

Structured Query Language - Practice Queries -

CS430/630
Lecture 5

Slides based on “Database Management Systems” 3rd ed, Ramakrishnan and Gehrke

Example Schema

Sailors

<u>sid</u>	sname	rating	age
22	dustin	7	45.0
31	lubber	8	55.5
58	rusty	10	35.0

Boats

<u>bid</u>	name	color
101	interlake	red
103	clipper	green

Reserves

<u>sid</u>	<u>bid</u>	<u>day</u>
22	101	10/10/96
58	103	11/12/96



Query Example 1

- ▶ “Find names of sailors who’ve reserved boat #103”

```
SELECT S.sname
FROM Sailors S, Reserves R
WHERE S.sid=R.sid AND R.bid=103
```

Sailors

<u>sid</u>	sname	rating	age
------------	-------	--------	-----

Boats

<u>bid</u>	name	color
------------	------	-------

Reserves

<u>sid</u>	<u>bid</u>	<u>day</u>
------------	------------	------------



Query Example 2

- ▶ “Find names of sailors who’ve reserved a red boat”

```
SELECT S.sname
FROM Sailors S, Reserves R, Boats B
WHERE S.sid=R.sid AND R.bid=B.bid
      AND B.color='red';
```

Sailors

<u>sid</u>	sname	rating	age
------------	-------	--------	-----

Boats

<u>bid</u>	name	color
------------	------	-------

Reserves

<u>sid</u>	<u>bid</u>	<u>day</u>
------------	------------	------------



Query Example 3

- ▶ “Find sailor ids who’ve reserved a red or a green boat; list each matching sailor id once”

```
SELECT DISTINCT S.sid
FROM   Sailors S, Reserves R, Boats B
WHERE  S.sid=R.sid AND R.bid=B.bid
      AND (B.color='red' OR B.color='green');
```

Sailors

<u>sid</u>	sname	rating	age
------------	-------	--------	-----

Boats

<u>bid</u>	name	color
------------	------	-------

Reserves

<u>sid</u>	<u>bid</u>	<u>day</u>
------------	------------	------------



Same query with set operations

```
SELECT S.sid
FROM Sailors S, Boats B, Reserves R
WHERE S.sid=R.sid AND R.bid=B.bid
      AND B.color='red'
UNION
SELECT S.sid
FROM Sailors S, Boats B, Reserves R
WHERE S.sid=R.sid AND R.bid=B.bid
      AND B.color='green'
```



Query Example 4

- ▶ “Find sailor ids who’ve reserved a red and a green boat”

```
SELECT S.sid
FROM Sailors S, Boats B1, Reserves R1,
     Boats B2, Reserves R2
WHERE S.sid=R1.sid AND R1.bid=B1.bid
      AND S.sid=R2.sid AND R2.bid=B2.bid
      AND (B1.color='red' AND B2.color='green')
```

Sailors

<u>sid</u>	sname	rating	age
------------	-------	--------	-----

Boats

<u>bid</u>	name	color
------------	------	-------

Reserves

<u>sid</u>	<u>bid</u>	<u>day</u>
------------	------------	------------



Same query with set operations

```
SELECT S.sid
FROM Sailors S, Boats B, Reserves R
WHERE S.sid=R.sid AND R.bid=B.bid
      AND B.color='red'
INTERSECT
SELECT S.sid
FROM Sailors S, Boats B, Reserves R
WHERE S.sid=R.sid AND R.bid=B.bid
      AND B.color='green'
```



LIKE with escape sequence

```
SELECT S.age, S.age-5 AS age1, 2*S.age AS age2
FROM Sailors S
WHERE S.sname LIKE 'd_!%n' ESCAPE '!';
```

