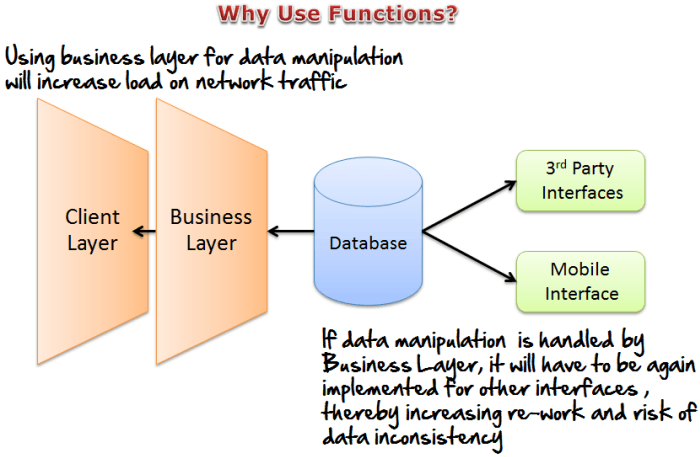
**Functions**



**Aggregate Functions**

MySQL's aggregate function is used to perform calculations on multiple values and return the result in a single value like the average of all values, the sum of all values, and maximum & minimum value among certain groups of values.

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| **Aggregate Function** | **Descriptions** |
| count() | It returns the number of rows, including rows with NULL values in a group. |
| sum() | It returns the total summed values (Non-NULL) in a set. |
| average() | It returns the average value of an expression. |
| min() | It returns the minimum (lowest) value in a set. |
| max() | It returns the maximum (highest) value in a set. |
| groutp\_concat() | It returns a concatenated string. |
| first() | It returns the first value of an expression. |
| last() | It returns the last value of an expression. |

**MySQL Count() Function**

**COUNT(\*) Function:** This function uses the SELECT statement to returns the count of rows in a result set. The result set contains all Non-Null, Null, and duplicates rows.

**COUNT(expression) Function:** This function returns the result set without containing Null rows as the result of an expression.

**COUNT(distinct expression) Function:** This function returns the count of distinct rows without containing NULL values as the result of the expression.

**EX**

SELECT COUNT(DISTINCT emp\_age) FROM employees;

**MySQL sum() function**

The MySQL sum() function is used to return the total summed value of an expression. It returns NULL if the result set does not have any rows. It is one of the kinds of aggregate functions in MySQL.

SELECT emp\_id, emp\_name, occupation, SUM(working\_hours) AS "Total working hours" FROM employees GROUP BY occupation;

**MySQL avg() function**

The MySQL avg() is an aggregate function used to return the average value of an expression in various records.

**EX**

SELECT emp\_name, occupation,

AVG(working\_hours) Avg\_working\_hours

FROM employees

GROUP BY occupation

HAVING AVG(working\_hours)>9;

**MySQL MIN() Function**

The MIN() function in MySQL is used to return the minimum value in a set of values from the table. It is an aggregate function that is useful when we need to find the smallest number, selecting the least expensive product, etc.

**EX**

SELECT emp\_name, city, MIN(DISTINCT income) AS Minimum\_Income

FROM employees

GROUP BY city;

**MySQL MAX() Function**

The MySQL MAX() function is used to return the maximum value in a set of values of an expression. This aggregate function is useful when we need to find the maximum number, selecting the most expensive product, or getting the largest payment to the customer from your table.

**EX**

SELECT city, MAX(DISTINCT income) AS "Maximum Income"

FROM employees

GROUP BY city;

**MySQL GROUP\_CONCAT() Function**

The GROUP\_CONCAT() function in MySQL is a type of an aggregate function. This function is used to concatenate string from multiple rows into a single string using various clauses. If the group contains at least one non-null value, it always returns a string value. Otherwise, you will get a null value.

**EX**

SELECT emp\_fname, dept\_id,

GROUP\_CONCAT(DISTINCT designation) as "designation" FROM employee group by emp\_id;

**MySQL first function**

The MySQL first function is used to return the first value of the selected column. Here, we use limit clause to select first record or more.

**EX**

SELECT officer\_name

FROM officers

LIMIT 2;

**MySQL last function**

MySQL last function is used to return the last value of the selected column.

