**SQL / ORACLE BUILT-IN FUNCTIONS**

```
MariaDB [(none)]> create database glad;

Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use glad;

Database changed
```

AGGREGATE FUNCTIONS:

I. Create a library database with book name, author name, access code, date of access, publisher name, and price as the fields.

```
MariaDB [glad]> create table library(Bname varchar(15),Bcode int,doa date,Pname varchar(20),Price decimal(7,2));

Query OK, 0 rows affected (0.17 sec)

MariaDB [glad]> desc library;

+-------+--------------+------+-----+---------+-------+

| Field | Type         | Null | Key | Default | Extra |

+-------+--------------+------+-----+---------+-------+

| Bname | varchar(15)  | YES  |     | NULL    |       |

| Bcode | int(11)      | YES  |     | NULL    |       |

| doa   | date         | YES  |     | NULL    |       |

| Pname | varchar(20)  | YES  |     | NULL    |       |

| Price | decimal(7,2) | YES  |     | NULL    |       |

+-------+--------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

MariaDB [glad]> insert into library values('Programming in C',1110,'2016-07-12','Pearson',550); Query

OK, 1 row affected, 1 warning (0.02 sec)

MariaDB [glad]> insert into library values('Core Java',1111,'2016-07-22','ttk',650);
```

Query OK, 1 row affected (0.02 sec)

MariaDB []> insert into library values('Networks',1112,'2016-07-13','Pearson',700); Query OK,

1 row affected (0.03 sec)

MariaDB [glad]> insert into library values('Database',1113,'2016-09-18','Pearson',750); Query

OK, 1 row affected (0.02 sec)

MariaDB [glad]> insert into library values('C++',1114,'2016-09-03','Pearson',600); Query

OK, 1 row affected (0.02 sec)

MariaDB [glad]> select * from library;

```
+-----------------+-------+------------+---------+--------+
| Bname           | Bcode | doa        | Pname | Price  |
+-----------------+-------+------------+---------+--------+
| Programming in | 1110 | 2016-07-12 | Pearson | 550.00 |
| Core Java      |  1111 | 2016-07-22 | ttk     | 650.00 |
| Networks       |  1112 | 2016-07-13 | Pearson | 700.00 |
| Database       |  1113 | 2016-09-18 | Pearson | 750.00 |
| C++            | 1114 | 2016-09-03 | Pearson | 600.00 |
+-----------------+-------+------------+---------+--------+
```

5 rows in set (0.00 sec)

1. Select the average price of all books in the library database.

MariaDB [glad]> select avg(price) from library;

```
+------------+
| avg(price) |
+------------+
| 650.000000 |
+------------+
```

1 row in set (0.03 sec)

2. Select the name of the book with maximum price in the given database.

```
MariaDB [glad]> select bname,max(price) as 'price' from library;
+----------------+--------+
| bname          | price  |
+----------------+--------+
| Database  | 750.00 |
+----------------+--------+
1 row in set (0.04 sec)
```

3. Select the book with minimum price.

```
MariaDB [glad]> select bname,min(price) as 'price' from library;
+----------------+--------+
| bname          | price  |
+----------------+--------+
| Programming in | 550.00 |
+----------------+--------+
1 row in set (0.00 sec)
```

4. Count the number of records in the library database.

```
MariaDB [glad]> select count(bname) from library;
+--------------+
| count(bname) |
+--------------+
|          5 |
```

```
+--------------+
1 row in set (0.00 sec)
```

4. Print the total (total cost of all the books) estimate of the library book.

```
MariaDB [glad]> select sum(price) from library;
+------------+
| sum(price) |
+------------+
| 3250.00 |
+------------+
1 row in set (0.00 sec)
```

**II. CHARACTER FUNCTIONS:**

1. Convert the initial letters of given string to capital letter.

```
MariaDB [glad]> select lower('INDIA');
+----------------+
| lower('INDIA') |
+----------------+
| india          |
+----------------+
1 row in set (0.02 sec)
```

2. Convert the upper case letter to lower case.

```
MariaDB [glad]> select upper('india');
+----------------+
| upper('india') |
+----------------+
```

```
| INDIA         |
+---------------+
1 row in set (0.00 sec)
```

4. Ltrim (or) remove the leftmost substring.

```
MariaDB [glad]> select ltrim('         india');
+-----------------------+
| ltrim('       india') |
+-----------------------+
| india                 |
+-----------------------+
1 row in set (0.00 sec)
```

5. Rtrim (or) remove the rightmost substring.

```
MariaDB [glad]> select rtrim('india          ');
+-----------------------+
| rtrim('india       ') |
+-----------------------+
| india                 |
+-----------------------+
1 row in set (0.00 sec)
```

6. Allocate the total number of space and character to the filled.

```
MariaDB [glad]> select lpad('india',10,'&');
+----------------------+
| lpad('india',10,'&') |
+----------------------+
```

```
| &&&&&india          |
+---------------------+
1 row in set (0.00 sec)
```

