Assignment-3

DBMS LAB

Subhajit Samanta
2020CSB046

(A)

- **Creation of TABLES**

1. SAILORS (***s_id*** , s_name , age)

❾ create table sailors (s_id varchar(3) primary key , s_name varchar(10) , rating integer (1) age integer (2));

2. BOATS (***b_id*** , b_name , color)

mysql>create table boats(
-> b_id varchar(3) primary key ,
-> b_name varchar(10) ,
-> color varchar(10));

3. RESERVES (***s_id , b_id*** , day)

> create table reserves(
-> s_id varchar(3) ,
-> b_id varchar(3) ,
-> day varchar(10),
-> primary key (s_id,b_id),
-> constraint b_id foreign key(b_id) references boats(b_id) on delete cascade ,

-> constraint s_id foreign key(s_id) references sailors(s_id) on delete cascade);

- **Inserting into TABLES**

1. SAILORS

Example:

```
-> insert into sailors values('S08' , 'Old Monk' , 9, 65);
```

After inserting all values :-

```
mysql> select * from sailors;
+------+----------+--------+------+
| s_id | s_name   | rating | age  |
+------+----------+--------+------+
| S01  | Tarun    |      1 |   36 |
| S02  | Vijay    |      1 |   21 |
| S03  | Jack     |      9 |   45 |
| S04  | Anubhav  |      7 |   30 |
| S05  | Gaurav   |      3 |   10 |
| S06  | Kiran    |      8 |   25 |
| S07  | Rivujit  |      4 |   27 |
| S08  | Old Monk |      9 |   65 |
| S09  | Luffy    |      9 |   79 |
+------+----------+--------+------+
9 rows in set (0.00 sec)
```

2. BOATS

Example:

mysql> insert into boats values('B01','Titanic','White');

After inserting all values :-

```
mysql> select * from boats;
+------+------------+--------+
| b_id | b_name     | color  |
+------+------------+--------+
| B01  | Titanic    | White  |
| B02  | Legacy     | Red    |
| B03  | Senorita   | green  |
| B04  | Lochness   | Black  |
| B05  | TigerShark | Yellow |
| B06  | Sea-ducked | Blue   |
+------+------------+--------+
6 rows in set (0.00 sec)
```

3. RESERVES

Example : **mysql>** insert into reserves values('S01', 'B01', 'Monday');

After inserting all values :-

```
mysql> select * from reserves;
+------+------+-----------+
| s_id | b_id | day       |
+------+------+-----------+
| S01  | B01  | Monday    |
| S01  | B02  | Tuesday   |
| S01  | B03  | Wednesday |
| S01  | B04  | Thursday  |
| S02  | B05  | Friday    |
| S02  | B06  | Saturday  |
| S03  | B01  | Sunday    |
| S04  | B02  | Monday    |
| S05  | B03  | Tuesday   |
| S06  | B04  | Friday    |
| S08  | B06  | Sunday    |
| S09  | B05  | Wednesday |
+------+------+-----------+
12 rows in set (0.00 sec)
```

Q . Write SQL commands to perform the following :

a) Find the color of boats reserved by **‘Tarun’** .

mysql> select color

```
   -> from boats b, sailors s , reserves r
   -> where b.b_id = r.b_id and s.s_id = r.s_id and s_name = 'Tarun' ;
```

```
mysql> select color
    -> from boats b, sailors s , reserves r
    -> where b.b_id = r.b_id and s.s_id = r.s_id and s_name = 'Tarun' ;
+-------+
| color |
+-------+
| White |
| Red   |
| green |
| Black |
+-------+
4 rows in set (0.00 sec)
```

b) **Find the sailor_id's and sailor_names who have reserved boats on 'Monday' .**

```
mysql> select s.s_id sailor_id , s_name sailor_name
   -> from sailors s, reserves r
   -> where s.s_id = r.s_id and day ='Monday';
```

```
mysql> select s.s_id sailor_id , s_name sailor_name
    -> from sailors s, reserves r
    -> where s.s_id = r.s_id and day ='Monday';
+-----------+-------------+
| sailor_id | sailor_name |
+-----------+-------------+
| S01       | Tarun       |
| S04       | Anubhav     |
+-----------+-------------+
2 rows in set (0.00 sec)
```

