

**Consider the DB schema:**

**Sailors**(sid,sname,rating,age)

**Boats**(bid,bname,color)

**Reserves**(sid,bid,date)

Where key attributes have been underlined.

- Find the average age of sailors with a rating of 10

```
SELECT AVG(S.age)
FROM Sailors S
WHERE S.rating=10
```

- Count the number of different sailor names

```
SELECT COUNT(distinct S.sname)
FROM Sailors S
```

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

```
SELECT B.bid, COUNT(*) as Reservecount
FROM Boats B, Reserves R
WHERE R.bid=B.bid AND B.color='red'
GROUP BY B.bid
```

- Find the average and maximum age of sailors for each rating level that is associated with at least three sailors

```
SELECT S.rating, AVG(S.age) as AvgAge, MAX(S.age) as  
MaxAge  
FROM Sailors S  
GROUP BY S.rating  
HAVING COUNT(*)>=3
```

- Find the average age of sailors who are 18 or older for each rating level that is associated with at least three such sailors

```
SELECT S.rating, AVG(S.age) as AvgAge  
FROM Sailors S  
WHERE S.age>17  
GROUP BY S.rating  
HAVING COUNT(*)>=3
```

- For each boat name, find the number of different sailors that reserved a boat with such a name

```
SELECT bname, COUNT(distinct sid)
FROM Boats, Reserves
WHERE Boats.bid=Reserves.bid
GROUP BY bname
```

- For each boat, find the number of different sailors that reserved it on 15/02/01

```
SELECT bid, COUNT(sid)
FROM Reserves
WHERE date='15/02/01'
GROUP BY bid
```

- For each boat, find its name and the number of different sailors that reserved it on 15/02/01

```
SELECT Boats.bid, bname, COUNT(sid)
FROM Boats, Reserves
WHERE Boats.bid=Reserves.bid AND date='15/02/01'
GROUP BY Boats.bid, bname
```

- Find the name and age of the oldest sailor.

**INCORRECT query:**

```
SELECT S.sname,MAX(S.age)
FROM Sailors S
```

**CORRECT QUERY:**

```
SELECT S.sname,S.age
FROM Sailors S
WHERE S.age=(SELECT MAX(S1.age)
              FROM Sailors S1)
```



## QUESTIONS:

Can a given boat (bid) have different names and colors?

Can a given boat name be given to different boats?

Can a given boat be reserved by different sailors?

Can the same boat be reserved by the same sailor more than once?

Can the same boat be reserved by the same sailor twice in the same day?

Can tuple (001,2A1,15/02/01) exist in relation Reserves if relations

Sailors and Boats contain the following tuples:

### Sailors

(001, Smith, 9, 35)

(002, White, 10, 45)

(003, Clark, 8, 23)

## Boats

(2A2, Bonnie, red)

(3B2, Cindy, blue)

(2D4, Molly, yellow)

(7G1, Timmy, white)