**JOIN OPERATIONS:**

As the name shows, JOIN means *to combine something*. In case of SQL, JOIN means "to combine two or more tables".

The SQL JOIN clause takes records from two or more tables in a database and combines it together.

ANSI standard SQL defines five types of JOIN :

1. inner join,
2. left outer join,
3. right outer join,
4. full outer join, and
5. cross join.

**Why SQL JOIN is used?**

If you want to access more than one table through a select statement.

If you want to combine two or more table then SQL JOIN statement is used .it combines rows of that tables in one table and one can retrieve the information by a SELECT statement.

The joining of two or more tables is based on common field between them.

SQL INNER JOIN also known as simple join is the most common type of join.

**SQL OUTER JOIN**

In the SQL outer JOIN all the content of the both tables are integrated together either they are matched or not.

If you take an example of employee table

**Outer join of two types:**

**1.Left outer join** (also known as left join): this join returns all the rows from left table combine with the matching rows of the right table. If you get no matching in the right table it returns NULL values.

**2.Right outer join** (also known as right join): this join returns all the rows from right table are combined with the matching rows of left table .If you get no column matching in the left table .it returns null value.

**SQL LEFT JOIN**

The SQL left join returns all the values from the left table and it also includes matching values from right table, if there are no matching join value it returns NULL.

**BASIC SYNTAX FOR LEFT JOIN:**

1. **SELECT** table1.column1, table2.column2....
2. **FROM** table1
3. LEFTJOIN table2
4. **ON** table1.column\_field = table2.column\_field;

**SQL RIGHT JOIN**

The SQL right join returns all the values from the rows of right table. It also includes the matched values from left table but if there is no matching in both tables, it returns NULL.

Basic syntax for right join:

SELECT table1.column1, table2.column2.....

FROM table1

RIGHT JOIN table2

ON table1.column\_field = table2.column\_field;

**SQL FULL JOIN**

The SQL full join is the result of combination of both left and right outer join and the join tables have all the records from both tables. It puts NULL on the place of matches not found.

SQL full outer join and SQL join are same. generally it is known as SQL FULL JOIN.

SQL full outer join:

What is SQL full outer join?

SQL full outer join is used to combine the result of both left and right outer join and returns all rows (don't care its matched or unmatched) from the both participating tables.

**Syntax for full outer join:**

1. **SELECT** \*
2. **FROM** table1
3. **FULL** OUTER JOIN table2
4. **ON** table1.column\_name = table2.column\_name;

**SQL Cross Join**

Join operation in SQL is used to combine multiple tables together into a single table.

If we use the cross join to combine two different tables, then we will get the Cartesian product of the sets of rows from the joined table. When each row of the first table is combined with each row from the second table, it is known as Cartesian join or cross join.

After performing the cross join operation, the total number of rows present in the final table will be equal to the product of the number of rows present in table 1 and the number of rows present in table 2.

For example:

If there are two records in table 1 and three records in table 2, then after performing cross join operation, we will get six records in the final table.

Let us take a look at the syntax of writing a query to perform the cross join operation in SQL.

**SELECT** TableName1.columnName1, TableName2.columnName2 **FROM** TableName1 CROSS JOIN TableName2 **ON** TableName1.ColumnName = TableName2.ColumnName;