 |  30000 | B02       |
| S003     | arindam   | de       | junior employee | 2000-03-24 |  23000 | B02       |
| S004     | kuntal    | acharya  | ceo             | 1990-05-29 | 200000 | B02       |
| S006     | raja      | das      | photographer    | 2000-07-27 |  20000 | B02       |
+----------+-----------+----------+-----------------+------------+--------+-----------+
4 rows in set (0.00 sec)
```

3.Create a view staffdetails200 that excludes salary info so that only managers can access the salary details for the staff who work at their branch.

```
mysql> create view staffdetails200 as select staff_no,firstname,lastname,position,DOB,branch_no from staff where branch_no='B02';
Query OK, 0 rows affected (0.01 sec)

mysql> select * from staffdetails200;
+----------+-----------+----------+-----------------+------------+-----------+
| staff_no | firstname | lastname | position        | DOB        | branch_no |
+----------+-----------+----------+-----------------+------------+-----------+
| S001     | vinnet    | negi     | devloper        | 2000-01-01 | B02       |
| S003     | arindam   | de       | junior employee | 2000-03-24 | B02       |
| S004     | kuntal    | acharya  | ceo             | 1990-05-29 | B02       |
| S006     | raja      | das      | photographer    | 2000-07-27 | B02       |
+----------+-----------+----------+-----------------+------------+-----------+
4 rows in set (0.00 sec)
```