SQL: Structured Query Language
Aggregate Operations

Aggregate Operations

Aggregate database operations are operations that return individual values (*aggregates*) instead of tuples. These aggregates can be used in the SELECT clause of the SELECT statement.

There are five aggregate operations in SQL:

Aggregate Operation	Explanation
`COUNT()`	returns the number of rows
`AVG()`	returns the average value in the column
`MIN()`	returns the minimum value in the column
`MAX()`	returns the maximum value in the column
`SUM()`	returns the sum of the values in the column

AVG,SUM,MAX,MIN. For the `AVG`, `SUM`, `MAX` and `MIN` operations the syntax is

```
AVG(<ColumnName>)
SUM(<ColumnName>)
MAX(<ColumnName>)
MIN(<ColumnName>)
```

Here, `<ColumnName>` is expected be of a numeric type.

E.g.

```
SELECT AVG(Salary) FROM Employee;
```

returns the average of the `Salary` field in a relation `Employee(ID, Name, Salary, Dept)`.

COUNT. `COUNT` has more interesting syntax. The two traditional forms of the `COUNT()` operator are

```
COUNT(*)
COUNT([DISTINCT] <ColumnName>)
```

`COUNT(*)` form counts the number of tuples returned by the rest of the query.

```
SELECT COUNT(*) FROM Employee;
```

returns the number of employee records.

Similar result can be achieved by replacing * with an column name:

```
SELECT COUNT(Name) FROM Employee;
```

returns the same result as the previous query. `DISTINCT` qualifier allows us to count only unique values found in the column:

```
SELECT COUNT(DISTINCT Salary) FROM Employee;
```

returns the number of different salary levels recorded in the `Employee` table.