

# Aggregate Function

## Most Used Aggregate Functions

Aggregate function performs a calculation on multiple values and returns a single value. And Aggregate functions are often used with GROUP BY & SELECT statement.

COUNT() - returns number of values.

SUM() - returns sum of all values.

AVG() - returns average value.

MAX() - returns maximum value.

MIN() - return minimum value.

ROUND() - Rounds a number to a specified number of decimal places.

## Group By & Having Clause

### Group By Statement

The GROUP BY statement groups rows that have the same values into summary rows.

It is often used with aggregate functions (COUNT(), MAX(), MIN(), SUM(), AVG()) to group the result-set by one or more columns.

### Syntax

SELECT column-name

FROM table-name

GROUP BY column-name(S);



### Example

```
SELECT mode, SUM(amount) AS total  
FROM payment  
GROUP BY mode
```

### HAVING Clause

The 'HAVING' clause is used to apply a filter on the result of GROUP BY based on the specified condition.

The 'WHERE' clause places conditions on the selected columns, whereas the 'HAVING' clause places conditions on groups created by the 'GROUP BY' clause.

### Syntax:

```
SELECT column-name  
FROM table-name  
WHERE condition  
GROUP BY column-name  
HAVING condition
```

### Example

```
SELECT mode, COUNT(amount) AS total  
FROM payment  
GROUP BY mode  
HAVING COUNT(amount) >= 3  
ORDER BY total DESC
```

### Timestamp & Extract

#### TIMESTAMP

The 'TIMESTAMP' data type is used for values that contain both data and time parts.

TIME - contains only time, format HH:MM:SS

DATE - contains on data, format YYYY-MM-DD

YEAR - contains on year, format YYYY or YY

TIMESTAMP - contains date and time, format YYYY-MM-DD HH:MM:SS

TIMESTAMPZ - contains date, time and time zone

## TIMESTAMP Functions / Operators

Below are the TIMESTAMP functions and operators in SQL:

SHOW TIMEZONE

SELECT NOW()

SELECT TIME OF DAY()

SELECT CURRENT-TIME

SELECT CURRENT-DATE

### EXTRACT Function

The EXTRACT() function extracts a part from a given date value.

Syntax: SELECT EXTRACT (MONTH FROM date-field)  
FROM Table.

- ⊙ YEAR ⊙ QUARTER ⊙ MONTH ⊙ WEEK ⊙ DAY
- ⊙ HOUR ⊙ MINUTE ⊙ DOW - day of week
- ⊙ DOY - day of year.