**What is SQL Join?**

❖ JOIN clause combines rows from two or more tables.  
❖ creates a set of rows in a temporary table.

List of SQL JOINS

* 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 is 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 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 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 results of both left and right outer joins.  
Returns all matched or unmatched rows.  
Includes 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 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 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 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;

Example : INNER JOIN

SLECT \* 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 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 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**

In SQL the FULL OUTER JOIN combines the results of both left and right outer joins and returns 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 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

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FROM table\_A

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This 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;