

Functions

- Functions are used to solve particular task.
- We have 2 types of functions;
 - Predefined Function
 - User Defined Function

Predefined Function

- Number Function
- Character Function
- Date Functions
- Group/Aggregate Functions

Character Function

- Upper()
- Lower()
- Length()
- Substr()
- Instr()
- Trim() / ltrim() / rtrim()
- Replace()
- LPAD() and RPAD()

upper()

- It is used to convert a string or column values into upper case.

Example

```
SELECT upper(name) FROM employee;
```

```
SELECT upper('abc');
```

```
SELECT upper('abc') FROM employee;
```

lower()

- It is used to convert a string or column values into lower case.

Example

```
SELECT lower(name) FROM employee;
```

```
SELECT lower('ABC');
```

```
SELECT lower('ABC') FROM employee;
```

Length()

- It returns total length of the string including space.

```
SELECT length('new delhi');
```

substr()

- It will extract portion of the string within given string.

Syntax

SUBSTR(string, start, length)

- string: The input string from which you want to extract the substring.
- start:
 - Searching from start position.
 - It may be positive or negative value.
 - If it is positive value then searching happens from left to right.
 - If it negative value then searching happens from right to left.
- length:
 - The number of characters to extract.
 - If not given then returns all characters from the start position to the end of the string.
 - It is optional.

Example

```
SELECT substr('BHUBANESWAR',2,3);
```

```
SELECT substr('BHUBANESWAR',6,3);
```

```
SELECT substr('BHUBANESWAR',-5,3);
```

```
SELECT substr('BHUBANESWAR',2);
```

```
SELECT substr('BHUBANESWAR',-5);
```

Example#1

Write a query to display the employees whose name 2nd letter would be 'aj' using substr() function.

```
SELECT * FROM employee WHERE substr(name,2,2)='aj';
```

Example#2

Write a query to display the employees whose name length is greater than 3 using length() function.

```
SELECT * FROM employee WHERE length(name)>3;
```

Instr()

- It is used to find the position of the first occurrence of a substring within a string.
- Syntax
instr(string, substring)
- Example
SELECT INSTR('Hello World', 'World');
SELECT INSTR('Hello World', 'l');
SELECT INSTR('Hello World', 'z');

trim() / ltrim() / rtrim

- trim() is used to remove leading and trailing spaces.
- ltrim() is used to remove leading spaces.
- rtrim() is used to remove trailing spaces.
- Example

Example

```
SELECT length(' BBSR ');
```

```
SELECT length(trim(' BBSR '));
```

```
SELECT length(ltrim(' BBSR '));
```

```
SELECT length(rtrim(' BBSR '));
```

Replace()

- It is used to replace all occurrences of a substring within a string

- Example
 SELECT replace('Oracle is easy to learn','Oracle','MySQL');
 SELECT replace('Oracle is easy to learn','a','*XYZ*');
 SELECT replace('Oracle is easy to learn','Oracle','C');
 SELECT replace('Oracle is easy to learn','Oracle1','C');

Lpad() / Rpad()

- It return the strings padded to the left or right.
- Example
 SELECT LPAD('1234',12,'*');
 SELECT RPAD('1234',12,'*');

Number Function

```
CREATE TABLE gold(
```

```
    item_no int,
```

```
    weight decimal(9,5),
```

```
    rate_per_gram decimal(7,2)
```

```
);
```

```
INSERT INTO gold VALUES(1,10.12345,5350.50);
```

```
SELECT item_no, weight, rate_per_gram, weight*rate_per_gram FROM gold;
```

Truncate (number, truncate_digit)

- If it is positive value then it will truncate after decimal.
- It is negative value then before decimal replace number of digit with '0'.

```
SELECT item_no, weight, rate_per_gram, truncate(weight*rate_per_gram,2) FROM gold;
```

```
SELECT item_no, weight, rate_per_gram,  
weight*rate_per_gram,truncate(weight*rate_per_gram,-1) FROM gold;
```

round

```
SELECT item_no, weight, rate_per_gram,  
weight*rate_per_gram,round(weight*rate_per_gram,2) FROM gold;
```

```
SELECT item_no, weight, rate_per_gram,  
weight*rate_per_gram,round(weight*rate_per_gram,3) FROM gold;
```

```
SELECT item_no, weight, rate_per_gram,  
weight*rate_per_gram,round(weight*rate_per_gram,-2) FROM gold;
```

```
SELECT item_no, weight, rate_per_gram,  
weight*rate_per_gram,round(weight*rate_per_gram,-1) FROM gold;
```

```
SELECT CEIL(10.3);
```

```
SELECT FLOOR(10.9);
```

```
SELECT abs(-123);
```

```
SELECT POWER(2, 3);
```

```
SELECT SQRT(25);
```

```
SELECT MOD(10, 3);
```

```
SELECT rand();
```