SQL Functions

Simple, Aggregate and Group

Simple functions

- Alias field names
- CONCAT
- LENGTH
- RIGHT/LEFT
- REPLACE
- SUBSTRING
- Using math +, -, *, /
- RAND
- NOW

Alias field names

To use a more descriptive field name in our result set.

SELECT `column_name|value|expression` [AS] `alias_name`;

CONCAT

CONCAT(field1, field2, 'some text')

The Concat () MySQL function is used join the columns values together.

SELECT CONCAT(city, ' ', state) AS location FROM clients;

LENGTH

LENGTH(field)

Function that allows you to get the length of string

RIGHT/LEFT

RIGHT(field, int)

LEFT(field, int)

string function accepts the field as the parameter and only returns a number of characters from the right/left.

REPLACE

REPLACE() function allows to replace the old string to new string. The general syntax is

REPLACE(str,old_string,new_string)

SUBSTRING

The SUBSTRING function returns a substring from a string starting at a specific position with a given length. The general syntax is:

SUBSTR(field,position)

Using math +, -, *, /

SELECT (field + 1)*2 FROM table_name;

RAND()

RAND function that can be invoked to produce random numbers between 0 and 1

NOW()

NOW function will give you current date

Aggregate functions

An aggregate function performs a calculation on multiple values and returns a single value.

- COUNT
- SUM
- AVG
- MIN
- MAX

COUNT(field)

The COUNT function returns the total number of values in the specified field.

COUNT (*)

A special implementation of the COUNT function that returns the count of all the rows in a specified table.

COUNT DISTINCT

If we want to count distinct value in a column then we use DISTINCT in the COUNT function.

```
SELECT COUNT(DISTINCT field) FROM table_name;
```

SUM(field)

SUM function which returns the sum of all the values in the specified column. SUM works on numeric fields only. Null values are excluded from the result returned.

AVG(field)

AVG function returns the average of the values in a specified column. Just like the SUM function, it works only on numeric data types.

MIN(field)

MIN function returns the smallest value in the specified table field.

MAX(field)

MAX function is the opposite of the MIN function. It returns the largest value from the specified table field.

GROUP BY statement

As the name suggests we use the GROUP BY statement to group results based on columns. And we use this with aggregate functions like SUM, AVG, MAX, MIN, and COUNT

SELECT ***aggregate_function****(column_name) FROM table_name*
WHERE condition
GROUP BY column_name;

GROUP BY statement HAVING

There will be times when we will want to restrict our results to a certain given criteria. In such cases , we can use the HAVING clause

SELECT ***aggregate_function****(column_name) FROM table_name*
WHERE condition
GROUP BY column_name
HAVING condition;

Reference

- https://dev.mysql.com/doc/refman/5.7/en/func-op-summary-ref.html
- https://dev.mysql.com/doc/refman/5.7/en/group-by-functions-and-modifiers.html