Introduction to DB2 Database

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Agenda

- **About Join**

- **Types of Joins**

- **INNER JOIN / EQUI JOIN / NATURAL JOIN / SIMPLE JOIN**

- **NON EQUI JOIN**

- **OUTER JOIN**

  - **Left Outer Join**

  - **Right Outer Join**

  - **Full Outer Join**

- **SELF JOIN**

- **CROSS JOIN**

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What Is a JOIN?

- The JOIN keyword is used in an SQL statement to retrieve data from two or more tables, based on a relationship between certain columns in these tables.

- Tables in a database are often related to each other with keys.

- **INNER JOIN / EQUI JOIN / NATURAL JOIN / SIMPLE JOIN**

- **NON EQUI JOIN**

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INNER JOIN

- An inner join is the most common join operation used in applications and can be regarded as the default join-type. Returns matching rows from both the joining tables. It is nothing but a EQUI JOIN or also called NATURAL JOIN or SIMPLE JOIN.

- INNER JOIN

  - **SELECT * FROM EMP E INNER JOIN DEPT D ON E.DEPTNO = D.DEPTNO;**

- EQUI JOIN :

  - **SELECT ENAME, DNAME, SAL FROM EMP E, DEPT D WHERE D.DEPTNO = E.DEPTNO;**
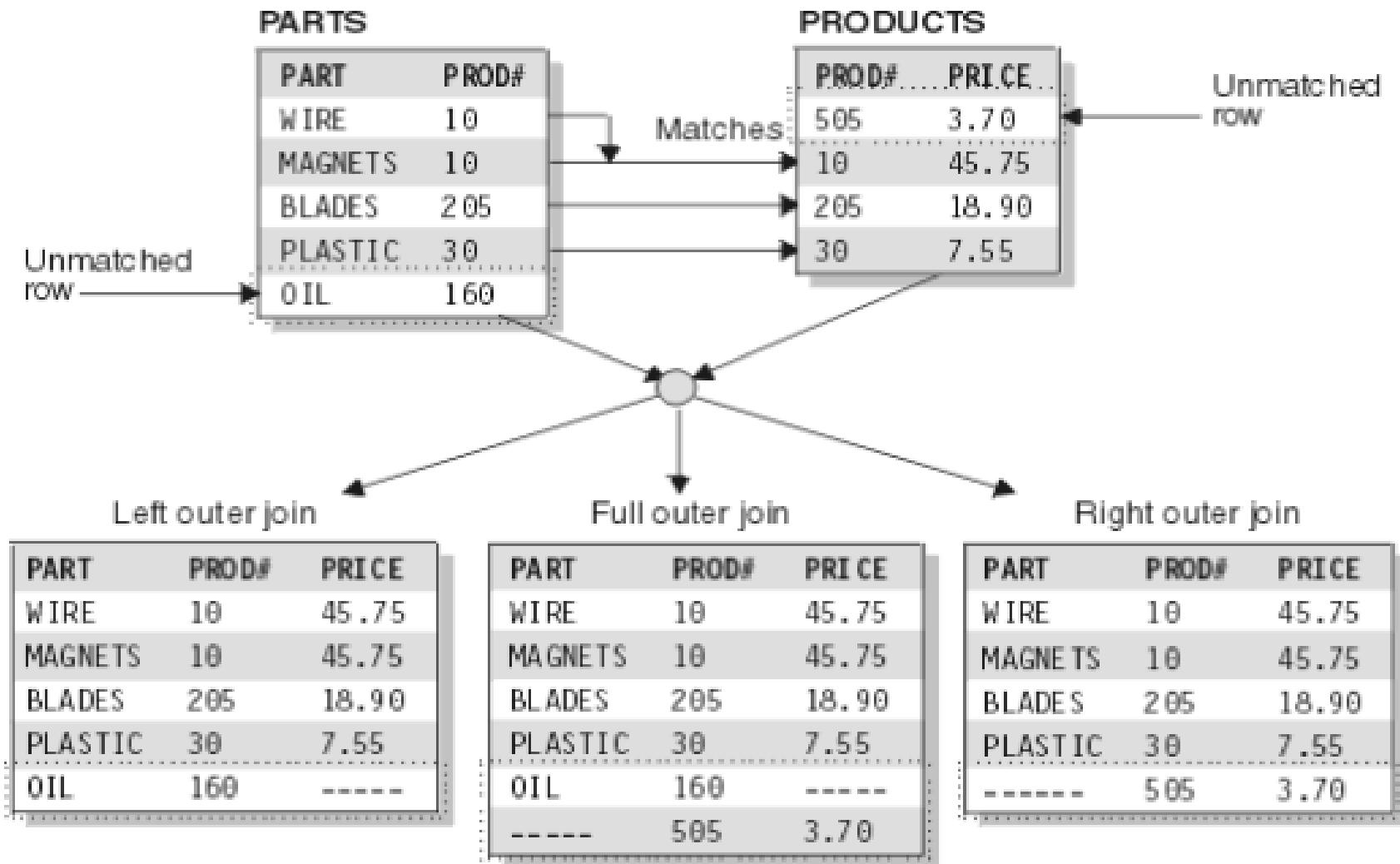
NON-EQUI JOIN