C) List boat_id's and boat_names for 'red' and 'green' colors only .

```
mysql> select b_id , b_name
   -> from boats
   -> where color in ('red' , 'green');
```

```
mysql> select b_id , b_name
    -> from boats
    -> where color in ('red' , 'green');
+------+----------+
| b_id | b_name   |
+------+----------+
| B02  | Legacy   |
| B03  | Senorita |
+------+----------+
2 rows in set (0.00 sec)
```

D) Delete all the sailors information whose age is greater than 60 .

-> BEFORE DELETION

```
mysql> select * from sailors;
+------+----------+--------+------+
| s_id | s_name   | rating | age  |
+------+----------+--------+------+
| S01  | Tarun    |      1 |   36 |
| S02  | Vijay    |      1 |   21 |
| S03  | Jack     |      9 |   45 |
| S04  | Anubhav  |      7 |   30 |
| S05  | Gaurav   |      3 |   10 |
| S06  | Kiran    |      8 |   25 |
| S07  | Rivujit  |      4 |   27 |
| S08  | Old Monk |      9 |   65 |
| S09  | Luffy    |      9 |   79 |
+------+----------+--------+------+
9 rows in set (0.00 sec)

mysql> select * from reserves;
+------+------+-----------+
| s_id | b_id | day       |
+------+------+-----------+
| S01  | B01  | Monday    |
| S01  | B02  | Tuesday   |
| S01  | B03  | Wednesday |
| S01  | B04  | Thursday  |
| S02  | B05  | Friday    |
| S02  | B06  | Saturday  |
| S03  | B01  | Sunday    |
| S04  | B02  | Monday    |
| S05  | B03  | Tuesday   |
| S06  | B04  | Friday    |
| S08  | B06  | Sunday    |
| S09  | B05  | Wednesday |
+------+------+-----------+
12 rows in set (0.00 sec)
```

Query) mysql> delete

from sailors

-> where age>60;

After DELETION

```
mysql> delete from sailors
    -> where age>60;
Query OK, 2 rows affected (0.01 sec)

mysql> select * from sailors;
+------+---------+--------+------+
| s_id | s_name  | rating | age  |
+------+---------+--------+------+
| S01  | Tarun   |      1 |   36 |
| S02  | Vijay   |      1 |   21 |
| S03  | Jack    |      9 |   45 |
| S04  | Anubhav |      7 |   30 |
| S05  | Gaurav  |      3 |   10 |
| S06  | Kiran   |      8 |   25 |
| S07  | Rivujit |      4 |   27 |
+------+---------+--------+------+
7 rows in set (0.00 sec)

mysql> select * from reserves;
+------+------+-----------+
| s_id | b_id | day       |
+------+------+-----------+
| S01  | B01  | Monday    |
| S01  | B02  | Tuesday   |
| S01  | B03  | Wednesday |
| S01  | B04  | Thursday  |
| S02  | B05  | Friday    |
| S02  | B06  | Saturday  |
| S03  | B01  | Sunday    |
| S04  | B02  | Monday    |
| S05  | B03  | Tuesday   |
| S06  | B04  | Friday    |
+------+------+-----------+
10 rows in set (0.00 sec)
```

(B)

- **Creation of TABLES**
  1. Teacher(**Tid** , Name , Dept)

mysql> create table Teacher(

-> Tid varchar(3) Primary Key ,

-> Name varchar(10) ,

-> Dept varchar(10));

❾ Inserting values

mysql> insert into teacher values('T01' , 'NV sir' , 'Physics');

After inserting all values

```
mysql> select * from teacher;
+-----+-----------+---------+
| Tid | Name      | Dept    |
+-----+-----------+---------+
| T01 | NV sir    | Physics |
| T02 | MK sir    | CST     |
| T03 | BKS sir   | CST     |
| T04 | SP sir    | EE      |
| T05 | Rajiv sir | IT      |
| T06 | RRD sir   | Physics |
| T07 | BK sir    | ETC     |
+-----+-----------+---------+
7 rows in set (0.00 sec)
```

