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SE COMPS

SQL FUNCTIONS

1. Aggragate functions:

a) Avg(): to find average of all values in column.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'A',75);
4  insert into students values(2,'B',78);
5  insert into students values(3,'C',87);
6  insert into students values(4,'D',72);
7
8  select *from students;
9
10 select avg(marks) from students;
```

AVG(MARKS)
78

b) Count(): to find number of values in the column.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'A',75);
4  insert into students values(2,'B',78);
5  insert into students values(3,'C',87);
6  insert into students values(4,'D',72);
7
8  select *from students;
9
10 select count(Name) from students;
11
```

COUNT(NAME)
4

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c) Sum():to find the addition of values in column.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'A',75);
4  insert into students values(2,'B',78);
5  insert into students values(3,'C',87);
6  insert into students values(4,'D',72);
7
8  select *from students;
9
10 select sum(marks) from students;
11
```

SUM(MARKS)
312

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d) Min():to fing smallest element in the column.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'A',75);
4  insert into students values(2,'B',78);
5  insert into students values(3,'C',87);
6  insert into students values(4,'D',72);
7
8  select *from students;
9
10 select min(marks) from students;
11
```

MIN(MARKS)
72

e) Max(): to find maximum element from the column

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'A',75);
4  insert into students values(2,'B',78);
5  insert into students values(3,'C',87);
6  insert into students values(4,'D',72);
7
8  select *from students;
9
10 select max(marks) from students;
11
```

MAX(MARKS)
87

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2. String function

a) Length(): to find the length of string.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select length(Name) from students;
```

LENGTH(NAME)
7
5
9
6

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b) Ascii(): returns ascii value of the leftmost character in the string.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select ascii(Name) from students;
```

ASCII(NAME)
77
82
67
83

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c) Lower()" to display string in lowercase

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select lower(Name) from students;
```

LOWER(NAME)
manisha
rekha
chetashri
sayali

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d) Reverse(): to display string in reverse form.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select reverse(Name) from students;
```

REVERSE(NAME)
ahsinaM
ahkeR
irhsatehC
ilayaS

e) Concat(): to join to strings.

```
Database changed
mysql> select concat('AA','BB') from dual;
+--------------------+
| concat('AA','BB') |
+--------------------+
| AABB               |
+--------------------+
1 row in set (0.05 sec)
```

f) Locate()

```
mysql> select locate('AA','AAA') from dual;
+--------------------+
| locate('AA','AAA') |
+--------------------+
|                  1 |
+--------------------+
1 row in set (0.00 sec)
```

g) Repeat(): to display one string n times

```
mysql> select repeat('AB',5) from dual;
+----------------+
| repeat('AB',5) |
+----------------+
| ABABABABAB     |
+----------------+
1 row in set (0.00 sec)
```

h) Strcmp(): to compare 2 strings

```
mysql> select strcmp('Hello','Hello') from dual;
+--------------------------+
| strcmp('Hello','Hello') |
+--------------------------+
|                        0 |
+--------------------------+
1 row in set (0.00 sec)

mysql> select strcmp('Hello','World') from dual;
+--------------------------+
| strcmp('Hello','World') |
+--------------------------+
|                       -1 |
+--------------------------+
1 row in set (0.00 sec)

mysql> select strcmp('World','Hello') from dual;
+--------------------------+
| strcmp('World','Hello') |
+--------------------------+
|                        1 |
+--------------------------+
1 row in set (0.00 sec)
```

3. Mathematical functions

a) Abs():returns positive value

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select abs(marks) from students;
```

ABS(MARKS)
75
78
87
72

b) cos(): return cosine of element

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select cos(marks) from students;
```

COS(MARKS)
.921751269724749316392296845214141277227 5
-.857803093244987855408353123424494741 55
.569750334265311920008506689961279340205 2
-.967250588273882487291714086224150188 11

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c) sqrt(): return square root of values.

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select sqrt(Marks) from students;
```

SQRT(MARKS)
8.660254037844386467637231707529361834 71
8.831760866327846854764042726959253964 17
9.327379053088815045554475542320556983 28
8.485281374238570292810132345258188471 42

d) sign(): returns 1 if positive value

```
1  create table students(ID number,Name varchar2(20),Marks number);
2
3  insert into students values(1,'Manisha',75);
4  insert into students values(2,'Rekha',78);
5  insert into students values(3,'Chetashri',87);
6  insert into students values(4,'Sayali',72);
7
8  select *from students;
9
10 select sign(Marks) from students;
```

SIGN(MARKS)
1
1
1
1

e) degrees():converts radian to degree.

```
mysql> select degrees(180) from dual;
+--------------------+
| degrees(180)       |
+--------------------+
| 10313.240312354817 |
+--------------------+
1 row in set (0.00 sec)
```

f) log(): returns log value

```
mysql> select log(10) from dual;
+------------------+
| log(10)          |
+------------------+
| 2.302585092994046 |
+------------------+
1 row in set (0.00 sec)
```

g) hex():returns hexadecimal value of decimal number or string

```
mysql> select hex(10) from dual;
+---------+
| hex(10) |
+---------+
| A       |
+---------+
1 row in set (0.00 sec)
```

4. Date Function

a) Curdate(): display current date of system.

```
mysql> select curdate();
+------------+
| curdate()  |
+------------+
| 2020-08-26 |
+------------+
1 row in set (0.00 sec)
```

b) Curtime():displays current system time

```
mysql> select curtime();
+-----------+
| curtime() |
+-----------+
| 20:05:42  |
+-----------+
1 row in set (0.02 sec)
```

c) Dayname():returns day of week

```
mysql> select dayname('2001-09-07');
+-----------------------+
| dayname('2001-09-07') |
+-----------------------+
| Friday                |
+-----------------------+
1 row in set (0.00 sec)
```

d) Month():returns month

```
mysql> select month('2001-09-07');
+---------------------+
| month('2001-09-07') |
+---------------------+
|                   9 |
+---------------------+
1 row in set (0.00 sec)
```

e) Year(): returns year.

```
mysql> select year('2001-09-07');
+----------------------+
| year('2001-09-07') |
+----------------------+
|                 2001 |
+----------------------+
1 row in set (0.00 sec)
```

f) Minute(): return minute from time

```
mysql> select minute('10:05:00');
+---------------------+
| minute('10:05:00') |
+---------------------+
|                   5 |
+---------------------+
1 row in set (0.00 sec)
```

g) Hour(): returns hour

```
mysql> select hour('10:05:00');
+------------------+
| hour('10:05:00') |
+------------------+
|               10 |
+------------------+
1 row in set (0.00 sec)
```

h) Date(): returns date from both date and time

```
mysql> select date('2020-08-15 01:12:00');
+----------------------------+
| date('2020-08-15 01:12:00') |
+----------------------------+
| 2020-08-15                 |
+----------------------------+
1 row in set (0.00 sec)
```

Conclusion:

By using aggragate functions we can perform various operations like minimum, maximum, addition ,etc. String functions can be use for finding string with help of substring, join , compare 2 strings, etc. Numerical functions are to calculate mathematical values and date functions are use to display current date or time, etc.