⊡ Functions:

- UPPER → convert to uppercase. UPPER(abc) = ABC

- LOWER → convert to lowercase. LOWER(ABC) = abc

- ABS → Absolute value function. ABS(-5) = 5

- DEGREES → convert radian to degree.

- RADIANS → convert degree to radian.

- COS → * Take input in Radian
        * COS(RADIANS( )) =

- ACOS → * $\cos^{-1}(\ )$ = output will be in radian

- SIN →

- ASIN →

- TAN →

- ATAN →

- CEIL → returns the smallest integer greater than or equal the given number.
        CEIL(4.8) = 5

- FLOOR → returns the largest integer less than or equal the given number.
        FLOOR(4.3) = 4

- DIV → perform Integer Division like the operator '/'.
        SELECT 10 DIV 3

- EXP → returns e raised to the power of a specified number.

$$\text{SELECT EXP}(-3) \rightarrow e^{-3}$$

- POWER → Returns the value of a number raised to the power of another number.

$$\text{SELECT POWER}(2,3); \rightarrow 2^3 = 8$$

- SQRT → Returns the square root of a number.

$$\text{SELECT SQRT}(16); \rightarrow \sqrt{16} = 4$$

- GREATEST → Returns the greatest value from a list.

$$\text{SELECT GREATEST}(1,2,3,7,6,8); = 8$$

- LEAST → returns the smallest value from a list.

$$\text{SELECT LEAST}(2,5,1,8); = 1$$

- LN → Returns the natural logarithm of a number.

  ★ $LN = \log_e$

- LOG → Same as LN

- LOG10 → Returns the base-10 logarithm of a number.

- LOG2 → Returns the base-2 logarithm of a number.

- MOD → Returns the remainder of the division.

$$\text{MOD}(10,3) = 1$$

- PI → Returns the value of PI.

$$PI() = 3.14159\cdots$$

- RAND $\longrightarrow$ Returns a random floating point value between 0 and 1

- ROUND $\longrightarrow$ Rounds a number to a specified number of decimal place.

$$ROUND(4.567,2) = 4.57$$

- TRUNCATE $\longrightarrow$ Truncates a number to a specified number of decimal places.

$$TRUNCATE(4.678,2) \longrightarrow 4.67$$

Group Function:

- **COUNT** ⟶ Returns the number of rows that matches a specific criterion.

    SELECT COUNT(*) FROM Student; ⟶ returns the number of rows in Student table.

- **SUM** ⟶ Returns the total sum of a numeric column.

    SUM(Salary); ⟶ returns the total of salary column of a table.

- **AVG** ⟶ Returns the average value of a numeric column.

    AVG(Salary);

- **MIN** ⟶ Returns the smallest value in a column.

- **MAX** ⟶ Returns the largest value in a column.

- **GROUP BY** ⟶ • To perform calculation on groups of data based on a field.

This will count employees in each department.

```
SELECT DepartmentID, COUNT(*) AS EmployeeCount
FROM Employees
GROUP BY DepartmentID;
```

- **HAVING** ⟶ used to filter groups based on a condition.

  * WHERE ⟶ Used to filter rows only, not works in case of groups.

```
SELECT DepartmentID, COUNT(*) AS EmployeeCount
FROM Employees
WHERE DepartmentID != 60
GROUP BY DepartmentID
HAVING COUNT(*) / EmployeeCount > 5;
```