Correlated vs. Uncorrelated Subqueries

Example: IN and EXISTS

- Considering the following tables:

Sailors

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

Reserves

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

- How do the following queries work ?

```
SELECT sname
FROM Sailors
WHERE sid IN ( SELECT sid
               FROM Reserves )
```

```
SELECT sname
FROM Sailors S
WHERE EXISTS ( SELECT *
               FROM Reserves  R
               WHERE S.sid = R.sid )
```

Uncorrelated Subquery

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This subquery was computed ONCE !

Correlated Subquery

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               FROM Reserves  R
               WHERE S.sid = R.sid )
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This was used and re-computed for each row of the outer query !

Query Without Nesting

- The same query using join

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

- More efficient solution and in this case simpler!
- Avoid nesting as much as possible