# SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING(IoT and Cybersecurity Including BCT)

COURSE NAME : 19SB504 DATABASE MANAGEMENT SYSTEMS

III YEAR / V SEMESTER

Unit II- **SQL**

Topic :IN operator, Functions - aggregate functions

# IN Operator

The IN operator allows you to **specify multiple values in a WHERE** clause.
IN operator allows you to easily test if the expression matches any value in the list of values.

It is used to remove the need for multiple OR conditions in SELECT, INSERT, UPDATE, or DELETE.

The IN operator is a shorthand for multiple OR conditions.

IN Syntax
SELECT *column_name(s)*
FROM *table_name*
WHERE *column_name* IN (*value1*, *value2*, ...);

# BETWEEN Operator

The BETWEEN operator selects values within a given range. The values can be numbers, text, or dates.

The BETWEEN operator is inclusive: begin and end values are included.

**BETWEEN Syntax**

SELECT *column_name(s)*
FROM *table_name*
WHERE *column_name* BETWEEN *value1* AND *value2;*

***Example***

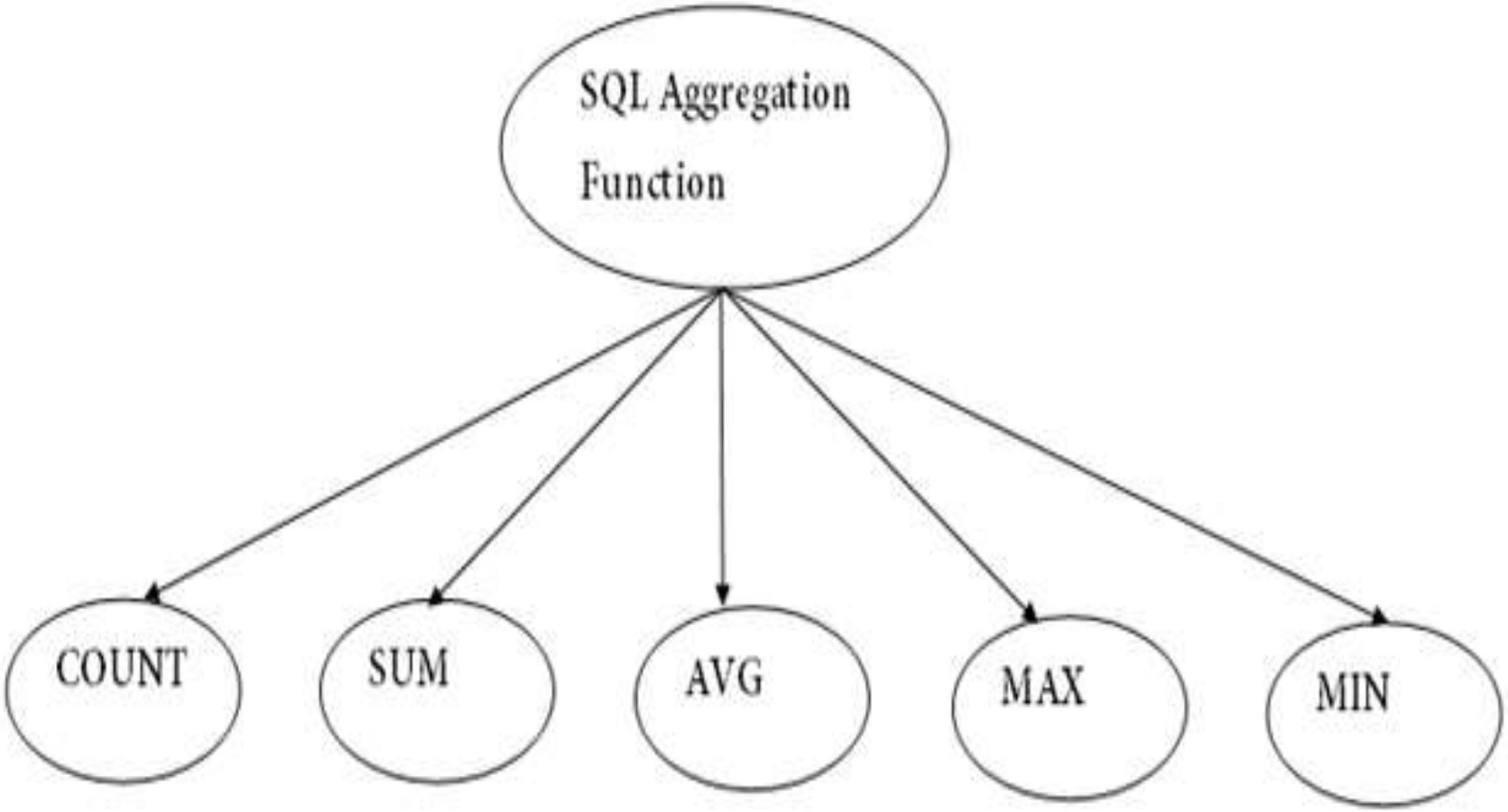
SELECT * FROM Products
WHERE Price BETWEEN 10 AND 20;

# Aggregate Functions

•SQL aggregation function is used to perform the calculations on multiple rows of a single column of a table. It returns a single value.

•It is also used to summarize the data.

•Types of SQL Aggregation Function


SQL Aggregation
Function
COUNT
SUM
AVG
MAX
MIN

# 1. COUNT FUNCTION

•COUNT function is used to Count the number of rows in a database table. It can work on both numeric and non-numeric data types.

•COUNT function uses the COUNT(*) that returns the count of all the rows in a specified table. COUNT(*) considers duplicate and Null.

**Syntax**

1.COUNT(*)

2.or

3.COUNT( [ALL|DISTINCT] expression )

Sample table:

PRODUCT_MAST

| PRODUCT | COMPANY | QTY | RATE | COST |
|---|---|---|---|---|
| Item1 | Com1 | 2 | 10 | 20 |
| Item2 | Com2 | 3 | 25 | 75 |
| Item3 | Com1 | 2 | 30 | 60 |
| Item4 | Com3 | 5 | 10 | 50 |

Example: COUNT()

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

## 2. SUM Function

Sum function is used to calculate the sum of all selected columns. It works on numeric fields only.

**Syntax**

SUM()
or
SUM( [ALL|DISTINCT] expression )

Example: SUM()

```
SELECT SUM(COST)
FROM PRODUCT_MAST;
```

Example: SUM() with WHERE

```
SELECT SUM(COST)
FROM PRODUCT_MAST
WHERE QTY>3;
```

## 3. AVG function

The AVG function is used to calculate the average value of the numeric type. AVG function returns the average of all non-Null values.

**Syntax**

1.AVG()
or
1.AVG( [ALL|DISTINCT] expression )

**Example:**

```
SELECT AVG(COST)
FROM PRODUCT_MAST;
```

## 4. MAX Function

MAX function is used to find the maximum value of a certain column. This function determines the largest value of all selected values of a column.

**Syntax**

1.MAX()
2.or
3.MAX( [ALL|DISTINCT] expression )

**Example:**

1.SELECT MAX(RATE)
2.FROM PRODUCT_MAST;

## 5. MIN Function

MIN function is used to find the minimum value of a certain column. This function determines the smallest value of all selected values of a column.

**Syntax**

1.MIN()
2.or
3.MIN( [ALL|DISTINCT] expression )

**Example:**

1.SELECT MIN(RATE)
2.FROM PRODUCT_MAST;

Any Query????

Thank you……