Structured Query Language - Practice Queries -

CS430/630
Lecture 5

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

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_!%n' ESCAPE '!';