**EX**

SELECT officer\_name

FROM officers

ORDER BY officer\_name DESC

LIMIT 1;

**MySQL Date/Time Functions**

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| **Functions** | **Description** |
| date() | The date() function is used to get the date from given date/datetime. |
| adddata() | The adddata() function is used to get the date in which some time/date intervals are added. |
| curdate() | The curdate() function is used to get the current date. |
| current\_date() | The current\_date() function is used to get the current date. |
| date\_add() | The date\_add() function is used to get the date in which some date/datetime intervals are added. |
| date\_format() | The date\_format() function is used to get the date in specified format. |
| datediff() | The datediff() function is used to get the difference between the two specified date values. |
| day() | The day() function is used to get the day from the given date. |
| dayname() | The dayname() function is used to get the name of the day from the given date. |
| dayofmonth() | The dayofmonth() function is used to get the day for the specified date. |
| dayofweek() | The dayofweek() function is used to get the day of the week in numeric. |
| dayofyear() | The dayofyear() function is used to get the number of day in the year. |
| from\_days() | The from\_days() function is used to get the date of the given number of days. |
| hour() | The hour() function is used to get the hour from the given datetime. |
| addtime() | The addtime() function is used to get the time/datetime value in which some time intervals are added. |
| current\_time() | The current\_time() function is used to get the current time. |
| current\_timestamp() | The current\_timestamp() function is used to get the current date and time. |
| curtime() | The curtime() function is used to get the current time. |
| last\_day() | The last\_day() function is used to get the last date of the given month on the date. |
| localtime() | The localtime() function is used to get the current date and time. |
| localtimestamp() | The localtimestamp() function is used to get the current date and time. |
| makedate() | The makedate() function is used to make the date from the given year and number of days. |
| maketime() | The maketime() function is used to make the time from given hour, minute and second. |
| microsecond() | The microsecond() function is used to get the value of the microsecond from the given datetime or time. |
| minute() | The minute() function is used to get the value of month for the specified datetime or time. |
| month() | The month() function is used to get the value of month from given datetime or time. |
| monthname() | The monthname() function is used to get the full month name. |
| now() The now() | function is used to get the current date and time. |
| period\_add() | The period\_add() function adds the given number of month in the given period in the format YYMM or YYYYMM. |
| period\_diff() | The period\_diff() function is used to get the difference between the given two periods. |
| quater() | The quarter() function is used to get the quarter portion of the specified date/datetime. |
| sec\_to\_time() | The sec\_to\_time() function is used to convert the specified second into time. |
| second() | The second() function is used to get the second portion from the specified date/datetime. |
| str\_to\_date() | The str\_to\_date() function is used to convert the string into the given format\_mask. |
| subdate() | The subdate() function is used to get the date which is subtracted by given intervals. |
| subtime() | The subtime() function is used to get the time/datetime which is subtracted by certain intervals. |
| sysdate() | The sysdate() function is used to get the system date. |
| time() | The time() function is used to get the time for the given time/datetime. |
| time\_format() | The time\_format() function is used to format the time in specified format\_mask. |
| time\_to\_sec() | The time\_to\_sec() function is used to convert the time into seconds. |
| timediff() | The timediff() function is used to get the difference for the given two time/datetime. |
| timestamp() | The timestamp() function is used to convert the expression into datetime/time. |
| to\_day() | The to\_day() function is used to convert the date into numeric number of days. |
| weekday() | The weekday() function is used to get the index for a date |
| week() | The week() function is used to get the week portion for the specified date. |
| weekofyear() | The weekofyear() function is used to get the week of the given date. |

**MySQL DATE() Function**

The date() is a MySQL date/time function. It is used to get the date from given date/datetime.

**EX**

Select date('2018-09-24 10:51');

**MySQL ADDDATE() Function**

The adddate() is a MySQL date/time function. It is used to get the date in which some time/date intervals are added.

**EX**

select adddate(date, interval value unit );

**MySQL CURDATE() Function**

The curdate() is a my date/time function. It is used to get the current date.

**EX** select curdate();

**MySQL CURRENT\_DATE() Function**

The current\_date() is a MySQL date/time function. It is used to get the current date.

