Built In Functions

MySQL can do much more than just store and retrieve data. We can also **perform manipulations on the data** before retrieving or saving it. That's where MySQL Functions come in. Functions are simply pieces of code that perform some operations and then return a result. Some functions accept parameters while other functions do not accept parameters.

Types Of Functions:

- String Functions
- Numeric Functions
- Date Functions
- Control Flow Function
- Conversion Function
- Aggregate Function

String Functions:

1. Query the first name of all the employees in uppercase

   Now to convert the string to uppercase you can use of upper() function as shown below

   UPPER(str)

   The function changes all characters of the specified str string to uppercase and outputs the result.

```
SELECT
   upper(first_name) as firstname
FROM
   employee ;
```

Output:

firstname
KELLY
TOM
MIKE
ANDY
ANJEL
RAM
ROHAN
JOHN

2. Query the last name of all the employees in lowercase

   Now to convert the string to lowercase you can use of lower() function as shown below

   LOWER(str)

   The function changes all characters of the specified str string to lowercase and outputs the result.

```
SELECT
    LOWER(last_name) as lastname
FROM
    employee ;
```

Output:

lastname
davis
taylor
whalen
lumb
nair
kumar
sharma
king

3. Display all the letters of ‘john’ in upper case

```
SELECT UPPER('john');
```

Output:

UPPER(‘john’)
JOHN

4. Query the length of the string ‘Ronaldo’
   To retrieve the length of the string you can make use of length()

   Syntax:

SELECT LENGTH(string) as alias;

```
SELECT LENGTH('Ronaldo');
```

Output:

LENGTH('Ronaldo')
7

5. Query the first name of all the employees along with their size

```
SELECT
    first_name, length(first_name) as len
FROM
    employee;
```

Output:

first_name	len
kelly	5
tom	3
mike	4
andy	4
anjel	5
ram	3
rohan	5

john	4

6. Query firstname, salary of all employees who are earning 5 digits salary without using like operator

```
SELECT
    first_name, salary
FROM
    employee
WHERE
    length(salary) =5;
```

Output:

first_name	**salary**
kelly	78000
tom	84200
mike	98200
andy	42200
anjel	42200
ram	64200
rohan	84200

7. Write a query to concatenate first name and last name of all employee without using concatenation operator

   For this you can make use of **CONCAT()**. This function is beneficial when we need to concatenate or merge two or more strings or words.

```
SELECT
CONCAT(first_name, last_name) as details
FROM employee;
```

Output:

details
kellydavis
tomtaylor
mikewhalen
andylumb
anjelnair
ramkumar
rohansharma
johnking

8. Query first name, last name, email id of all the employees separated by spaces

```
SELECT
CONCAT(first_name, ' ', last_name,' ', email) as details
FROM employee;
```

Output:

details
kelly davis davis@gmail.com
tom taylor tom@gmail.com
mike whalen mike@gmail.com
andy lumb andy@gmail.com
anjel nair anj@gmail.com
ram kumar ram@gmail.com
rohan sharma ro@gmail.com
john king jo__%%$@gmail.com

You can achieve the same using **CONCAT_WS().** The syntax is as shown below

CONCAT_WS(separator,str1,str2,...)

```
SELECT
CONCAT_WS('_',first_name, last_name, email) as details
FROM employee;
```

Output:

details
kelly_davis_davis@gmail.com
tom_taylor_tom@gmail.com

mike_whalen_mike@gmail.com
andy_lumb_andy@gmail.com
anjel_nair_anj@gmail.com
ram_kumar_ram@gmail.com
rohan_sharma_ro@gmail.com
john_king_jo__%%$@gmail.com

9. Query the substring from the string ‘RONALDO’ FROM 2nd position and extract 5 characters

   This can be achieved using **SUBSTRING()**. The syntax of substring() is shown below

   SELECT SUBSTRING("STRING", starting, length) AS ExtractString;

   OR

   SUBSTRING(string FROM start FOR length)

   This function returns the specified number of characters from a particular position of a given string.

```
SELECT SUBSTRING('RONALDO', 2, 5) as sub;
```

Output:

sub
ONALD

10. Query the first name of all the employees along with first character of first name

```
SELECT
   first_name,SUBSTRING(first_name, 1,1) as sub
FROM
   employee ;
```

Output:

first_name	sub
kelly	k
tom	t
mike	m
andy	a
anjel	a
ram	r
rohan	r
john	j

11.Query the first name along with last character of first name

```
SELECT
  first_name,SUBSTRING(first_name, length(first_name)) as
sub
FROM
  employee ;
```

OR

```
SELECT
   first_name,SUBSTRING(first_name, -1) as sub
FROM
   employee ;
```

Output:

first_name	sub
kelly	y
tom	m
mike	e
andy	y
anjel	l
ram	m
rohan	n
john	n

12.Query the first name of all the employees whose first character begins with ‘R’ without using like operator

```
SELECT
  first_name
FROM
  employee
WHERE
  SUBSTRING(first_name, 1,1) = 'r';
```

Output:

first_name
ram
rohan

13.Query the first name of all the employees whose first character is a vowel

```
SELECT
  first_name
FROM
  employee
WHERE SUBSTRING(first_name, 1,1) IN
  ('a','e', 'i', 'o', 'u');
```

Output:

first_name
andy
anjel

14. Query the last name of all the employees whose last but 1 character is not a vowel

```
SELECT
  last_name
FROM
  employee
WHERE
SUBSTRING(last_name, -2,1)
NOT IN ('a','e', 'i', 'o', 'u');
```

Output:

last_name
lumb
sharma
king

15. Query the first name of all the employees with first character in uppercase

```
SELECT
UPPER(SUBSTRING(first_name, 1,1)) ||
SUBSTRING(first_name, 2)
as firstname
FROM employee;
```

Output:

first_name

Kelly
Tom
Mike
Andy
Anjel
Ram
Rohan
John

Here first we are extracting the first character using substring() then for that function we are calling upper() so that the first character will get converted to uppercase. Next all other characters extracted using substring and concatenate with a concatenation operator we can make use of CONCAT() as well.

16. Query the first name of all the employees with first character in lowercase and remaining characters in uppercase

```
SELECT
LOWER(SUBSTRING(first_name, 1,1)) ||
UPPER(SUBSTRING(first_name, 2))
as firstname
FROM employee;
```

Output:

first_name

kELLY
tOM
mIKE
aNDY
aNJEL
rAM
rOHAN
jOHN

17. Query the first half characters of first name in uppercase and rest in lowercase

```
SELECT
UPPER(SUBSTRING(first_name, 1,length(first_name)/2)) ||
LOWER(SUBSTRING(first_name, length(first_name)/2+1))
as FN
FROM employee;
```

Output:

FN
KELly
TOm

MIke
ANdy
ANJel
RAm
ROHan
JOhn

18. Query the characters from position 5 to 9 after concatenating first name and last name

```
SELECT
SUBSTRING(first_name || last_name, 5, 5) as F_N
FROM employee;
```

Output:

F_N
ydavi
aylor
whale
lumb
lnair
umar
nshar
king