

Queries

Database I

Database schema

sailor(sid, sname, rating, age)

boat(bid, bname, color)

reserve(sid(sailor), bid(boat), day)

Database instance

boat

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

reserve

sid	bid	day
22	101	1998-10-10
22	102	1998-10-10
22	103	1998-10-08
22	104	1998-10-07
31	102	1998-11-10
31	103	1998-11-06
31	104	1998-11-12
64	101	1998-09-05
64	102	1998-09-08
74	103	1998-09-08

sailor

sid	sname	rating	age
22	Dustin	7	45
29	Brutus	1	33
31	Lubber	8	55.5
32	Andy	8	25.5
58	Rusty	10	35
64	Horatio	7	35
71	Zorba	10	16
74	Horatio	9	35
85	Art	3	25.5
95	Bob	3	63.5

Queries - Warm up

Q1: encontre os velejadores que já reservaram o barco número 103

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```
select s.* from sailor s natural join reserve r  
       where r.bid=103;
```

Q1a: e quem nunca reservou o barco 103?

Queries - Warm up

Q1: encontre os velejadores que já reservaram o barco número 103

```
select s.* from sailor s natural join reserve r
      where r.bid=103;
```

Q1a: e quem nunca reservou o barco 103?

```
select s.* from sailor s natural join reserve r
      where r.bid!=103; -- Funciona? NÃO
select s.* from sailor s natural join reserve r
where s.sid not in (select sid from reserve
                   where bid=103);
```

Queries - Warm up

Q2: Find the names of sailors who have reserved a red boat
(encontre os nomes dos velejadores que reservaram um barco vermelho)

```
select s.sname from sailor s natural join reserve r natural join boat b  
where b.color='red';
```

Q3: Find the colors of boats reserved by Lubber
(encontre as cores dos barcos reservados pelo Lubber)

```
select b.color from sailor s natural join reserve r natural join boat b  
where s.sname='Lubber';
```

Queries - Warm up

Q4: Find the names of sailors who have reserved at least one boat
(encontre os nomes dos velejadores que reservaram pelo menos um barco)

```
select s.sname from sailor s natural join reserve r;
```

-- se fosse “pelo menos dois barcos” (diferentes)

```
select s.sname from sailor s natural join reserve r group by s.sid  
having count(distinct r.bid) > 1;
```

Q5: Find the names of sailors who have reserved a red or a green boat
(retorne os velejadores que reservaram um barco vermelho ou um verde)

```
select s.sname from sailor s natural join reserve r natural join boat b  
where b.color in ('red', 'green');
```


Queries

Q6: Find the names of sailors who have reserved both a red and a green boat
(encontre os nomes dos velejadores que tenham reservados barcos vermelhos e barcos verdes)

```
SELECT S.sname
FROM sailor S natural join reserve R1
              natural join boat B1
              join reserve R2 on S.sid=R2.sid
              join boat B2    on R2.bid=B2.bid
WHERE B1.color = 'red' AND B2.color = 'green';
```

```
SELECT S.sname
FROM sailor S
where S.sid in ( select r.sid
                 from reserve r natural join boat b
                 where b.color='red')
and    S.sid in (select r.sid
                 from reserve r natural join boat b
                 where b.color='green');
```

Queries

Q6a: Find the names of sailors who have reserved a red but not a green boat

Queries

Q7: (HOT) Find the names of sailors who have reserved at least two different boats
(encontre os nomes dos velejadores que tenham reservado pelo menos dois barcos diferentes)

Queries

Q8: (HOT) Find the names of sailors who have reserved all boats
(encontre os nomes dos velejadores que reservaram todos os barcos)

Queries

Q9: (HOT) Compute increments for the ratings of persons who have sailed two different boats on the same day

(calcule o incremento dos rating dos velejadores que velejaram dois barcos diferentes no mesmo dia)

Queries

Q10: Find the oldest sailor's name
(Encontre o velejador mais velho)

Q11: Find the youngest sailor's name
(Encontre o velejador mais velho)

Queries

Q12: Count the number of boats by color
(conte o número de barcos por cor)