

SQL JOINs related syntax and examples



SQL Join (ANSI syntax) Operators

- □ Oracle also supports ANSI standard Join syntax, since Oracle 9i
- FROM table1 [INNER] JOIN table2 ON table1.column = table2.column

OR

- FROM table1 [INNER] JOIN table2 USING (common_col_name)
 - Note that you need to put ().

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ON 이각 같은기능: column 이름이 달각도 = 고 이으면 됨

(Q1) SELECT S.sname FROM Sailors S, Reserves R WHERE S.sid = R.sid and R.bid = 103;

SELECT S.sname
FROM Sailors S INNER JOIN Reserves R ON S.sid = R.sid
WHERE R.bid = 103;

SELECT S.sname
 FROM Sailors S JOIN Reserves R ON S.sid = R.sid
 WHERE R.bid = 103;

SELECT S.sname
FROM Sailors S JOIN Reserves R USING (sid)
WHERE R.bid = 103;

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SQL Join (ANSI synt.) cont'd

- Examples: for more than two tables
- SELECT S.sname
 FROM Sailors S, Reserves R, Boats B
 WHERE S.sid = R.sid and R.bid = B.bid and B.color='Red';
- SELECT S.sname
 FROM Sailors S INNER JOIN Reserves R ON S.sid = R.sid INNER JOIN Boats B ON R.bid = \$.bid
 WHERE B.color='Red';
- SELECT S.sname
 FROM Sailors S
 JOIN Reserves R ON S.sid = R.sid JOIN Boats B ON R.bid = \$8.bid
 WHERE B.color='Red';
- SELECT S.sname
 FROM Sailors S JOIN Reserves R USING (sid) JOIN Boats B USING (bid)
 WHERE B.color='Red';
 - SELECT sname FROM Sailors JOIN Reserves USING (sid) JOIN Boats USING (bid) WHERE color='Red';



SQL Join (ANSI synt.) cont'd

- Examples: for more than one columns.
- □ Let's say that table T1 and table T2 have two columns to be joined.

 T1 (A, C1*, C2*) T2 (C1, C2, B)
- (I) SELECT A
 FROM T1, T2
 WHERE T1.C1= T2.C1 and T1.C2=T2.C2;
- SELECT A
 FROM T1 INNER JOIN T2 ON T1.C1= T2.C1 and T1.C2=T2.C2;
 - SELECT A
 FROM T1 JOIN T2 ON T1.C1= T2.C1 and T1.C2=T2.C2;
- SELECT A FROM T1 JOIN T2 USING (C1, C2);



SQL Join (ANSI synt.) cont'd

- □ OUTER 도 비슷한 Syntax 구조
- FROM table1 OUTER JOIN table2 ON table1.column = table2.column
 OR FROM table1 [INNER] JOIN table2 USING (common_col_name)
- 미 여러 개 컬럼도 INNER JOIN과 같은 형식으로 확장. LEFT, FULL도 마찬가지 방식임
- Examples:
- SELECT S.sid, R.bid
 FROM Sailors S right outer join Reserves R WHERE S.sid = R.sid;
- SELECT S.sname
 FROM Sailors S RIGHT OUTER JOIN Reserves R ON S.sid = R.sid
- SELECT S.sname
 FROM Sailors S RIGHT OUTER JOIN Reserves R USING (sid)
- ♦ SELECT A FROM T1 RIGHT OUTER JOIN T2 ON T1.C1= T2.C1 and T1.C2=T2.C2;
 ♦ SELECT A FROM T1 RIGHT OUTER JOIN T2 USING (C1, C2);

Nested Query in From clause

Old SQL allowed nested queries in WHERE. In modern DBMS, You may have nested queries in FROM as well.

Example (similar to Q36). Find the average age of sailors for each rating level that has at least two such sailors. ि वानुमाम्बर् व्हर्मः

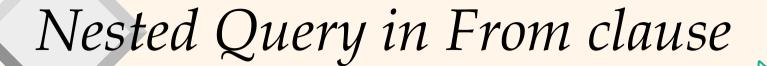
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SELECT S.rating, AVG (S.age) AS avg age
FROM Sailors S
GROUP BY S.rating
HAVING 1 < (SELECT COUNT(*)
            FROM Sailors S2
            WHERE S.rating=S2.rating);
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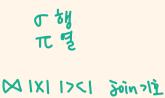
select s.rating, avg(s.age) from sailors s group by s.rating having count(*)>1;

SELECT Temp.rating, Temp.avg age AS avg age

FROM (SELECT rating, AVG (S.age) AS avg_age, COUNT(*) AS ratingcount FROM Sailor S rating ava age ratingcount

	GROUP BY S.rating) AS Temp		<u> </u>	1
WHERE Temp.ratingcount > 1		3		2 2
Database Management Systems, Dr. Junho Shim		9		2





Old SQL allowed nested queries in WHERE. In modern DBMS, You may have nested queries in FROM as well.

SELECT sel_A
FROM T1, (select sel_B from T2 where cond_B1) as T2_new
WHERE cond_B2

$$\Pi_{sel_A} \left(\rho_{cond_B2} \left(T1 \times \left(\Pi_{sel_B} \rho_{cond_B1} T2 \right) \right) \right)$$