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CS300-ON

Assignment 2 - Writing Queries using Relational Algebra

1. List only the name and rating for all Sailors:

π(sname, rating)(S)

2. List all sailor information for sailors with a rating greater than 8:

σ(rating > 8)(S)

3. List the boat id for all red boats:

π(bid)(σ(color = 'red')(B))

4. List the boat id for all red boats and all green boats:

π(bid)(σ(color = 'red' ⋃ color = 'green')(B))

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

π(sname)(σ(age <= 16)(S))

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

π(sname, rating)(σ(rating <= 7)(S))

7. Count the number of reservations for boat number 4:

σ(bid = 4)(R)|

8. Find the names of sailors who have reserved boat 103:

π(sname)(σ(bid = 103)(R ⋈ S))

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

π(sname)(σ(color = 'red')(B ⋈ R ⋈ S))

10. Find the colors of the boats reserved by Lubber:

π(color)(σ(sname = 'Lubber')(B ⋈ R))

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

π(sname)(σ(color = 'red' ⋀ σ(color = 'green')(B ⋈ R ⋈ S)))

12. Find the names of sailors with age over 20 who have not reserved a red boat:

π(sname)(S - π(sname)(σ(color = 'red')(B ⋈ R ⋈ S)))