

Aggregation Functions:

Helpful link:

<https://www.geeksforgeeks.org/aggregate-functions-in-sql/>

Syntax of Global Aggregate Queries

```
SELECT <unaggregated fields>,<aggregate functions>
FROM <single table>
[optional]JOIN <single table> ON <join condition>
[optional]WHERE <boolean condition>
GROUP BY <unaggregated fields>
[optional]HAVING <boolean condition>
[optional]ORDER BY <fields to sort on>
```

Count(column_name) vs Count(*) vs Count(1) vs Count(Distinct column_name)

1. COUNT(column_name): Counts rows with *non null* value for given column.
2. COUNT(DISTINCT column_name): Counts rows with *Non-null* and *Distinct* values.
3. COUNT(1): Will count all the rows since the expression "1" evaluates to non-null for every row.
4. COUNT(*) : * is a special expression that is not evaluated, it simply returns the number of rows. Null and non-null.

WHERE vs HAVING

1. WHERE clause can be used without HAVING or GROUP BY.
2. HAVING can only be used if grouping has been performed using GROUP BY clause in the SQL query.
3. WHERE clause cannot contain aggregate functions like COUNT(), SUM(), MAX(), MIN(), etc.
4. HAVING clause may contain aggregate functions.

Database Views

1. Defined by CREATE VIEW statement
2. Return a table of results from a SQL query
3. Saved in the database as named query

*If you are interested in view as virtual table, here is a helpful link:

<https://www.geeksforgeeks.org/differences-between-views-and-materialized-views-in-sql/>