

## ASSIGNMENT-3

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Subject-Database Management System

Lab(DBMS)

1>QAns-.

## Creation of Tables-

- Creation of sailors table:

Query-

```
create table SAILORS
```

```
(s_id varchar(3) primary key,
```

```
s_name varchar(10),
```

```
rating int(1),
```

```
age int(2));
```

Query for inserting values-

```
mysql> insert into sailors values(
```

```
-> 'S11','Abhishek',3,'80');
```

```
mysql> insert into sailors values(
```

```
-> 'S11','Abhishek',3,'80');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from sailors;
```

### Sailors table after inserting values-

```
mysql> select * from sailors;
```

s_id	s_name	rating	age
S01	Tarun	2	20
S02	Ayush	1	21
S03	Sonu	3	19
S04	Adhesh	2	22
S05	Ashish	1	23
S06	Pulkit	3	21
S09	Ankush	4	67
S11	Abhishek	3	80

8 rows in set (0.00 sec)

### Sailors Table Description-

```
mysql> desc sailors;
```

Field	Type	Null	Key	Default	Extra
s_id	varchar(3)	NO	PRI	NULL	
s_name	varchar(10)	YES		NULL	
rating	int	YES		NULL	
age	int	YES		NULL	

4 rows in set (0.02 sec)

- Creation of Boats Table:

Query:

```
mysql>create table BOATS(
```

```
    -> b_id varchar(3) PRIMARY KEY,
```

```
    -> name varchar(10),
```

```
    -> color varchar(10)
```

```
    -> );
```

Query For inserting values-

```
mysql> insert into boats values(
```

```
    -> 'B07','SharkTank','Green');
```

```
mysql> insert into boats values
```

```
    -> (
```

```
    -> 'B07','SharkTank','Green');
```

```
Query OK, 1 row affected (0.00 sec)
```

### Boats Table after inserting values-

```
mysql> select * from boats;
```

b_id	b_name	color
B01	Titanic	Red
B02	Legacy	White
B03	Senorita	Black
B04	HolyShip	Green
B05	TigerShark	Purple
B07	SharkTank	Green

```
6 rows in set (0.00 sec)
```

### Description of Boats Table-

```
mysql> desc boats;
```

Field	Type	Null	Key	Default	Extra
b_id	varchar(3)	NO	PRI	NULL	
b_name	varchar(10)	YES		NULL	
color	varchar(10)	YES		NULL	

```
3 rows in set (0.00 sec)
```

- Creation of Reserves Table:

Query:

```
mysql> create table reserves(  
    -> s_id varchar(3) ,  
    -> b_id varchar(3) ,  
    -> day varchar(10),  
    -> primary key(s_id,b_id),  
    -> constraint s_id foreign key (s_id) references  
Sailors (s_id) on delete cascade,  
    -> constraint b_id foreign key (b_id) references  
Boats(b_id) on delete cascade  
    );
```

Query for inserting values:

```
mysql> insert into reserves values(  
    -> 'S03','B05','Saturday');
```

```

mysql> insert into reserves values(
-> 'S02','B04','Thursday');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reserves values(
-> 'S03','B02','friday');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reserves values(
-> 'S03','B05','Saturday');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reserves values(
-> 'S04','B01','Sunday');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reserves values(
-> 'S04','B03','Tuesday');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reserves values(
-> 'S05','B04','Friday');
Query OK, 1 row affected (0.00 sec)

```

Reserves Table After inserting values:-

```

mysql> select * from reserves;
+-----+-----+-----+
| s_id | b_id | day      |
+-----+-----+-----+
| S01  | B01  | Monday   |
| S01  | B04  | Tuesday  |
| S02  | B03  | Wednesday|
| S02  | B04  | Thursday |
| S03  | B02  | friday   |
| S03  | B05  | Saturday |
| S04  | B01  | Sunday   |
| S04  | B03  | Tuesday  |
| S05  | B04  | Friday   |
| S09  | B03  | Monday   |
| S11  | B05  | Tuesday  |
+-----+-----+-----+
11 rows in set (0.00 sec)

```

## Description of Reserves Table-

```
mysql> desc reserves;
```

Field	Type	Null	Key	Default	Extra
s_id	varchar(3)	NO	PRI	NULL	
b_id	varchar(3)	NO	PRI	NULL	
day	varchar(10)	YES		NULL	

3 rows in set (0.00 sec)

2. Write SQL command to perform the following operations-

a. Find the color of boats reserved by 'Tarun'.

Ans-

```
mysql> select color from
```

```
-> boats,sailors,reserves
```

```
-> where sailors.s_id=reserves.s_id and  
reserves.b_id=boats.b_id and sailors.s_name='Tarun';
```



```
mysql> select color from
-> boats,sailors,reserves
-> where sailors.s_id=reserves.s_id and reserves.b_id=boats.b_id and sailors.s_name='Tarun';
```

color
Red
Green

```
2 rows in set (0.00 sec)
```

b).Find the sailors\_id and sailors\_names who who have reserved boats on 'Monday'.

