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## ASSIGNMENT 1:

### (BOAT RESERVATION SYSTEM) :

#### PROBLEM STATEMENT:

Sailors (**s\_id**,s\_name,rating,age)

Boats (**b\_id**,b\_name,colour)

Reserves (**s\_id**,**b\_id**,R\_date,day)

Create the tables with appropriate SQL commands. Define all integrity constraints and enter sufficient data. Write SQL for the following queries and give the output for each query.

- i> Find the ID, rating and age of sailors whose name is either "John" or "Jack" or "Rabi".
- ii> List the name of Sailors whose age lies between 18 and 30 .
- iii> Find the name and age of sailors whose name starts with 'T' and end with 'n' in descending order of age.
- iv> List the name of sailors who reserve "white" color boats on Monday.
- v> List the name of boats which are reserved by sailors with age greater than 25
- vi> Find the name of sailors who reserve "red" and "white" color boats.
- vii> List the name of sailors who reserve white or black colored boat order by boat ID.

#### SOLUTION:

□ **DATABASE CREATION AND USE :**

```
mysql> create database first2;
```

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

```
mysql> use first2;
```

```
Database changed
```

□ **TABLE CREATION :**

- **SAILORS:**

mysql> create table Sailors

```
-> (
-> s_id varchar(5) primary key,
-> s_name varchar(20),
-> rating int(2),
-> age int(3)
-> );
```

Query OK, 0 rows affected (0.08 sec)

- **BOATS:**

mysql> create table Boats

```
-> (
-> b_id varchar(5) primary key,
-> b_name varchar(10),
-> colour varchar(10)
-> );
```

Query OK, 0 rows affected (0.23 sec)

- **RESERVES:**

mysql> create table Reserves

```
-> (
-> s_id varchar(5) references Sailors,
-> b_id varchar(5) references Boats,
-> R_date date,
-> day varchar(11)
-> );
```

Query OK, 0 rows affected (0.17 sec)

□ **INTIGRITY CONSTRAINTS:**

- **SAILORS:**

mysql> desc Sailors;

Field	Type	Null	Key	Default	Extra
s_id	varchar(5)	NO	PRI	NULL	

s_name	varchar(20)	YES		NULL	
rating	int(2)	YES		NULL	
age	int(3)	YES		NULL	

4 rows in set (0.13 sec)

- **BOATS:**

```
mysql> desc Boats;
```

Field	Type	Null	Key	Default	Extra
b_id	varchar(5)	NO	PRI	NULL	
b_name	varchar(10)	YES		NULL	
colour	varchar(10)	YES		NULL	

3 rows in set (0.00 sec)

- **RESERVES:**

```
mysql> desc Reserves;
```

Field	Type	Null	Key	Default	Extra
s_id	varchar(5)	YES		NULL	
b_id	varchar(5)	YES		NULL	
R_date	date	YES		NULL	
day	varchar(11)	YES		NULL	

4 rows in set (0.02 sec)

□ **TUPLE INSERTION:**

- **SAILORS:**

```
mysql> insert into Sailors values('s01','John',1.1,19);
Query OK, 1 row affected (0.13 sec)
```

```
mysql> insert into Sailors values('s02','Tapan',6.5,25);
Query OK, 1 row affected (0.03 sec)
```

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

```
mysql> select * from Sailors;
```

s_id	s_name	rating	age
s01	John	1	19
s02	Tapan	7	25
s03	Jack	4	30

s04   Tirthan	5   50
s05   Rabi	3   35
s06   Virat	2   16

- **BOATS:**

```
mysql> insert into Boats values('b01','titanic','white');
Query OK, 1 row affected (0.11 sec)
```

```
mysql> insert into Boats values('b02','alloha','red');
Query OK, 1 row affected (0.03 sec)
```

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

```
mysql> select * from Boats;
```

+-----+-----+-----+
b_id   b_name   colour
+-----+-----+-----+
b01   titanic   white
b02   alloha   red
b03   mona   black
b04   ujbhumi   red
b05   orion   black
b06   escape   white
+-----+-----+-----+

6 rows in set (0.00 sec)

- **RESERVES:**

```
mysql> insert into Reserves values('s01','b01','2019-03-23','monday');
Query OK, 1 row affected (0.05 sec)
```

```
mysql> insert into Reserves values('s02','b01','2019-01-15','monday');
Query OK, 1 row affected (0.03 sec)
```

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

```
mysql> select * from Reserves;
```

+-----+-----+-----+
s_id   b_id   R_date   day
+-----+-----+-----+

s01	b01	2019-03-23	monday
s02	b01	2019-01-15	monday
s01	b06	2019-02-20	wednesday
s03	b01	2018-02-01	sunday
s04	b06	2019-08-05	tuesday
s01	b02	2017-01-17	friday
s02	b03	2016-10-08	thursday
s06	b05	2019-12-09	friday

+-----+-----+-----+-----+

8 rows in set (0.00 sec)

□ **QUERY EXECUTION:**

i> mysql> select s\_id, rating, age from Sailors where s\_name in("John", "Jack", "Rabi");

s_id	rating	age
------	--------	-----

+-----+-----+-----+

s01	1	19
s03	4	30
s05	3	35

+-----+-----+-----+

3 rows in set (0.00 sec)

ii> mysql> select s\_name from Sailors where age>=18 and age<=30;

s_name
--------

+-----+

John
Tapan
Jack

+-----+

3 rows in set (0.00 sec)

iii>mysql> select s\_name,age from Sailors where s\_name like "T%n" order by age desc;

s_name	age
--------	-----

+-----+-----+

Tirthan	50
---------	----

Tapan	25
-------	----

+-----+	+-----+
---------	---------

2 rows in set (0.00 sec)

iv>mysql> select s\_name from Sailors,Boats,Reserves where Sailors.s\_id=Reserves.s\_id and Boats.b\_id=Reserves.b\_id and day='monday' and colour='white';

+-----+
---------

s_name
--------

+-----+
---------

John
------

Tapan
-------

+-----+
---------

2 rows in set (0.00 sec)

v>mysql> select b\_name from Sailors,Boats,Reserves where Sailors.s\_id=Reserves.s\_id and Boats.b\_id=Reserves.b\_id and age>25;

+-----+
---------

b_name
--------

+-----+
---------

titanic
---------

escape
--------

+-----+
---------

2 rows in set (0.00 sec)

vi>mysql> select s\_name from Sailors,Boats,Reserves where Sailors.s\_id=Reserves.s\_id and Boats.b\_id=Reserves.b\_id and colour='red' and Sailors.s\_id in(select Sailors.s\_id from Sailors,Boats,Reserves where Sailors.s\_id=Reserves.s\_id and Boats.b\_id=Reserves.b\_id and colour='white');

+-----+
---------

s_name
--------

+-----+
---------

John
------

+-----+
---------

1 row in set (0.00 sec)

```
vii> mysql> select Sailors.s_name from Sailors,Boats,Reserves where Sailors.s_id=Reserves.s_id and  
Boats.b_id=Reserves.b_id and colour='red' and Sailors.s_id union(select Sailors.s_name from  
Sailors,Boats,Reserves where Sailors.s_id=Reserves.s_id and Boats.b_id=Reserves.b_id and  
colour='white');
```

```
+-----+
```

```
| s_name |
```

```
+-----+
```

```
| John   |
```

```
| Tapan  |
```

```
| Jack   |
```

```
| Tirthan|
```

```
+-----+
```

```
4 rows in set, 1 warning (0.00 sec)
```