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CS-300-ON

Dr. Johnson

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Relations:

*Sailors(sid: integer, sname: string, rating: integer, age: real)*

*Boats(bid: integer, bname: string, color: string)*

*Reserves(sid: integer, bid: integer, day: date)*

σ   π  ⋈, ⋃

Queries:

1. List only the name and rating for all sailors.

Π sname, rating (Sailors)

1. List all sailor information for sailors with a rating > 8.

σ rating > 8 (Sailors)

1. List the boat ID for all red boats.

Π bid (σ color = ‘red’ (Boats))

1. List the boat ID for all red boats and all green boats.

Π bid (σ color = ‘red’ or color = ‘green’ (Boats))

1. List the name of every sailor who is aged 16 or under.

Π sname (σ age ≤ 16 (Sailors))

1. List the name and rating for all sailors who have a rating of 7 and below.

Π sname, rating (σ rating ≤ 7 (Sailors))

1. Count the number of reservations for boat number 4.

ρR(myCount) ζ COUNT bid (σ bid = 4 (Boats))

1. Find the names of sailors who have reserved boat 103.

Π sname (σ bid = 103 (Π sname, sid (Sailors) ⋈ Π bid, sid Reserves))

1. Find the names of sailors who have reserved a red boat

Π sname (Sailors) (σ color = ‘red’ (Π sname, sid (Sailors) ⋈Sailors.sid = Reserves.sid Π sid, bid (Reserves)⋈ Reserves.bid = Boats.bid Π bid, color (Boats))

1. Find the colors of the boats reserved by the Lubber.

Π color (Boats) (σ sname = ‘Lubber’ (Π sname, sid (Sailors) ⋈ Π sid, bid (Reserves) ⋈ Π bid, color (Boats))

1. Find the names of sailors who have reserved a red and a green boat.

Π sname (Sailors) (σ color = ‘red’ or color = ‘green’ (Π sname, sid (Sailors) ⋈Sailors.sid = Reserves.sid Π sid, bid (Reserves)⋈Reserves.bid = Boats.bid Π bid, color (Boats))

1. Find the names of sailors with age 20 or over who have not reserved a boat

Π sname (σ age ≥ 20 (Π sname, sid, age (Sailors) ⋈Sailors.sid ≠ Reserves.sid Π day, sid Reserves))