2. Subject(**Subno**, Subtitle)

CREATION

mysql> create table Subject (

-> Subno integer(2) primary key ,

-> Subtitle varchar(20));

INSERTION mysql> insert into subject values(9,'Thermodynamics');

After Inserting all values

```
mysql> select * from subject;
+-------+----------------+
| Subno | Subtitle       |
+-------+----------------+
|     1 | DBMS           |
|     4 | DSA            |
|     5 | ATI            |
|     9 | Thermodynamics |
|    14 | Microprocessor |
+-------+----------------+
5 rows in set (0.00 sec)
```

3. TaughtBy(**Tid**, Subno)

CREATION

```
mysql> create table TaughtBy(
   -> Tid varchar(3) ,
   -> Subno integer(2) ,
   -> primary key(Tid , Subno),
   -> constraint Tid foreign key(Tid) references Teacher(Tid) on delete cascade,
```

-> constraint Subno foreign key(Subno) references Subject(Subno) on delete cascade) ;

INSERTION

mysql> insert into taughtby values('T05',5);

After inserting all values

```
mysql> select * from taughtby;
+-----+-------+
| Tid | Subno |
+-----+-------+
| T02 |     1 |
| T03 |     4 |
| T05 |     5 |
| T01 |     9 |
| T06 |     9 |
| T04 |    14 |
+-----+-------+
6 rows in set (0.00 sec)
```

4. Student(**Rollno**, Sname, City)

CREATION

mysql> create table Student(

-> Rollno integer(2) Primary key ,

-> Sname varchar(15) ,

-> City varchar(20));

INSERTION mysql> insert into student values(1, 'Himanshu Kumar' , 'Patna');

After inserting all values

```
mysql> select * from student;
+--------+----------------+----------+
| Rollno | Sname          | City     |
+--------+----------------+----------+
|      1 | Bijay Kumar    | Siliguri |
|      2 | Himanshu Kumar | Patna    |
|      3 | Pulkit Yadav   | Delhi    |
|     18 | Anubhav Singh  | Kolkata  |
|     23 | Anand Saha     | Kolkata  |
+--------+----------------+----------+
5 rows in set (0.00 sec)
```

1.) Get the names of all the teachers of ‘Physics’ who teach ‘Thermodynamics’.

```
mysql> select T.name
    -> from teacher T, taughtby tb,subject S
    -> where T.Tid = tb.Tid and S.Subno = tb.Subno and S.Subtitle ='Thermodynamics';
+---------+
| name    |
+---------+
| NV sir  |
| RRD sir |
+---------+
2 rows in set (0.00 sec)
```

2.) Rename the subject ‘DBMS’ to ‘RDBMS’.

```
mysql> update subject
    -> set Subtitle = 'RDBMS'
    -> where Subtitle ='DBMS';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from subject;
+-------+----------------+
| Subno | Subtitle       |
+-------+----------------+
|     1 | RDBMS          |
|     4 | DSA            |
|     5 | ATI            |
|     9 | Thermodynamics |
|    14 | Microprocessor |
+-------+----------------+
5 rows in set (0.00 sec)
```

3.) Find out all the students who stay in ‘Kolkata’ and whose roll number is between 20 and 25.

```
mysql> select *
    -> from student S
    -> where S.City='Kolkata' and S.Rollno between 20 and 25;
+--------+-----------+---------+
| Rollno | Sname     | City    |
+--------+-----------+---------+
|     23 | Anand Saha | Kolkata |
+--------+-----------+---------+
1 row in set (0.00 sec)
```

4.) Display all the students' information in descending order of their roll number who stay in 'Kolkata'.

```
mysql> select *
    -> from student
    -> where City='Kolkata'
    -> order by Rollno desc;
+--------+---------------+---------+
| Rollno | Sname         | City    |
+--------+---------------+---------+
|     23 | Anand Saha    | Kolkata |
|     18 | Anubhav Singh | Kolkata |
+--------+---------------+---------+
2 rows in set (0.00 sec)
```