

# SQL FUNCTIONS

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- COUNT** Function - The SQL Server COUNT aggregate function is used to count the number of rows in a database table.

- MAX** Function - The SQL Server MAX aggregate function allows to select the highest (maximum) value for a certain column.

- MIN** Function - The SQL Server MIN aggregate function allows to select the lowest (minimum) value for a certain column.

- AVG** Function - The SQL Server AVG aggregate function selects the average value for certain table column.

- SUM** Function - The SQL Server SUM aggregate function allows selecting the total for a numeric column.

- SQRT** Function - This is used to generate a square root of a given number.

- RAND** Function - This is used to generate a random number using SQL command.

- CONCAT** Function - This is used to concatenate multiple parameters to a single parameter.

- RANK** Function - This is used to assign the rank to each row

- `select RANK() over (ORDER BY MARKS DESC) 'POSITION', * from STU_MARKS;`

- DENSE\_RANK** Function - This is used to assign the rank to each row without skipping the rank

- `select DENSE_RANK() over (ORDER BY MARKS DESC) 'POSITION', * from STU_MARKS;`

- ROW\_NUMBER** Function - This is used to add the row no to each row.

- `select row_number() over (ORDER BY MARKS DESC) 'ROWNO', * from STU_MARKS;`

# SQL STRING FUNCTIONS

- ASCII()** Ascii code value will come as output for a character expression..
- CHAR()** Character will come as output for given Ascii code or integer.
- CHARINDEX()** Starting position for given search expression will come as output in a given string expression. EX: Select CHARINDEX('G', 'KING')
- LEFT()** Left part of the given string till the specified number of characters
- RIGHT()** Right part of the given string till the specified number of characters.
- LEN()** Number of characters will come as output for a given string expression
- LOWER()** Lowercase string will come as output for a given string data.
- UPPER()** Uppercase string will come as output for a given string data.

# SQL STRING FUNCTIONS

**SUBSTRING()** Part of a string based on the start position value and length value.

Ex: Select SUBSTRING ('WORLD', 1,3)

**REPLACE()** String expression will come as output for a given string data after replacing all occurrences of specified character with specified character.

Ex: Select REPLACE('INDIA', 'I', 'K')

**REVERSE()** Reverse string expression will come as output for a given string data

**STUFF()** String expression will come as output for a given string data after replacing from starting character till the specified length with specified character.

Ex Select STUFF('ABCDEFGH', 2,4,'IJK')

# SQL DATE FUNCTIONS

Below are the commonly used DATE Functions:

| FUNCTION | SYNTAX   |
|----------|--|
| GETDATE  | GETDATE()  |
| DATEADD  | DATEADD (datepart , number , date )                      |
| DATEDIFF | DATEDIFF ( datepart , startdate , enddate )              |
| DAY      | DAY(DATE)  |
| MONTH    | MONTH(DATE)  |
| YEAR     | YEAR(DATE)   |
| DATEPART | DATEPART(datepart, datecolumnEID)                        |
| CONVERT  | CONVERT(datatype, expression, style)                     |
| FORMAT   | FORMAT ( getdate(), 'D') -> Wednesday, September 6, 2017 |

Select CONVERT (varchar(19),getdate()) -> Sep 6 2017 11:24PM

Select CONVERT (varchar(19),getdate(),10) -> 09-06-17

Select CONVERT (varchar(19),getdate(),110) -> 09-06-2017

# ASSIGNMENT



## ASSIGNMENT – 6

A-1: DEPARTMENT WISE TEAM SIZE AND AVERAGE SALARY OF ALL EMPLOYEES.

A-2 : COUNT OF MANAGERS IN THE COMPANY.

A-3: MAXIMUM & MINIMUM SALARY OF AN ASSOCIATE.

A-4: DEPARTMENT WISE TEAM SIZE AND AVERAGE SALARY OF DELHI EMPLOYEES.

A-5: GENERATE OFFICIAL EMAIL OF THE EMPLOYEE TAKING 1<sup>ST</sup> CHARACTER OF FIRST NAME , 1<sup>ST</sup> CHARACTER OF LAST NAME , LAST 3 DIGITS OF EID, FOLLOWED BY 'RCG.COM'. EMAIL SHOULD BE IN AN UPPER CASE.

A-6: NAME,CITY , PHNO & EMAIL OF THE EMPLOYEES WHOSE AGE  $\geq 40$ .

A-7 EID, NAME DOJ OF EMPLOYEES WHO HAVE COMPLETED 5 YEARS IN THE COMPANY

A-8: DETAILS OF THE MANAGERS HAVING BIRTHDAY IN THE CURRENT MONTH

A-9 : EID, DEPT , DESI , SALARY OF THE EMPLOYEE WHO IS GETTING THE MAXIMUM SALARY

A-10 : EID, NAME OF EMPLOYEE WHO HAS LONGEST NAME

# USER DEFINED FUNCTIONS

User Defined functions can be used to perform a complex logic, can accept parameters and return data.

SQL Server supports two types of User Defined Functions as mentioned below

**Scalar Functions** – The function which returns a Scalar/Single value.

```
CREATE FUNCTION MYSUM (@A INT, @B INT )
```

```
RETURNS INT
```

```
AS
```

```
BEGIN
```

```
    DECLARE @C AS INT;
```

```
    SET @C=@A+@B;
```

```
    RETURN @C;
```

```
END;
```

```
SELECT DBO.MYSUM(10,20);
```

```
DROP FUNCTION MYSUM;
```

# USER DEFINED FUNCTIONS

**Table Valued Functions** – The function which returns a row set of SQL server Table.

```
CREATE FUNCTION GETEMP (  
    @DEP VARCHAR(50)  
) RETURNS TABLE  
AS  
  
RETURN ( SELECT * FROM EMP WHERE DEPT = @DEP )  
;  
  
SELECT * FROM DBO.GETEMP('ADMIN')
```



# ASSIGNMENT



## ASSIGNMENT – 7

A-1: CREATE A FUNCTION CALC TO PERFORM THE SPECIFIED OPERATION ON THE GIVEN TWO NUMBERS .

A-2: FUNCTION TO GENERATE THE EMAIL ID BY ACCEPTING NAME & EID. EMAIL SHOULD CONTAIN 1<sup>ST</sup> CHARACTER OF 1<sup>ST</sup> NAME , 1<sup>ST</sup> CHARACTER OF LAST NAME, LAST 3 DIGITS OF EMP ID FOLLOWED BY @RCG.COM;

A-3: FUNCTION TO RETURN EID, NAME, DESI, DEPT ,SALARY OF THE EMPLOYEES OF A SPECIFIED DEPARTMENT.

A-4: FUNCTION TO DISPLAY THE NAME , DEPT . DESI , CITY OF THE EMPLOYEES WHO HAVE THE BIRTHDAY IN THE CURRENT MONTH.

A-5: FUNCTION TO DISPLAY THE NAME, DEPT & DOJ OF EMPLOYEES WHO HAVE COMPLETED 5 YEARS IN THE COMPANY.