

What are Aggregate Functions?

1. Aggregate functions are built in sql server functions.
2. Aggregate functions are applied to sets of records rather than to a single record.
3. Aggregate functions performs a computation on a set of values rather than on a single value.
4. Aggregate functions uses to summarize data.
5. Aggregate functions perform a calculation on a set of values and return a single value.

AVG

AVG returns the average of the values in *expression*. The *expression* must contain numeric values. Null values are ignored.

```
Select MaritalStatus, AVG(YearlyIncome) from Dimcustomer Group By MaritalStatus
```

COUNT

Returns the number of items in *expression*. The data type returned is of type *int*.

```
Select MaritalStatus, Count(*) from Dimcustomer Group By MaritalStatus
```

MAX

Returns the maximum value from *expression*. Max ignores any *NULL* values.

```
Select MaritalStatus, MAX(YearlyIncome) from Dimcustomer Group By MaritalStatus
```

Min: Returns the smallest value from *expression*. Min ignores any *NULL* values.

```
Select MaritalStatus, Min(YearlyIncome) from Dimcustomer Group By MaritalStatus
```

SUM: Returns the total of all values in *expression*. Sum ignores any *NULL* values.

```
Select MaritalStatus, Sum(YearlyIncome) from Dimcustomer Group By MaritalStatus
```

Having Clause in SQL Server:

The Having clause can be used only with a Select statement. If you use the Having clause with an update or delete query in SQL, it will not work.

Difference between Having and Where Clause.

WHERE

- We can use the *WHERE* clause with *SELECT*, *INSERT*, *UPDATE*, and *DELETE* clauses. For Example, it works fine for "*Update Mas_Employee Set Salary = 1500 WHERE Id =1*".
- *WHERE* clause is used for filtering rows and it applies on each and every row.
- *WHERE* clause is used before *GROUP BY* clause.
- We can't use aggregate functions in the where clause unless it is in a subquery contained in a *HAVING* clause.

HAVING

- *HAVING* clause can only be used with *SELECT* query. This means if you want to perform the *INSERT*, *UPDATE* and *DELETE* clause it will return an error. For Example "*Update Mas_Employee Set Salary = 1500 Having Id =1*" Query will be generated error like "Incorrect syntax near the keyword 'HAVING' ".
- *HAVING* clause is used to filter groups in SQL.
- *HAVING* clause is used after *GROUP BY* clause.
- We can use an aggregate function in the *HAVING* clause.