

11. MAX, MIN, AVG, COUNT, SUM

In this article, we are going to learn how to get the **SQL summary** of data in each column using MAX, MIN, AVG, COUNT, and SUM functions. Examples are supported for both **SQL Server** & **MySQL**.

- MAX/MIN function returns the maximum/minimum of a column.
- AVG function returns the column average.
- COUNT function returns the number of rows of a column.
- SUM function returns the sum of all the rows of a column.

Consider the Students table for our examples. Marks taken by each student for each subject are stored in the table.

Students Table:

Id	Science	Maths	Commerce	Languages
1	70	80	60	90
2	90	100	70	90
3	80	80	80	80
4	NULL	NULL	NULL	NULL
5	60	70	80	60
6	90	90	100	90
7	40	30	NULL	50
8	NULL	60	50	40
9	70	60	60	70
10	95	80	70	60

Table 1. Sample Data for Students

Run the below script to insert sample data.

Sample Data Script:

```
CREATE TABLE Students(  
    Id INT PRIMARY KEY,  
    Science INT NULL,  
    Maths INT NULL,
```

```

Commerce INT NULL,
Languages INT NULL
);

INSERT Students(Id, Science, Maths, Commerce, Languages)
VALUES (1, 70, 80, 60, 90), (2, 90, 100, 70, 90), (3, 80, 80, 80, 80)
, (4, NULL, NULL, NULL, NULL), (5, 60, 70, 80, 60), (6, 90, 90, 100, 90)
, (7, 40, 30, NULL, 50), (8, NULL, 60, 50, 40), (9, 70, 60, 60, 70)
, (10, 95, 80, 70, 60);

```

Script 1. Sample Data Script

Summarize Data for a Column.

Using MAX, MIN, AVG, COUNT and SUM functions we can create a query to get the summary of a column.

Example 1. SQL Summary of Marks for Science

Run the below SQL summary query to get the summary of marks for Science.

SQL Script:

```

SELECT 'Science' AS Subject, MAX(Science) AS Maximum, MIN(Science) AS
Minimum, ROUND(AVG(Science), 0) AS Average, COUNT(Science) AS Students,
SUM(Science) AS Sum
FROM Students

```

Script 2. Science Summary

Summarized data for Science are shown in the below table.

Subject	Maximum	Minimum	Average	Students	Total
Science	95	40	74	8	595

Table 2. Science Summary

Summarize Data for each Column in SQL

Using the UNION command we can create a query to get the **SQL summary** of each column.

Example 2. Summarize Data for Subjects

Run the below **SQL summary query** to get the summary of marks for each subject.

SQL Script:

```
SELECT 'Science' AS Subject, MAX(Science) AS Maximum, MIN(Science) AS Minimum, ROUND(AVG(Science), 0) AS Average, COUNT(Science) AS Students, SUM(Science) AS Sum
FROM Students

UNION

SELECT 'Maths' AS Subject, MAX(Maths) AS Maximum, MIN(Maths) AS Minimum, ROUND(AVG(Maths), 0) AS Average, COUNT(Maths) AS Students, SUM(Maths) AS Sum
FROM Students

UNION

SELECT 'Commerce' AS Subject, MAX(Commerce) AS Maximum, MIN(Commerce) AS Minimum, ROUND(AVG(Commerce), 0) AS Average, COUNT(Commerce) AS Students, SUM(Commerce) AS Sum
FROM Students

UNION

SELECT 'Languages' AS Subject, MAX(Languages) AS Maximum, MIN(Languages) AS Minimum, ROUND(AVG(Languages), 0) AS Average, COUNT(Languages) AS Students, SUM(Languages) AS Total
FROM Students
ORDER BY Subject;
```

Script 3. Subject Summary

The below table shows the result for the **SQL summary query** of marks for each subject.

Subject	Maximum	Minimum	Average	Students	Total
Commerce	100	50	71	8	570
Languages	90	40	70	9	630
Maths	100	30	72	9	650
Science	95	40	74	8	595

Table 3. Subject Summary