7. Allocate the nspaces then add given character at rightmost position.

```
MariaDB [glad]> select rpad('india',10,'&');
+---------------------+
| rpad('india',10,'&') |
+---------------------+
| india&&&&&          |
+---------------------+
1 row in set (0.00 sec)
```

8. Replace the string searched by the replace character.

```
MariaDB [glad]> select replace('tajmahal','taj','raj');
+---------------------------------+
| replace('tajmahal','taj','raj') |
+---------------------------------+
| rajmahal                        |
+---------------------------------+
1 row in set (0.00 sec)
```

9. Delete a character in the string and replace it by another character.

```
MariaDB [glad]> select substring('sathyabama university',11,20);
+-----------------------------------------+
| substring('sathyabama university',11,20) |
+-----------------------------------------+
```

```
| university                              |
+-----------------------------------------+
1 row in set (0.01 sec)
```

**III. NUMERIC FUNCTIONS:**

1. Convert given negative values to positive values.

```
MariaDB [glad]> select abs(-13);
+----------+
| abs(-13) |
+----------+
|       13 |
+----------+
1 row in set (0.01 sec)
```

2. Convert a decimal number to next higher integer.

```
MariaDB [glad]> select ceil(15.62);
+-------------+
| ceil(15.62) |
+-------------+
|          16 |
+-------------+
1 row in set (0.00 sec)
```

3. Convert the decimal number with immediate lower number.

```
MariaDB [glad]> select floor(15.62);
+--------------+
| floor(15.62) |
```

```
+--------------+
|          15 |
+--------------+
1 row in set (0.00 sec)
```

4. Find the sequence square root of given number.

```
MariaDB [glad]> select sqrt(49);
+----------+
| sqrt(49) |
+----------+
|        7 |
+----------+
1 row in set (0.00 sec)
```

5. Find the sine value of given number.

```
MariaDB [glad]> select sin(90);
+--------------------+
| sin(90)            |
+--------------------+
| 0.8939966636005579 |
+--------------------+
1 row in set (0.02 sec)
```

6. Find the cosine value of given number.

```
MariaDB [glad]> select cos(90);
+---------------------+
| cos(90)             |
```

```
+--------------------+
| -0.4480736161291701 |
+--------------------+
1 row in set (0.00 sec)
```

8. Give the exponent value of given number.

```
MariaDB [glad]> select exp(2);
+------------------+
| exp(2)           |
+------------------+
| 7.38905609893065 |
+------------------+
1 row in set (0.00 sec)
```

7. Return the number with power m and base n.

```
MariaDB [glad]> select power(5,2);
+------------+
| power(5,2) |
+------------+
|         25 |
+------------+
1 row in set (0.00 sec)
```

9. Return the number m rounded to n place.

```
MariaDB [glad]> select round(2.5658969,3);
+--------------------+
| round(2.5658969,3) |
```

```
+--------------------+
|              2.566 |
+--------------------+
1 row in set (0.00 sec)
```

10. In a number cut the remaining part (or) after n digit.

```
MariaDB [glad]> select truncate(2.5658969,3);
+-----------------------+
| truncate(2.5658969,3) |
+-----------------------+
|                 2.565 |
+-----------------------+
1 row in set (0.00 sec)
```

11. Find the modulus of number.

```
MariaDB [glad]> select mod(15,4);
+------------+
| mod(15,4) |
+------------+
|        3 |
+------------+
1 row in set (0.00 sec)
```

**IV. DATE FUNCTIONS:**

1. Add a date with certain number.

```
MariaDB [glad]> select date_add(curdate(),interval 2 month);
+---------------------------------------+
```

| date_add(curdate(),interval 2 month) |

+--------------------------------------+

| 2016-12-05 |

+--------------------------------------+

1 row in set (0.01 sec)

2. Select the last day of given number.

MariaDB [glad]> select last_day('2016-10-05');

+------------------------+

| last_day('2016-10-05') |

+------------------------+

| 2016-10-31 |

+------------------------+

1 row in set (0.02 sec)

3. Select the next day of the given date.

MariaDB [glad]> select datediff('2016-08-05','2016-10-05');

+-----------------------------------+

| datediff('2016-08-05','2016-10-05') |

+-----------------------------------+

| -61 |

+-----------------------------------+

1 row in set (0.01 sec)

4. Give the months between two given dates.

MariaDB [glad]> select datediff('2016-08-05','2016-10-05');

+-----------------------------------+

| datediff('2016-08-05','2016-10-05') |

+-------------------------------------+

| -61 |

+-------------------------------------+

1 row in set (0.01 sec)

6. Select the greatest of two dates.

MariaDB [glad]> select greatest('2016-08-05','2016-10-05');

+----------------------------------------+

| greatest('2016-08-05','2016-10-05') |

+----------------------------------------+

| 2016-10-05 |

+----------------------------------------+

1 row in set (0.00 sec)

7. Give the current date.

MariaDB [glad]> select sysdate();

+---------------------+

| sysdate() |

+---------------------+

| 2016-10-05 09:54:58 |

+---------------------+

1 row in set (0.00 sec)