**MySQL Group Functions**

* Aggregate Functions/ Group Function : COUNT( ) , SUM( ) , AVG( ) , MIN( ) , MAX( ) ,

GROUP\_CONCAT() ,

* Mathematical Functions ROUND ( ) , POW()/POWER( ) , ABS( ) , CEIL( )/CEILING( ) ,

FLOOR() , SQRT( ) , MOD( ) , GREATEST( ) , LEAST( ) , RAND( )

LN( ) , LOG( ) , PI( ) , EXP() ,

RADIANS( ) , DEGREES( ) , SIN( ) , COS( ) , TAN( ) , ASIN( ), ACOS( ) , ATAN( ) ,

* String Functions : UPPERLOWER( ) , LOWER ( ) , LENGTH( ) , CHAR\_LENGTH( ) , CONCAT( ) ,

CONCAT\_WS( ) , TRIM( ) , LTRIM( ) , RTRIM( ) , SUB STR( ) , REPEAT( ) , REVERSE( ) , , FIND\_IN\_SET( ) , ELT( ) , , ASCII( ) ,

LEFT( ) , RIGHT( ) , INSTR( ) , LOCATE( ) , SPACE( ) , STRCMP( ) , CHAR( ) , LPAD( ) , RPAD( ) , FORMAT( ) ,

FIELD( ) , SUB STR\_INDEX( ) , QUOTES( ) , CONVERT( ) ,

* Date and Time Functions : CURRENT\_TIME( ) , NOW( ) , DATE( ) , TIME( ) , DATEDIFF( ) ,

DATE\_ADD( ) , DATE\_SUB( ) , YEAR( ) , MONTH( ) , DAY( ) , STR\_TO\_DATE( ) ,

* Control Flow Functions
* Encryption ad Compression Functions
* JSON Functions
* Geospatial (GIS) Functions
* Bitwise Functions
* Cast/Convert Functions
* Full-Text Search Functions
* Utility Functions
* XML Functions
* User Defined Functions

