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ID:R190134

SEC:A
BRANCH:CSE

DBMS ASSIGNMENT-3

Sailors(*sid:* integer, *sname:* string, *rating:* integer, *age:* real)
Boats(*bid:* integer, *bname:* string, *color:* string)
Reserves(*sid:* integer, *bid:* integer, *day:* date)

sid	*sname*	*rating*	*age*
22	Dustin	7	45.0
29	Brutus	1	33.0
31	Lubber	8	55.5
32	Andy	8	25.5
58	Rusty	10	35.0
64	Horatio	7	35.0
71	Zorba	10	16.0
74	Horatio	9	35.0
85	Art	3	25.5
95	Bob	3	63.5

sid	*bid*	*day*
22	101	10/10/98
22	102	10/10/98
22	103	10/8/98
22	104	10/7/98
31	102	11/10/98
31	103	11/6/98
31	104	11/12/98
64	101	9/5/98
64	102	9/8/98
74	103	9/8/98

bid	*bname*	*color*
101	Interlake	blue
102	Interlake	red
103	Clipper	green
104	Marine	red

EXERCISE-9:(NESTED QUERIES)

1.Increments for the ratings of persons who have sailed two different boats on the same day.

```
mysql > select rating+1 as rating  from Sailors where sid in(select sid from Rese
rves where day in(select day from Reserves group by day having count(day) =2) grou
p by sid having count(sid) =2);
+--------+
| rating |
+--------+
|      8 |
+--------+
```

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2.Ages of sailors whose name begins and ends with 'B' and has at least 3 characters

```
mysql > select age from Sailors where sid in(select sid from Sailors where name l
ike 'B_%B');
+------+
| age  |
+------+
| 63.5 |
+------+
```

3.Find the sids of all sailors who have reserved red boats but not green boats.

```
select sid from Reserves where bid  in(select bid from boat where
color='red') except select sid from Reserves where bid in(select bid from
boat where color='green');
```

Output

sid
64

4.All the sailors who have a rating of 10 or have reserved boat 104.

```
mysql > select name from Sailors where sid in(select sid from Sailors where ratin
g=10) UNION select name from Sailors where sid in(select sid from Reserves where
bid=104);
+--------+
| name   |
+--------+
| Rusty  |
| Zorba  |
| Dustin |
| Lubber |
+--------+
```

5. write a nested query to Find the names of sailors who have reserved boat 103.

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```
mysql> select name from Sailors where sid in(select sid from Reserves where bid=
103);
+---------+
| name    |
+---------+
| Dustin  |
| Lubber  |
| Horatio |
+---------+
```

6.write a nested query to Find the names of sailors who have reserved a red boat.

```
mysql> select name from Sailors where sid in(select sid from Reserves where bid
in(select bid from boat where color='red'));
+---------+
| name    |
+---------+
| Dustin  |
| Lubber  |
| Horatio |
+---------+
```

7.write a nested query to Find the names of sailors who have not reserved a red boat.

```
mysql> select name from Sailors where sid in(select sid from Reserves where sid
not in(select distinct sid from Reserves where bid in(select bid from boat where
 color='red')));
+---------+
| name    |
+---------+
| Horatio |
+---------+
```

8.Nested query to Find sailors whose rating is better than some sailor called Horatio.

```
mysql> select name from Sailors where rating>some(select rating from Sailors whe
re name='Horatio');
+---------+
| name    |
+---------+
| Lubber  |
| Andy    |
| Rusty   |
| Zorba   |
| Horatio |
+---------+
```

9.Nested query to find the sailors with highest rating.

```
mysql > select name from Sailors where rating=(select max(rating) from Sailors);
+-------+
| name  |
+-------+
| Rusty |
| Zorba |
+-------+
```

10.Find the names of sailors who have reserved all boats.

```
mysql > select name from Sailors where sid in(select sid from Reserves group by s
id having count(sid)=4);
+--------+
| name   |
+--------+
| Dustin |
+--------+
```

EXERCISE:10(Aggregation Functions)

1.Average age of Sailors

```
mysql > select avg(age) from Sailors;
+----------+
| avg(age) |
+----------+
|     36.9 |
+----------+
```

2.Average age of sailors with a rating of 10.

