WEEK 3: READING MATERIAL 3

Outer Joins

It retrieve all rows that match the WHERE clause and also those that have a NULL value in the column used for join. The concept and need of outer join has been explained below.

Sometimes, we might want to see the data from one table, even if there is no corresponding row in the joining table. Oracle provides the outer join mechanism for this.

Such rows can be forcefully selected by using the outer join symbol (+). The corresponding columns for that row will have Nulls. For example, to write a query that performs an outer join of tables A and B and returns all rows from A, apply the outer-join operator (+) to all columns of B in the join condition. For all rows in A that have no matching rows in B, the query returns NULL values for the columns in B.

Example:

In the emp table, no record of the employee belongs to the department 40. Therefore, in case of equi join, the row of department 40 from the dept table will not be displayed. In order to include that row in the output Outer join is used.

- Display the list of employees working in each department. Display the department information even if no employee belongs to that department.

SQL>*SELECT empno, ename, emp.deptno, dname, loc FROM emp, dept*

WHERE emp.deptno (+) = dept.deptno;

OUTPUT:

EMPNO.	ENAME	EMP.DEPTNO	DNAME
7369	SMITH	20	RESEARCH
7499	ALLEN	30	SALES
7521	WARD	30	SALES
7566	JONES	20	RESEARCH
7654	MARTIN	30	SALES
7698	BLAKE	30	SALES
7782	CLARK	10	ACCOUNTING
7788	SCOTT	20	RESEARCH
7839	KING	10	ACCOUNTING

7844	TURNER	30	SALES
7876	ADAMS	20	RESEARCH
7900	JAMES	30	SALES
7902	FORD	20	RESEARCH
7934	MILLER	10	ACCOUNTING
7945	ALLEN	20	ACCOUNTING
7526	MARTIN	20	RESEARCH
7985	SCOTT	30	SALES
		40	OPERATIONS

If the symbol (+) is placed on the other side of the equation then all the employee details with no corresponding department name and location, will be displayed with NULL values in DNAME and LOC column.

Outer Join is of two types, i.e., left outer join and right outer join.

Left/Right-Outer joins

Left outer joins include all records from the first (left) of two tables, A = B (+), while right outer joins include all records from the second (right) of two tables, A (+) = B.

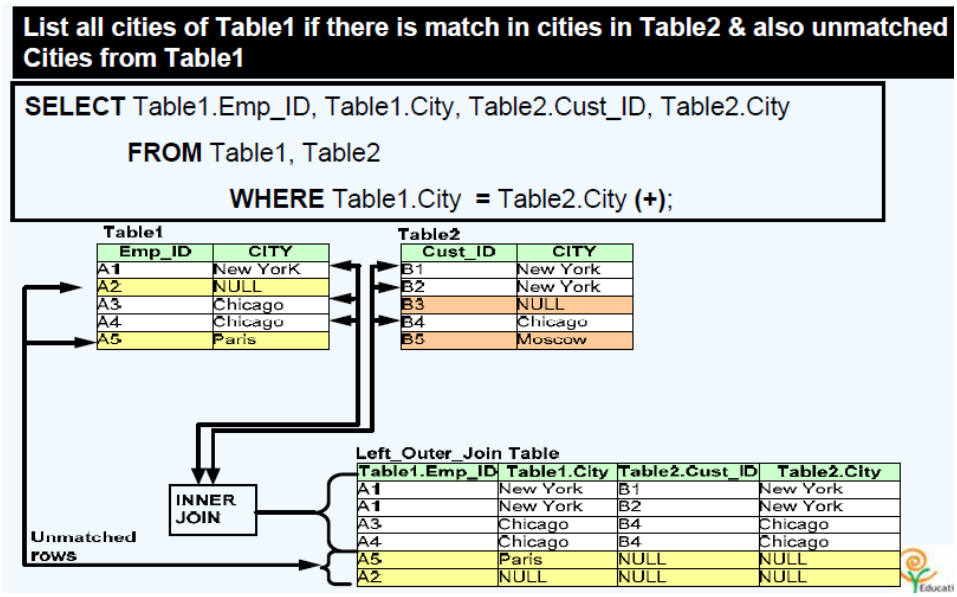
Example:

Can you answer, the earlier example of outer join is left outer join or right outer join?

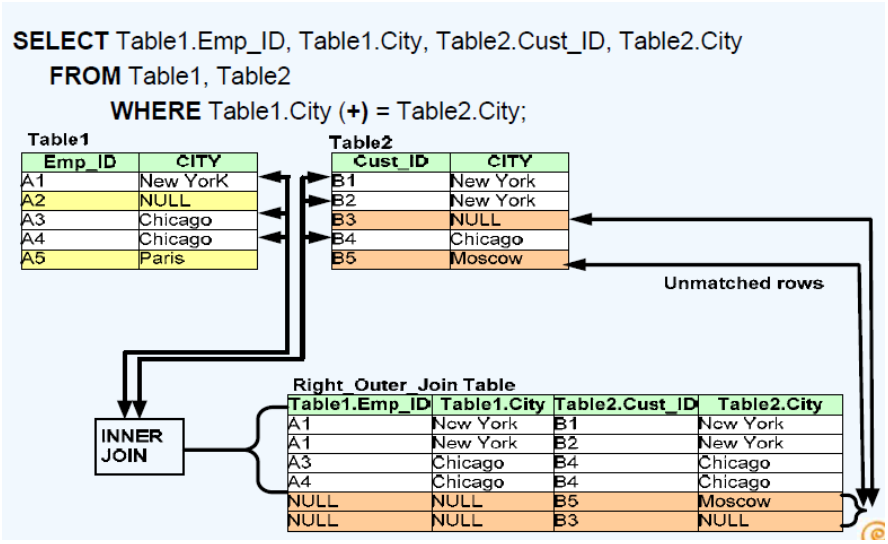
SQL>*SELECT empno, ename, emp.deptno, dname, loc FROM emp, dept*
WHERE emp.deptno (+) = dept.deptno;

Yes, it is right outer join, as full right table appears in the output by having NULL corresponding to missing values of EMP table. Here, right table appears fully and + appears on left side, so it is right outer join. In simple words, in right outer join plus appears on left side, while in left outer join plus appears on right side.

A case of left outer join has been illustrated below.



A case of right outer join on same database has been illustrated below.



Example of Left Outer Join

• List all customer details and loan details if they have availed loans.

SQL>*Select Customer_details.Cust_id,Cust_Last_name,Loan_no,Amount_in_dollars*

from Customer_details,Customer_loan

where Customer_details.Cust_id = Customer_loan.Cust_id (+);

Rules to Place (+) operator:

- The outer join symbol (+) cannot be on both sides.
- We cannot “outer join” the same table to more than one other table in a single SELECT statement.
- A condition involving an outer join may not use the IN operator or be linked to another condition by the OR operator.