Ans-

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

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

s_id	s_name
S01	Tarun
S09	Ankush

c).List boat\_id's and boat\_names for 'red' and 'green' colors only.

Ans-

```
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 |  
+-----+-----+  
| B01  | Titanic |  
| B04  | HolyShip |  
| B07  | SharkTank |  
+-----+-----+  
3 rows in set (0.00 sec)
```

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

Ans-`mysql> delete from sailors where age>=60;`

Previous Sailors Table-

```
mysql> select * from sailors;
```

s_id	s_name	rating	age
S01	Tarun	2	20
S02	Ayush	1	21
S03	Sonu	3	19
S04	Adhesh	2	22
S05	Ashish	1	23
S06	Pulkit	3	21
S09	Ankush	4	67
S11	Abhishek	3	80

```
8 rows in set (0.00 sec)
```

After deleting sailors table

```
mysql> select * from sailors;
```

s_id	s_name	rating	age
S01	Tarun	2	20
S02	Ayush	1	21
S03	Sonu	3	19
S04	Adhesh	2	22
S05	Ashish	1	23
S06	Pulkit	3	21

```
6 rows in set (0.00 sec)
```

Before reserves table-

```
mysql> select * from reserves;
```

s_id	b_id	day
S01	B01	Monday
S01	B04	Tuesday
S02	B03	Wednesday
S02	B04	Thursday
S03	B02	friday
S03	B05	Saturday
S04	B01	Sunday
S04	B03	Tuesday
S05	B04	Friday
S09	B03	Monday
S11	B05	Tuesday

```
11 rows in set (0.00 sec)
```

After deleting reserves table-

```
mysql> select * from reserves;
```

s_id	b_id	day
S01	B01	Monday
S01	B04	Tuesday
S02	B03	Wednesday
S02	B04	Thursday
S03	B02	friday
S03	B05	Saturday
S04	B01	Sunday
S04	B03	Tuesday
S05	B04	Friday

```
9 rows in set (0.00 sec)
```

2>QAns-.

- Creating Table Teacher:-

Query-

```
mysql> create table Teacher(  
-> Tid varchar(3) primary key,  
-> Name varchar(10),  
-> Dept varchar(10));
```

Query For inserting values-

```
mysql> insert into Teacher values  
-> ('T01','MalayKule','CST');
```

```
mysql> insert into Teacher values  
-> ('T01','MalayKule','CST');  
Query OK, 1 row affected (0.02 sec)  
  
mysql> insert into Teacher values  
-> ('T02','BKS','CST');  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into Teacher values  
-> ('T03','AshokAkad','EE');  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into Teacher values  
-> ('T04','BipinKumar','ETC');  
Query OK, 1 row affected (0.00 sec)
```

Teacher Table after inserting values:-

```
mysql> select * from teacher;
```

Tid	Name	Dept
T01	MalayKule	CST
T02	BKS	CST
T03	AshokAkad	EE
T04	BipinKumar	ETC
T05	RajivKumar	IT
T06	HimanshuKr	Physics
T09	AnkitKr	Physics

```
7 rows in set (0.00 sec)
```

### Description of Teacher Table:-

```
mysql> desc teacher;
```

Field	Type	Null	Key	Default	Extra
Tid	varchar(3)	NO	PRI	NULL	
Name	varchar(10)	YES		NULL	
Dept	varchar(10)	YES		NULL	

```
3 rows in set (0.00 sec)
```

- Creating Table Subject-

- Query-

mysql> create table Subject(

-> Subno integer(3) primary key,

-> Subtitle varchar(30));

Query for inserting values:-

mysql> insert into Subject values

-> (1,'DBMS');

```
mysql> insert into Subject values
-> (1,'DBMS');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> insert into Subject values
-> (2,'RDBMS');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Subject values
-> ('5','ATI');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Subject values
-> (9,'Thermodynamics');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into Subject values
-> (14,'Microprocessor');
```



### Subject Table After Inserting Values:-

```
mysql> select * from subject;
+-----+-----+
| Subno | Subtitle |
+-----+-----+
|      1 | DBMS    |
|      5 | ATI     |
|      9 | Thermodynamics |
|     14 | Microprocessor |
|     17 | DSA     |
+-----+-----+
5 rows in set (0.00 sec)
```

### Description of Subject Table:-

```
mysql> desc subject;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Subno | int | NO | PRI | NULL | |
| Subtitle | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

- Creation of Student Table:-

- Query-

mysql> create table Student(

-> Rollno integer(2) primary key,

-> Sname varchar(10),

-> City varchar(10));

- Query For inserting values:-

mysql> insert into student values(

-> 1,'Himanshu','Chapra');

