# **COMPUTED COLUMNS OR CALCULATED COLUMNS IN SQL:**

• A computed column is a virtual column that isn't physically stored in the table, unless the column is marked PERSISTED.

• A computed column expression can use data from other columns to calculate a value for the column to which it belongs.

• Computed columns are the columns in which we performed calculations with the help of other columns of table.

• In SQL Server we have an option to create computed columns or calculated columns in a table other than normal columns. Normal column means that their values are stored physically in the table.

• A computed column can also be the expression.

• A computed column is nothing but an expression, which can be a:

* NON-Computed column.
* Constant.
* Function.
* Any combination using operators.

• If we UPDATE that column in which we derived a computed column then value of computed column automatically updated whether it is persisted computed column or non-persisted computed column.

• Computed columns can be used in SELECT, WHERE clause, ORDER BY clause etc.

• We can’t INSERT and UPDATE the values of computed columns.

• We can ADD computed columns in existing table by using ALTER command.

• We can DROP computed columns from existing table by using ALTER command.

• We can’t create another computed column from one computed column.

• There are two types of computed columns:

1. **Persisted**
2. **Non-Persisted.**

**Differences between Persisted and Non-Persisted Columns:**

* **Persisted Computed Columns:**

• Persisted Columns are calculated as soon as data is stored in the table, because its value stored physically in a table.

• Persisted columns consume space for the data.

• When we select data from these columns persisted columns are faster than non-persisted columns.

• We have to use “PERSISTED” keyword after persisted computed columns.

* **Non -** **Persisted Computed Columns:**

• Non – Persisted Columns are calculated when the SELECT query is executed, because its value is not stored physically in a table.

• Non – Persisted Columns do not consume any space as they are calculated only when we select the column.

• When we select data from these columns non-persisted columns are slower than persisted columns.

• If there is no “PERSISTED” keyword after computed columns then it would be a non-persisted column.

# **CREATING INDEX ON COMPUTED COLUMN IN SQL:**

• An index can be created on a computed column if the column is marked **PERSISTED**.

• This ensures that the Database Engine stores computed values in the table.

• These values are updated when any other columns on which the computed columns depend are updated.

• The database engine uses this persisted value when it creates an index on column.

• An index is created on a computed column using the **CREATE INDEX** statement.