```
mysql > select avg(age) from Sailors where rating=10;
+----------+
| avg(age) |
+----------+
|     25.5 |
+----------+
```

3.Name and age of the oldest sailor

```
mysql > select name,age from Sailors where age=(select max(age)from Sailors);
+------+------+
| name | age  |
+------+------+
| BoB  | 63.5 |
+------+------+
```

4.Count the number of sailors.

```
mysql > select count(name)from Sailors;
+-------------+
| count(name) |
+-------------+
|          10 |
+-------------+
```

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5.number of different sailor names.

```
mysql> select count(distinct name)from Sailors;
+----------------------+
| count(distinct name) |
+----------------------+
|                    9 |
+----------------------+
```

6.Find the names of sailors who are older than the oldest sailor with a rating of 10.

```
mysql> select name from Sailors where age>(select age from Sailors where age=(se
lect max(age)from Sailors where rating=10)and rating=10);
+--------+
| name   |
+--------+
| Dustin |
| Lubber |
| BoB    |
+--------+
```

7.Find the age of the youngest sailor for each rating level.

```
mysql> select rating,min(age)as age  from Sailors group by rating;
+--------+------+
| rating | age  |
+--------+------+
|      1 |   33 |
|      3 | 25.5 |
|      7 |   35 |
|      8 | 25.5 |
|      9 |   35 |
|     10 |   16 |
+--------+------+
```

8.Find the age of the youngest sailor who is eligible to vote (i.e., is at least 18 years old) for each rating level with at least two such sailors.

```
mysql> select rating,min(age) as age from Sailors where age>=18 group by rating
 having count(name)>=2;
+--------+------+
| rating | age  |
+--------+------+
|      3 | 25.5 |
|      7 |   35 |
|      8 | 25.5 |
+--------+------+
```

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

```
mysql > select distinct r.bid, count(day) from Reserves as r inner join boat as b
on r.bid=b.bid and b.color='red' group by r.bid;
+------+------------+
| bid  | count(day) |
+------+------------+
|  102 |          3 |
|  104 |          2 |
+------+------------+
```

10.Find the average age of sailors for each rating level that has at least two sailors.

```
mysql > select rating, avg(age) from Sailors group by rating having count(name) >=2
;
+--------+----------+
| rating | avg(age) |
+--------+----------+
|      3 |     44.5 |
|      7 |       40 |
|      8 |     40.5 |
|     10 |     25.5 |
+--------+----------+
```

11.Find the average age of sailors who are of voting age (i.e., at least 18 years old) for each rating level that has at least two sailors.

```
mysql > select rating, avg(age) as avg_age from Sailors as s1 where age>=18 group
by rating having 2<=(select count(*)from Sailors as s2 where s1.rating=s2.rating
);
+--------+---------+
| rating | avg_age |
+--------+---------+
|      3 |    44.5 |
|      7 |      40 |
|      8 |    40.5 |
|     10 |      35 |
+--------+---------+
```

12.Find the average age of sailors who are of voting age (i.e., at least 18 years old) for each rating level that has at least two such sailors.

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```
mysql > select rating,avg(age) as avg_age from Sailors as s1 where age>=18 group
by rating having 2<=(select count(*) from Sailors as s2 where s1.rating=s2.rating
 and s2.age>=18);
+--------+---------+
| rating | avg_age |
+--------+---------+
|      3 |    44.5 |
|      7 |      40 |
|      8 |    40.5 |
+--------+---------+
```

13.Find those ratings for which the average age of sailors is the minimum over all ratings.

```
mysql > select s.rating,avg(s.age) as avg_age from Sailors as s group by s.rating
having avg_age<=ALL(select avg(s2.age) from Sailors as s2 group by s2.rating);
+--------+---------+
| rating | avg_age |
+--------+---------+
|     10 |    25.5 |
+--------+---------+
```

[NOTE:SINCE EXCEPT KEYWORD IS NOT WORKING IN TERMINAL ONLINE COMPILER IS USED]