**EX** select current\_date()+2;

**MYSQL Math functions**

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| **Functions** | **Description** |
| ABS() | The ABS() function returns the absolute value of the specified number. |
| ACOS() | The ACOS() function is used to get the arc cosine of the given number. |
| SIGN() | The SIGN() function is used to get a sign of the specified number. |
| SIN() | The SIN() function is used to get the sine value of the given number. |
| SQRT() | The SQRT() function is used to get the square root of the given number. |
| SUM() | This function is used to sum the values of given expressions. |
| TAN() | The TAN() function is used to get the tangent of the given number |
| TRUNCATE() | The TRUNCATE() function is used to get the given number truncated up to given certain decimal places. |
| ASIN() | The ASIN() function is used to get the arc sine of the given number. |
| ATAN2() | The ATAN2 function is used to get the arc tangent of the specified numbers n and m. |
| ATAN() | The ATAN() function is used to get the arc tangent of the specified number. |
| AVG() | The AVG() function is used to get the average value from the given expression. |
| CEIL() | The CEIL() function returns the smallest value which is greater than or equal to the specified number. |
| CEILING() | The CEILING() function returns the smallest value which is greater than or equal to the given number. |
| COS() | The COS() function is used to get the cosine of the given number. |
| COT() | The COT() function is used to get the cotangent of the given number. |
| COUNT() | The COUNT() function is used to get the total count for the specified column of the table. |
| DEGREES() | DEGREES() function is used to convert the given radian number into a degree. |
| DIV() | The DIV() function is used to find the integer division by dividing the number n by the number m. |
| EXP() | The EXP() function is used to find e raised to the power of number i.e. enumber. |
| FLOOR() | The FLOOR() function is used to find the greatest integer which is equal to or less than the specified number. |
| GREATEST() | The GREATEST() function is used to get the largest number from the list. |
| LEAST() | The LEAST() function is used to get the smallest number from the list. |
| LN() | The LN() function is used to get the natural logarithm for the specified number. |
| LOG10() | The LOG10() function is used to get the base-10 logarithm for the specified number. |
| LOG() | The LOG() function is used to return either the natural logarithm of the given number if it has one parameter or specified base logarithm number if it has two parameters. |
| LOG2() | The LOG2() function is used to get the base-2 logarithm for the specified number. |
| MAX() | The MAX() function is used to get the maximum number of the given column name. |
| MIN() | The MIN() function is used to get the minimum number of the given column name. |
| MOD() | The MOD() function is used to get the remainder for the specified values. |
| PI() | The PI() function is used to get the value of pi upto 6 decimal places. |
| POWER() | The POWER() function is used to get the power for the specified values. |
| POW() | The POW function is used to get the power for the specified values. |
| RADIANS() | The RADIANS() function is used to convert the given degrees to radians. |
| RAND() | The RAND() function is used to generate the random number. |
| ROUND() | The ROUND() function is used to round off the specified number. |

**MySQL String Function**

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| **Functions** | **Description** |
| CONCAT\_WS() | MySQL CONCAT\_WS() function returns a string by concatenating arguments using separator. |
| CONCAT() | The CONCAT() function returns a string by concatenating all the arguments. |
| CHARACTER\_LENGTH() | The CHARACTER\_LENGTH() function returns the size of the specified string. |
| ELT() | The ELT() function returns the Nth element from the list of string. |
| EXPORT\_SET() | The EXPORT\_SET() function the returns string for each bit set. |
| FIELD() | The FIELD() function returns the index of string. |
| FIND\_IN\_SET() | The FIND\_IN\_SET() function returns the value of the string which is given in the first position in the argument. |
| FORMAT() | The FORMAT() function formats the number X to round of D decimal place. |
| FROM\_BASE64() | The FROM\_BASE64() function encodes the given string to binary format. |
| HEX() | The HEX() function returns the specified number or string in a hexadecimal string. |
| INSERT() | In INSERT() function, a string str is passed with a position 'pos' which tells at which position the character is to be placed, and 'len' length is the length of the character to be placed. |
| INSTR() | The INSTR() function returns the 1st occurrence of substring substr in string str. |
| LCASE() | The LCASE() function returns 1st occurrence of substring substr in string str. |
| LEFT() | The LEFT() function returns left side 'len' characters from the given string 'str'. |
| LENGTH() | The LENGTH() function returns the length of the specified string which is measured in bytes. |
| LIKE() | The LIKE() function returns either 1 or 0 and is used for checking pattern matching. |
| LOAD\_FILE() | The LOAD\_FILE() function returns the content of the file. |
| LOCATE() | The LOCATE() function returns the first occurrence of given 'substr' in the given string. |
| LOWER() | The LOWER() function returns the given string in lower case. |
| LPAD() | The LPAD() function returns string 'str' which is left-padded to the given length. |
| LTRIM() | The LTRIM() function returns string by removing leading space. |
| MAKE\_SET() | The MAKE\_SET() function returns values from the set for the given bit. |
| MID() | The MID() function extracts a substring from a string and returns a string with given length and position. |
| OCTET\_LENGTH() | The OCTET\_LENGTH() function returns length of given string. |
| OCT() | The OCT() function returns length of given string. |
| ORD() | The ORD() function returns the code for the leftmost character if that character is a multi-byte. |
| POSITION() | The POSITION() function returns the position of the given substring in a string. |
| QUOTE() | The QUOTE() function returns the string which is passed in a single quote. |
| REPEAT() | The REPEAT() function repeats a string for a specified number of times. |
| REPLACE() | The REPLACE() function replaces all the occurrences of a substring within a string. |
| REVERSE() | The REVERSE() function reverses a string supplied as an argument. |
| RIGHT() | The RIGHT() function extracts a specified number of characters from the right side of a string. |
| RPAD() | The MYSQL RPAD() function pads the specified strings from the right. |
| RTRIM() | The MYSQL RTRIM() function removes the trailing spaces from the specified string. |
| SOUNDEX() | The MYSQL SOUNDEX() function returns the soundex string for the specified string. |