

## **AGGREGATE FUNCTIONS AND DISTINCT CLAUSE (SQL)**

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**Aggregate functions:** - In DBMS aggregate functions are those functions which takes values from various rows as an input and produce single value based on some criteria.

Various aggregate functions in SQL: -

- **Max()**
- **Min()**
- **Sum()**
- **Count()**
- **Avg()**

Lets understand the concept of these functions with example.

Consider a table STUDENT

ROLL_NO	NAME	BRANCH	CITY	MARKS
101	AJAY	CS	LUCKNOW	60
102	AMIT	CS	KANPUR	70
103	ANIL	ME	LUCKNOW	80
104	VINOD	EE	VARANASI	90
105	VIMAL	EE	LUCKNOW	85
106	VIKAS	EC	KANPUR	null

Here ROLL\_NO is a primary key.

- **Max()**

Now to find maximum marks from table student MAX(MARKS) will be used which will return 90 as a maximum mark.

**select max(MARKS) from STUDENT;**

Means the above select statement will return the largest value from specified column (largest value from MARKS) i.e. 90.

- **Min()**

Now to find minimum marks from table student Min(MARKS) will be used.

**select min(MARKS) from STUDENT;**

Means the above select statement will return the minimum value from specified column (**except null**) i.e. 60.

- **Sum()**

It will return sum of all **non null** value from specified column.

Ex. **select sum(MARKS) from STUDENT;**

The above statement will return sum of valued from column MARKS (i.e. 385)

- **Count()**

Count(\*) It will return the total number of records (rows) from a table.

**Select count(\*) from STUDENT;**

It will return 6 for the above table.

**Select count(MARKS) from STUDENT;**

It will return number of non null values from the specified column i.e MARKS.

For above select statement it will return 5.

- **Avg()**

It will return the average of values from specified column except null.

Ex.  $\text{avg(MARKS)} = \text{sum(MARKS)} / \text{count(MARKS)}$

Select avg(marks) from STUDENT;

## **DISTINCT CLAUSE:**

It is used with select statement to avoid duplicate values from specified columns.

It will return only unique valued from a specified column.

Syntax:- **select distinct column\_name1, column\_name2,... from table\_name;**

For table:- STUDENT

ROLL_NO	NAME	BRANCH	CITY	MARKS
101	AJAY	CS	LUCKNOW	60
102	AMIT	CS	KANPUR	70
103	ANIL	ME	LUCKNOW	80
104	VINOD	EE	VARANASI	90
105	VIMAL	EE	LUCKNOW	85
106	VIKAS	EC	KANPUR	null

Ex. **select distinct CITY from STUDENT;**

It will return

CITY
LUCKNOW
KANPUR
VARANASI

References:

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