SQL Server

Group By clause

The GROUP BY clause allows you to arrange the rows of a query in groups. The groups are determined by the columns that you specify in the GROUP BY clause.

Aggregate Functions

An aggregate function performs a calculation on a group and returns a unique value per group

For Example:

- COUNT() returns the number of rows in each group.
- SUM() returns the sum of all numeric rows in specific column
- AVG() returns the average of all numeric rows in specific column
- MIN() returns the minimum of all numeric rows in specific column
- MAX() returns the maximum of all numeric rows in specific column

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GROUPING SETS

A grouping set is a group of columns by which you group. Typically, a single query with an <u>aggregate</u> defines a single grouping set.

CUBE

CUBE is a subclause of the <u>GROUP BY</u> clause that allows you to generate multiple grouping sets.

ROLL UP

ROLLUP is a subclause of the <u>GROUP BY</u> clause which provides a shorthand for defining multiple <u>grouping sets</u>. The ROLLUP is often used to generate subtotals and totals for reporting purposes.

Unlike the <u>CUBE</u> subclause, ROLLUP does not create all possible grouping sets based on the dimension columns; the CUBE makes a subset of those. When generating the grouping sets, ROLLUP assumes a hierarchy among the dimension columns and only generates grouping sets based on this hierarchy.
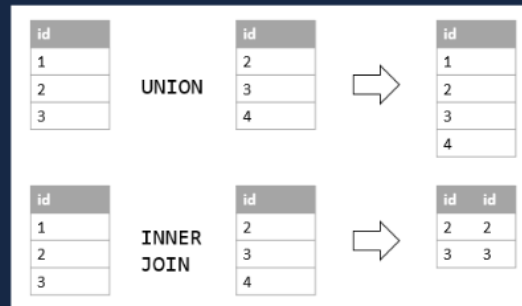
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UNION

UNION is one of the set operations that allow you to combine results of two SELECT statements into a single result set which includes all the rows that belong to the SELECT statements in the union.

UNION vs. JOIN
The join such as <u>INNER JOIN</u> or <u>LEFT JOIN</u> combines columns from two tables while the UNION combines rows from two queries.
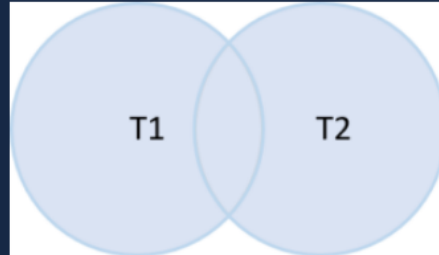

INTERSECT

INTERSECT combines result sets of two or more queries and returns distinct rows that are output by both queries.
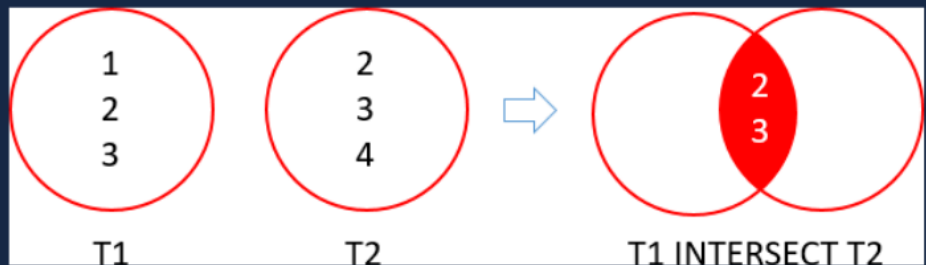
EXCEPT

EXCEPT compares the result sets of two queries and returns the <u>distinct</u> rows from the first query that are not output by the second query. In other words, the EXCEPT subtracts the result set of a query from another.

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UNION

INTERSECT

T1	T2	T1 INTERSECT T2
1 2 3	2 3 4	2 3

EXCEPT

T1	T2	T1 EXCEPT T2
1 2 3	2 3 4	1 2 3 4