```
mysql> insert into student values(
-> 1,'Himanshu','Chapra');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values(
-> 2,'Vijay','Patna');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values(
-> 7,'Subhajit','Kolkata');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values(
-> 17,'Pushkar','Hazaribagh');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values(
-> 22,'Pulkit','Kolkata');
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values(
-> 24,'Anwesh','Kolkata');
```

### Student Table After Inserting Values-

```
mysql> select * from student;
```

Rollno	Sname	City
1	Himanshu	Chapra
2	Vijay	Patna
7	Subhajit	Kolkata
17	Pushkar	Hazaribagh
22	Pulkit	Kolkata
24	Anwesh	Kolkata

```
5 rows in set (0.00 sec)
```

### Description of Student Table-

```
mysql> desc student;
```

Field	Type	Null	Key	Default	Extra
Rollno	int	NO	PRI	NULL	
Sname	varchar(10)	YES		NULL	
City	varchar(10)	YES		NULL	

```
3 rows in set (0.00 sec)
```

- Creating Table Taughtby-

- Query-

```
mysql> create table TaughtBy(  
-> Tid varchar(3),  
-> Subno varchar(10),  
-> primary key(Tid,Subno),  
->constraint Subno foreign key (Subno)  
references Subject (Subno) on delete cascade;  
->constraint Tid foreign key (Tid) references  
Teacher (Tid) on delete cascade;  
);
```

- Query For Inserting Values-

```
mysql> insert into taughtby values(  
-> 'T02',1);
```

MySQL 8.0 Command Line Client

```
mysql> insert into taughtby values(  
-> 'T01',5);  
Query OK, 1 row affected (0.01 sec)  
  
mysql> insert into taughtby values(  
-> 'T04',9);  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into taughtby values(  
-> 'T05',14);  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into taughtby values(  
-> 'T02',1);  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into taughtby values(  
-> 'T03',9);  
Query OK, 1 row affected (0.00 sec)
```

### Taughtby Table After Inserting values:-

```
mysql> select * from taughtby;
+-----+-----+
| Tid   | Subno |
+-----+-----+
| T02   | 1     |
| T01   | 5     |
| T03   | 9     |
| T06   | 9     |
| T04   | 14    |
| T05   | 17    |
+-----+-----+
6 rows in set (0.00 sec)
```

### Description Of Taughtby Table-

```
mysql> desc taughtby;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Tid   | varchar(3) | NO   | PRI | NULL    |       |
| Subno | int        | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

>Write SQL Commands to perform the following :-

1>Get the names of all the teachers of 'physics' department who teach 'Thermodynamics'.

Ans-

mysql> select name from

-> Teacher,Subject,Taughtby

->where Teacher.Tid=Taughtby.Tid and  
Taughtby.Subno=Subject.Subno and  
Subject.Subtitle='Thermodynamics' and  
Teacher.Dept='Physics';

```
mysql> select name from
-> Teacher,Subject,Taughtby
-> where Teacher.Tid=Taughtby.Tid and Taughtby.Subno=Subject.Subno and Subject.Subtitle='Thermodynamics' and Teacher.Dept='Physics'
;
+-----+
| name |
+-----+
| HimanshuKr |
+-----+
1 row in set (0.00 sec)
```

2>Q. Rename the Subject 'DBMS' to 'RDBMS'.

Ans-

mysql> update Subject set Subtitle='RDBMS' where Subtitle='DBMS';

```
mysql> update Subject set Subtitle='RDBMS' where Subtitle='DBMS';  
Query OK, 1 row affected (0.00 sec)  
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from subject;
```

Subno	Subtitle
1	RDBMS
5	ATI
9	Thermodynamics
14	Microprocessor
17	DSA

```
5 rows in set (0.00 sec)
```

3>Q.Find out all students who stays in 'KOLKATA' and whose roll number is between 20 and 25.

Ans-

mysql> select \* from student where City='KOLKATA' and rollno between 20 and 25;

```
mysql> select * from student where City='KOLKATA' and rollno between 20 and 25;
```

Rollno	Sname	City
22	Pulkit	Kolkata
24	Anwesh	Kolkata

2 rows in set (0.00 sec)

```
mysql> select * from student where City='KOLKATA' and rollno>=20 and rollno<=25;
```

Rollno	Sname	City
22	Pulkit	Kolkata
24	Anwesh	Kolkata

2 rows in set (0.00 sec)



4>Q.Display all the Students information in descending order of their their Roll number who saty in 'Kolkata'.

Ans-

mysql> select \* from student where City='Kolkata' order by rollno;

```
mysql> select * from student where City='Kolkata' order by rollno desc;
```

```
+-----+-----+-----+
| Rollno | Sname  | City   |
+-----+-----+-----+
|      24 | Anwesh | Kolkata |
|      22 | Pulkit | Kolkata |
|       7 | Subhajit | Kolkata |
+-----+-----+-----+
3 rows in set (0.00 sec)
```