- Returns rows by comparing data from one table to the column in another table which has no common columns in both.

- Non equi joins is used to return result from two or more tables where exact join is not possible.

  - **SELECT EMPNO, ENAME, SAL, GRADE FROM EMP E, SALGRADE S WHERE SAL BETWEEN LOSAL AND HISAL;**

OUTER JOIN

- An outer join does not require each record in the two joined tables to have a matching record.

- **LEFT OUTER JOIN :** Returns non matching rows from the table which is on left side of the join clause.

- **RIGHT OUTER JOIN :** Returns non matching rows from the table which is on right side of the join clause.

- **FULL OUTER JOIN :** Returns non matching rows from both tables used in the join clause.

  - **SELECT ENAME, DNAME, SAL FROM EMP E FULL OUTER JOIN DEPT D ON D.DEPTNO = E.DEPTNO;**

PARTS

PART	PROD#
WIRE	10
MAGNETS	10
BLADES	205
PLASTIC	30
OIL	160

PRODUCTS

PROD#	PRICE
505	3.70
10	45.75
205	18.90
30	7.55

Unmatched row

Unmatched row

Matches

Left outer join

PART	PROD#	PRICE
WIRE	10	45.75
MAGNETS	10	45.75
BLADES	205	18.90
PLASTIC	30	7.55
OIL	160	-----

Full outer join

PART	PROD#	PRICE
WIRE	10	45.75
MAGNETS	10	45.75
BLADES	205	18.90
PLASTIC	30	7.55
OIL	160	-----
-----	505	3.70

Right outer join

PART	PROD#	PRICE
WIRE	10	45.75
MAGNETS	10	45.75
BLADES	205	18.90
PLASTIC	30	7.55
-----	505	3.70

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SELF JOIN

- A self join is a join of a table to itself. This table appears twice in the FROM clause and is followed by table aliases that qualify column names in the join condition.

  - **SELECT E.ENAME, M.ENAME FROM EMP E, EMP M WHERE E.MGR = M.EMPNO;**

CROSS JOIN

- It gives the Cartesian product of the number of columns present in the two tables.

  - **SELECT EMPNO, ENAME FROM EMP,DEPT;**

Set Operators

- The DB2 set operator allows you to combine two or more queries into a single query. Set operators combine queries in a specified manner to create a single result set.

  - UNION

  - UNION ALL

  - INTERSECT

  - INTERSECT ALL

  - EXPECT

  - EXCEPT ALL

UNION & UNION ALL

- A UNION operation combines two sets of individual query and removes duplicates.

- The UNION ALL expression does the same but does not remove the duplicates.

Index

- An index can be created in a table to find data more quickly and efficiently.

- The CREATE INDEX statement is used to create indexes in tables.

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Any Queries ...

Thank Q