sid	sname	rating	age
22	Dustin	7	45.0
29	Brutus	1	33.3
31	Lubber	8	55.5
32	Andy	8	25.5
58	Rusty	10	35.0
64	Horatio	7	35.0
71	Zorba	10	16.0
74	Horatio	9	35.0
85	Art	3	25.5
95	Bob	3	63.5

Sailors

sid	bid	day
22	101	10/10/98
22	102	10/10/98
22	103	10/8/98
22	104	10/7/98
31	102	11/10/98
31	103	11/6/98
31	104	11/12/98
64	101	9/5/98
64	102	9/8/98
74	103	9/8/98

Reserves

bid	bname	color
101	Interlake	Blue
102	Interlake	Red
103	Clipper	Green
104	Marine	Red

Boats

Q1: Find the names of sailors who have reserved boat 103

$\Pi_{sname}\left(\left(\sigma_{bid=103}(Reserves)\right) \bowtie Sailors\right)$

$\left(\sigma_{bid=103}(Reserves)\right)$:

22	103	10/8/98
31	103	11/6/98
74	103	9/8/98

$\bowtie$ Sailors

sid	sname	rating	age	bid	day
22	Dustin	7	45.0	103	10/8/98
31	Lubber	8	55.5	103	11/6/98
74	Horatio	9	35.0	103	9/8/98

Q2. Find the names of sailors who have served a red boat

$\Pi\left(\left(\sigma_{color=red}(Boats)\right) \bowtie Reserved \bowtie Sailors\right)$

Sname ← color = red

bid	bname	color
102	Interlake	red
104	Marine	red

⋈ Reserved ⋈ Sailors

bid	bname	color	sid	day
102	Interlake	red	22	10/10/98
102	Interlake	red	31	11/10/98
102	Interlake	red	64	9/8/98
104	Marine	red	22	10/7/98
104	Marine	red	31	11/12/98

⋈ Sailors

bid	bname	color	sid	day	sname	rating
102	Interlake	red	22	10/10/98	Dustin	- - -
102	Interlake	red	31	11/10/98	Lubber	
102	Interlake	red	64	9/8/98	Horatio	
104	Marine	red	22	10/7/98	Dustin	
104	Marine	red	31	11/12/98	Lubber	

(Q3): Find the color of boats reserved by Lubber

$$\Pi_{color}\left(\left(\sigma_{sname='Lubber'} Sailors\right) \bowtie Reserves \bowtie Boats\right)$$

$$\Downarrow$$

$$\left(\{31, Lubber, 8, 55.5\}\right) \bowtie Reserves \bowtie Boats$$

31	Lubber	8	55.5	102	11/10/98	Red
31	Lubber	8	55.5	103	11/6/98	Green
31	Lubber	8	55.5	104	11/12/98	Red

$\Rightarrow$

(Q6) Find the names of sailors who have reserved on red boat or green boat

$$red := \Pi_{sname}\left(\left(\sigma_{color=red} Boats\right) \bowtie Reserves \bowtie Sailors\right)$$

$$green := \Pi\left(\left(\sigma_{color=green} Boats\right) \bowtie Reserves \bowtie Sailors\right)$$

$$Result = red \cup green$$

Both: $red \cap green$