**Aggregate Functions:**

**COUNT**() : Returns the number of rows that match a specified criterion.

**SELECT** **COUNT**(employee\_id) **AS** total

**FROM** employees;

**SELECT** **COUNT**(\*) **AS** total **FROM** employees;

“ \* ” দিয়ে row কয়টা তা গননা করে জানাবে।

**SUM**() : Returns the total sum of a numeric column.

**SELECT** **SUM**(Salary) **AS** total\_salary

**FROM** employees;

**AVG()** : Returns the average value of a numeric column.

**SELECT** **AVG**(salary) **AS** avarage\_salary

**FROM** employees

**AVG()**: Returns the minimum value in a set of values.

**SELECT** **MIN**(salary) **AS** lowest\_salary

**FROM** employees;

**MAX()** : Returns the maximum value in a set of values.

**SELECT** **MAX**(salary) **AS** higest\_salary

**FROM** employees;

**GROUP\_CONCAT()** : একই সেলারি পাওয়া ব্যক্তিদের একত্রে করে গ্রপ আকারে output ; 400 (jon,david,dos)

**SELECT** salary, **GROUP**\_**CONCAT**(first\_name) **AS** workers

**FROM** employees

**GROUP** **BY** salary;

**String Functions**

**UPPER** (str ): Converts a str to uppercase. **SELECT** **UPPER**('hello') → HELLO

**LOWER** (str): Converts a str to lowercase. **SELECT LOWER**('HELLO') → hello

**LENGTH** (str): Returns the length of the str. **SELECT** **LENGTH**('hello') → 5

**CHAR\_LENGTH** (str): Returns the number of char. **SELECT** **CHAR**\_**LENGTH**('hello') → 5

**CONCAT** ( str1, str2, ...): Concatenates multiple str. **SELECT** **CONCAT**('Hello', ' ', 'World') → Hello World

**CONCAT\_WS** (separator,str1, str2, ...): Concatenates multiple strings using a separator.

* **SELECT** **CONCAT\_WS**('-', '2024', '10', '03') → 2024-10-03

**TRIM** (both | leading | trailing str): Removes leading and/or trailing spaces from a str.

* **SELECT** **TRIM**(' hello ') → hello

**LTRIM (str)**: Removes leading spaces from a str. **SELECT** **LTRIM**(' hello') → hello

**RTRIM** (str): Removes trailing spaces from a str. **SELECT** **RTRIM**('hello ') → hello

**SUB STR** (str, start, length): **SELECT** **SUB** **STR**('Hello World', 7, 5) → World

**LEFT** (str, length): Returns the left part of the str . **SELECT** **LEFT**('Hello World', 5) → Hello

**RIGHT** (str, length): Returns the right part of the str. **SELECT** **RIGHT**('Hello World', 5) → World

**REPEAT (str, count)**: Repeats specified num of times. **SELECT** **REPEAT**('Hi', 3) → HiHiHi

**REPLACE (str, from\_ str, to\_ str)**: Replaces occurrences of a sub str within a str.

* **SELECT** **REPLACE**('Hello World', 'World', 'MySQL') → Hello MySQL

**INSTR (str, sub str)**: Returns the position of the first occurrence of a sub str.

* **SELECT INSTR**('hello\_word','ord');→ 8

**LOCATE (sub str, str)**: Returns the position of the first occurrence of a sub str (similar to INSTR).

* **SELECT** **LOCATE**('World', 'Hello World') → 7

**REVERSE (str)**: Reverses the str. **SELECT** **REVERSE**('Hello') → olleH

**SPACE (count)**: Returns a str consisting of count spaces.

* **SELECT SPACE**(5) → (5 spaces)
* **SELECT CONCAT\_WS**(**SPACE**(3**)**,'A','B','C','D');→ (A B C D)

**STRCMP (**str1**,** str2): Compares two strs and returns 0 if they are the same, -1 if the first is smaller, and 1 if the first is larger.

* **SELECT STRCMP** ('abc', 'def') → -1

**ASCII (str)**: Returns the ASCII value of the first char of the str. **SELECT ASCII**('A') → 65

**CHAR** (code1, code2, ...): Converts ASCII codes to char. **SELECT CHAR**(65, 66, 67) → ABC

**LPAD (**str**,** length, pad\_ str): Pads the str on the left to a certain length.

* **SELECT** **LPAD**('abc', 5, '\*') → \*\*abc

**RPAD** (str, length, pad\_ str): Pads the str on the right to a certain length.

* **SELECT RPAD**('abc', 5, '\*') → abc\*\*

**FORMAT** (number, decimal\_places): Formats a number as a str with a specified number of decimal places.

* **SELECT FORMAT**(123456.789, 2) → 123,456.79

**FIND\_IN\_SET** ( str, str\_list): Returns the position of the str in a comma-separated list.

* **SELECT** **FIND\_IN\_SET**('b', 'a,b,c') → 2

**ELT** (N, str1, str2, ...): Returns the Nth str in a list of strs.

* **SELECT** ELT(2, 'a', 'b', 'c') → b

**FIELD** (str, str1, str2, ...): Returns the index (position) of a str in a list of strs.

* **SELECT** FIELD('b', 'a', 'b', 'c') → 2

**SUB STR\_INDEX** (str, delimiter, count): Returns a sub str from a str before a specified number of delimiter occurrences.

* **SELECT** SUB STR\_INDEX('a,b,c,d', ' , ' , 2) → a,b

**QUOTES** (str): Adds quotation marks to a str. **SELECT** QUOTES('abc') → 'abc'

**CONVERT** (str USING charset): Converts a str to a different character set.

* **SELECT** CONVERT('hello' USING utf8).

**Date and Time Functions**

**SELECT** **CURDATE** () **AS** cur; -- -> 2024-10-03 --

**SELECT** **CURRENT**\_**TIME** () **AS** cur ; -- -> 17:19:10 --

**SELECT** **NOW** () **AS** cur ; -- -> 2024-10-03 17:19:45 --

**SELECT** **DATE** (**NOW** ()) **AS** today\_date; -- -> 2024-10-03 --

**SELECT** **TIME** (**NOW** ()) **AS** today\_time; -- -> 17:21:15 --

**SELECT** **DATEDIFF** (**CURDATE** (), '2023-12-04') **AS** different;

**SELECT** **DATA**\_**ADD** ('2024-10-03', 7 **DAY**) **AS** new\_date;

**SELECT** **YEAR** (**NOW** ()) AS cur;

**SELECT** **MONTH** (**NOW** ()) AS cur;

**SELECT** **DAY** (**NOW** ()) AS cur;

**SELECT** **STR**\_**TO**\_**DATE** ('03-10-2024','%d-%m-%Y') **AS** formated\_date;