Structured Query Language
- Practice Queries -

CS430/630
Lecture 5

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

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Example Schema

Sailors

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

Boats

bid	name	color
101	interlake	red
103	clipper	green

Reserves

sid	bid	day
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

sid	sname	rating	age

Boats

bid	name	color

Reserves

sid	bid	day

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

sid	sname	rating	age

Boats

bid	name	color

Reserves

sid	bid	day

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

sid	sname	rating	age

Boats

bid	name	color

Reserves

sid	bid	day

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 <u>and</u> 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

sid	sname	rating	age

Boats

bid	name	color

Reserves

sid	bid	day

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_!%' ESCAPE '!';
```