# 15. UNION and UNION ALL

## Union in SQL

## Example 1

**Script:**

```sql
SELECT 1 UNION SELECT 2 UNION SELECT 3;
```

**Result:**

| | (No column name) |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |

## Example 2

**Script:**

```sql
SELECT 1 UNION SELECT 2 UNION SELECT 1;
```

**Result:**

| | (No column name) |
|---|---|
| 1 | 1 |
| 2 | 2 |

## Union All in SQL

## Example 1

**Script:**

```sql
SELECT 1 UNION ALL SELECT 2 UNION ALL SELECT 3;
```

**Result:**

| | (No column name) |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |

## Example 2

**Script:**

```
SELECT 1 UNION ALL SELECT 2 UNION ALL SELECT 1;
```

**Result:**

| | (No column name) |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 1 |

# Summarize Data for Each Column in SQL

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:**

```sql
CREATE TABLE Students(
    Id INT NOT NULL,
    Science INT NULL,
    Maths INT NULL,
    Commerce INT NULL,
    Languages INT NULL,
    PRIMARY KEY (Id)
);

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

```
60, 50, 40);
INSERT Students(Id, Science, Maths, Commerce, Languages) VALUES (9, 70, 60,
60, 70);
INSERT Students(Id, Science, Maths, Commerce, Languages) VALUES (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

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

**SQL Script:**

```sql
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**