SQL Join

Join clause combines rows from two or more tables.
Creates a set of rows in a temporary table

Types of SQL Join

1) Inner Join

- Returns only matched rows from the participating tables.
- Match happened only at the key record of participating tables

2)Outer Join

- Return all rows from one table
- Matching rows from the secondary table
- Comparison columns should be equal in both the tables

List of SQL Join

- Inner Join
- Left Join or Left Outer Join
- Right Join or Right Outer Join
- Full Outer Join
- Natural Join
- Cross Join
- Self Join

Inner Join

- The INNER JOIN selects all rows from both participating tables as long as there ia a match between the columns.
  An SQL INNER JOIN is same as JOIN clause , combining rows from two or more tables.

Example : -

INNER JOIN

```
SELECT * FROM table_A
INNER JOIN table_B
ON  table_A.A=table_B.A;
```

Left Join or Left Outer Join

- The SQL LEFT JOIN , joins two tables and fetches rows based on a condition, which are matching in both the tables.
- The unmatches rows will also be available from the table before the JOIN clause.

Example :-

LEFT JOIN or LEFT OUTER JOIN

```
SELECT * FROM table_A
LEFT JOIN table_B
ON table_A.A=table_B.A;
```

Right Join or Right Outer Join

- The SQL RIGHT JOIN , joins two tables and fetched rows based on a condition,which are matching in both the tables.
- The unmatched rows will also be available from the table written after the JOIN clause.

Example :-

RIGHT JOIN or RIGHT OUTER JOIN

```
SELECT *FROM table_A
RIGHT JOIN table_B
ON table_A.A=table_B.A;
```

Full Outer Join

- Combines the result of both left and right outer joins.
- Return all matched or unmatched rows. Include tables on both sides of the join clause.

Example:-

FULL OUTER JOIN

```
SELECT * FROM table_A
FULL OUTER JOIN table_B
ON table_A.A=table_B.A;
```

Natural Join

- The SQL NATURAL JOIN is a type of EQUI JOIN and is structured in such a way that,columns with same name os associate tables will apper once only.
  The associacted tables have one or more pairs of identically named columns.
  The columns must be the same data type.
  Don’t use ON clause in a natural join.

Example :-

NATURAL JOIN

```
SELECT *
FROM table_A
NATURAL JOIN table_B;
```

Cross Join

- The SQL CROSS JOIN produces a result set which is the number of rows in the first table multiplied by the number of rows in the second table,if no WHERE clause is used along with CROSS JOIN.

  This kind of result is called as Cartesian product.

  If, WHERE clause is used with CROSS JOIN, it functions like an INNE JOIN.

Example :-

```
CROSS JOIN
 SELECT * FROM
table_A
CROSS JOIN table_B;
```

Self Join

- A self join ia s join which a table is joined with itself (Unary relationships), specially when the table has a FOREIGN KEY which references its own PRIMARY KEY.

To join a table itself means that each row of the table is combained with itself and with every other row of the table.

The self join can be viewed as a join of two copies of the same table.

Example :-

SELF JOIN

```
SELECT*
FROM table_A  X,        table_A  Y
WHERE    X.A=Y.A;
```

Example :-

INNER JOIN

```
SELECT * FROM table_A
INNER JOIN table_B
ON table_A.A=table_B.A;
```

Left Join or Left Outer Join

- The SQL LEFT JOIN, join two tables and fetched rows based on a condition,which are matching in both the tables.

  The unmatched rows will also be available from the table before the JOIN clause.

Example :-

LEFT JOIN or LEFT OUTER JOIN

```
SELECT * FROM table_A
LEFT JOIN table_B
ON table_A.A=table_B.A;
```

Right Join or Right outer Join

- The SQL RIGHT JOIN, joins two tables and fetches rows based on a condition, which are matching in both the tables.
- The unmatched rows will also be available from the tables written after the JOIN clause.

Example :-

RIGHT JOIN or RIGHT OUTER JOIN

```
SELECT * FROM table_A
 RIGHT JOIN table_B
ON table_A.A=table_B.A;
```

Full Outer Join

- In SQL the FULL OUTER JOIN combines the results of both left and right outer joins and return all (matched or unmatched) rows from the tables on both sides of the join clause.

Example :-

FULL OUTER JOIN

```
SELECT * FROM  table_A
 FULL OUTER JOIN table_B
 ON table_A.A=table_B.A;
```

Natural Join

- The SQL NATURAL JOIN is a type of EQUI JOIN and is structured in a such a way that,columns with same name of associate tables will appear once only.
- The associated tables have one or more pairs of identically named columns.
- The columns must be the same data type.
- Don’t use ON clause in a natural join.

Example :-

NATURAL JOIN

```
SELECT *
FROM table_A
NATURAL JOIN table_B;
```

Cross Join

- The SQL CROSS JOIN product a result set which is the number of rows in the first table multiplied by the number of rows in the second table,if no WHERE clause is used along with CROSS JOIN.
- The kind of result is called as Cartesian Product.
- If ,WHERE clause is used with CROSS JOIN ,it functions like an INNER JOIN.

Example:-

CROSS JOIN

```
SELECT *
FROM table_A
CROSS JOIN table_B;
```

Self Join

- A self join is a join in which a table is joined with itself (Unary relationships),specially when the table has a FOREIGN KEY which references its own PRIMARY KEY.
- To join a table itself means that each row of the table is combined with itself and with every other row of the table.
- The self join can be viewed as a join of two copies of the same table.

Example :-

SELF JOIN

```
SELECT *
FROM  table_A  X ,   table_A Y
WHERE    X.A=Y.A;
```