Data Management Systems

CS 300-ON

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**Writing Queries using Relational Algebra**

**Assignment 2**

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

* π sname,rating(S)

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

* σ rating > 8(S)

1. **List the boat id for boats all red boats.**

* π bid (σ color=”red”(B))

1. **List the boat id for all red boats and all green boats.**

* π bid (σ color=”red” ^ “green”(B))

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

* σ rating (S)

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

* π sname,rating(σ rating ≤ 7 (S))

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

* ζ COUNT sid(σ bid=4(R))

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

* π sname(σ bid=103(R)) ⋈(S)

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

* π sname(σ color=”red”(B)) ⋈(S) ⋈(R))

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

* π color (B) ⋈(R) ⋈ σ sname=”Lubber” (S)

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

* π sname(σ color=”red”^ color=”green”(B)) ⋈(S) ⋈(R))

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

* π sname(σ age>20(S)) ⋃ σ sid = *null*(R) ⋃ σ color=”red”(B)