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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING(IoT and
Cybersecurity Including BCT)**

COURSE NAME : 19SB504 DATABASE MANAGEMENT SYSTEMS

III YEAR / V SEMESTER

Unit II- SQL

Topic :Built-in functions – numeric, date, string functions



Built-in Functions



The following is the list of built-in String functions, DateTime functions, Numeric functions and conversion functions.

STRING FUNCTION

Function	Description
ASCII	Returns the ASCII code value for the leftmost character of a character expression.
CHAR	Returns a character for an ASCII value.
CHARINDEX	Searches for one character expression within another character expression and returns the starting position of the first expression.
CONCAT	Concatenates two or more string values in an end to end manner and returns a single string.
LEFT	Returns a given number of characters from a character string starting from the left
LEN	Returns a specified number of characters from a character string.
LOWER	Converts a string to lower case.
LTRIM	Removes all the leading blanks from a character string.
NCHAR	Returns the Unicode character with the specified integer code, as defined by the Unicode standard.



PATINDEX	Returns the starting position of the first occurrence of the pattern in a given string.
REPLACE	Replaces all occurrences of a specified string with another string value.
RIGHT	Returns the right part of a string with the specified number of characters.
RTRIM	Returns a string after truncating all trailing spaces.
SPACE	Returns a string of repeated spaces.
STR	Returns character data converted from numeric data. The character data is right justified, with a specified length and decimal precision.
STUFF	Inserts a string into another string. It deletes a specified length of characters from the first string at the start position and then inserts the second string into the first string at the start position.
SUBSTRING	Returns part of a character, binary, text, or image expression
UPPER	Converts a lowercase string to uppercase.



ASCII() function

In SQL Server, the ASCII() function returns the ASCII code value of **the leftmost character** of the specified number or character value.

ASCII stands for American Standard Code for Information Interchange. It serves as the character encoding standard for electronic communication.

ASCII(string)

Parameters

string: A string or char value.

EXAMPLE:

```
SELECT ASCII('A') A, ASCII('ABC') ABC
```



CHAR() function

The CHAR() function returns the ASCII code of the specified integer from 0 to 255. You can also specify an expression that **returns an integer value**.

Syntax

CHAR(integer_expression)

Parameters

integer_expression: An integer from 0 to 255 or an expression that returns a value from 0 to 255.

Return Value

Returns a character with CHAR(1) data type. It returns a NULL if specified integers outside 0 to 255 range.

EXAMPLE

```
select char(65) as char65
```



DateTime Functions



Function	Description
<u>CURRENT_TIMESTAMP</u>	Returns the current system date and time of the computer on which the SQL server instance is installed. Time zone is not included.
<u>DATEADD</u>	Returns a new date time value by adding an interval to the specified date part of the specified date
<u>DATEDIFF</u>	Returns the difference in datepart between two given dates.
<u>DATENAME</u>	Returns a datepart as a character string.
<u>DATEPART</u>	Returns a datepart as an integer
<u>DAY</u>	Returns the Day as an integer representing the Day part of a specified date.
<u>GETDATE</u>	Returns a datetime value containing the date and time of the computer on which the SQL Server instance is installed. It does not include the time zone.
<u>GETUTCDATE</u>	Returns a datetime value in UTC format (Coordinated Universal Time), containing the date and time of the computer on which the SQL Server instance is installed.
<u>MONTH</u>	Returns the Month as an integer representing the Month part of a specified date.
<u>YEAR</u>	Returns the Year as an integer representing the Year part of a specified date.
<u>ISDATE</u>	Determines whether the input is a valid date, time or datetime value.



CURRENT_TIMESTAMP() function

➤ In SQL Server, the CURRENT_TIMESTAMP() function returns the current system timestamp of the server on which the SQL Server database instance is installed. It is returned as a datetime value without the time zone offset.

➤ Note: The CURRENT_TIMESTAMP() function is the ANSI equivalent to the GETDATE() function.

➤ CURRENT_TIMESTAMP()

Parameters

No parameters.

Return Value

Returns current system timestamp of the server of datetime data type in YYYY-MM-DD hh:mm:ss.mmm format.



In SQL Server, the DATEADD() function adds a number to a datepart and returns the modified datetime value.

Syntax:

DATEADD(datepart, number, date)

Parameters

datepart: The specific part of the specified date parameter to which the DATEADD() function will add a number.



Numeric Functions

Function	Description
<u>ABS</u>	Returns the absolute value of a number.
<u>AVG</u>	Returns the average value of an expression/column values.
<u>CEILING</u>	Returns the nearest integer value which is larger than or equal to the specified decimal value.
<u>COUNT</u>	Returns the number of records in the SELECT query.
<u>FLOOR</u>	Returns the largest integer value that is less than or equal to a number. The return value is of the same data type as the input parameter.
<u>MAX</u>	Returns the maximum value in an expression.
<u>MIN</u>	Returns the minimum value in an expression.
<u>RAND</u>	Returns a random floating point value using an optional seed value.
<u>ROUND</u>	Returns a numeric expression rounded to a specified number of places right of the decimal point.
<u>SIGN</u>	Returns an indicator of the sign of the input integer expression.
<u>SUM</u>	Returns the sum of all the values or only the distinct values, in the expression. NULL values are ignored.



AVG() function

SQL Server AVG() function is an aggregate function that returns the average value of the specified column values.

The AVG() function computes the average of a set of given values by taking the sum of those values and dividing it by the count of non-null values.

AVG([ALL | DISTINCT] expression)

Parameters

expression: A valid expression that returns values of numeric data type. It can be a column of a table.

ALL is the default value that considers all values of expression/column.



EXAMPLE

```
SELECT AVG (ALL Salary) AS AllSalary FROM Employee
```

COUNT()

In SQL Server, the COUNT() is an aggregate function that returns the number of records in the SELECT query.

COUNT([ALL | DISTINCT] expression)

Parameters

ALL: Applies the aggregate function to all the values in the group. All values are counted. This is the default value.

DISTINCT: Applies the aggregate function to only distinct not null values.



EXAMPLE

SELECT COUNT(*) AS EmpCount FROM Employee;

A screenshot of a SQL query execution interface. The query 'SELECT COUNT(*) AS EmpCount FROM Employee' is entered in a text box. Below the query, there are tabs for 'Results' and 'Messages'. The 'Results' tab is active, showing a table with one column 'EmpCount' and one row containing the value '13'.

	EmpCount
1	13



Any Query????

Thank you.....