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 – 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 1ST CHARATCET OF FIRST NAME , 1ST CHARATCER OF LAST NAME , LAST 3 DIGITS OF EID, FOLLED BY 'RCG.COM'. EMAIL SHOULD BE IN A UPPER CASE.
A-6: NAME,CITY , PHNO & EMAIL OF THE EMPLOYEES WHOSE AGE >=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
   DECALRE @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 – 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 1ST CHARACTER OF 1ST NAME , 1ST 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.