CHAPTER 10

ADVANCE DATA MANIPULATION LANGUAGE (SQL Function)

10.1. DATA AND TIME FUNCTIONS

Function	Description
CURRENT_TIMESTAMP	Returns the current date and time
DATEADD	Adds a time/date interval to a date and then returns the date
DATEDIFF	Returns the difference between two dates
DATEFROMPARTS	Returns a date from the specified parts (year, month, and day values)
DATENAME	Returns a specified part of a date (as string)
DATEPART	Returns a specified part of a date (as integer)
DAY	Returns the day of the month for a specified date
GETDATE	Returns the current database system date and time
GETUTCDATE	Returns the current database system UTC date and time
ISDATE	Checks an expression and returns 1 if it is a valid date, otherwise 0
MONTH	Returns the month part for a specified date (a number from 1 to 12)
SYSDATETIME	Returns the date and time of the SQL Server
YEAR	Returns the year part for a specified date

EXAMPLE:

1. Current Timestamp

```
SELECT CURRENT_TIMESTAMP
```

2. DateAdd

```
SELECT DATEADD(Day, 1, ‘2019/12/25') AS DateAdd
SELECT DATEADD(Month, 1, ‘2019/12/25') AS DateAdd
SELECT DATEADD(Year, 1, ‘2019/12/25') AS DateAdd
SELECT DATEADD(month, -2, ’2019/12/25') AS DateAdd
SELECT LastName, BirthDate, DATEADD(year, 18, BirthDate) AS DateAdd
FROM tbEmployees
```

3. DateDiff

```
SELECT DATEDIFF(year, ’2019/08/25', ’2010/08/25') AS DateDiff
SELECT DATEDIFF(month, '2017/08/25', '2011/08/25') AS DateDiff
```

EXAMPLE:

4. DateFromParts

```
SELECT DATEFROMPARTS(2018, 10, 31) AS DateFromParts
```

5. DateName

```
SELECT DATENAME(year, '2017/08/25') AS DatePartString
SELECT DATENAME(month, '2017/08/25') AS DatePartString
```

6. DatePart

```
SELECT DATEPART(yy, '2017/08/25') AS DatePartInt
SELECT DATEPART(month, '2017/08/25') AS DatePartInt
```

7. Day

```
SELECT DAY('2017/08/25') AS DayOfMonth
```

8. GetDate

```
SELECT GETDATE()
```

EXAMPLE:

9. IsDate

```
SELECT ISDATE('2017-08-25’)
SELECT ISDATE('2017’)
SELECT ISDATE('Hello world!’)
```

10. Month

```
SELECT MONTH('2017/08/25') AS [Month]
```

11. SysDateTime

```
SELECT SYSDATETIME() AS [SysDateTime]
```

12. Year

```
SELECT YEAR('1998/05/25 09:08') AS Year
```

10.2. NUMERIC FUNCTIONS

LOG10	Returns the natural logarithm of a number to base 10
MAX	Returns the maximum value in a set of values
MIN	Returns the minimum value in a set of values
PI	Returns the value of PI
POWER	Returns the value of a number raised to the power of another number
RADIANS	Converts a degree value into radians
RAND	Returns a random number
ROUND	Rounds a number to a specified number of decimal places
SIGN	Returns the sign of a number
SIN	Returns the sine of a number
SQRT	Returns the square root of a number
SQUARE	Returns the square of a number
SUM	Calculates the sum of a set of values
TAN	Returns the tangent of a number

Function	Description
ABS	Returns the absolute value of a number
ACOS	Returns the arc cosine of a number
ASIN	Returns the arc sine of a number
ATAN	Returns the arc tangent of a number
ATN2	Returns the arc tangent of two numbers
AVG	Returns the average value of an expression
CEILING	Returns the smallest integer value that is >= a number
COUNT	Returns the number of records returned by a select query
COS	Returns the cosine of a number
COT	Returns the cotangent of a number
DEGREES	Converts a value in radians to degrees
EXP	Returns e raised to the power of a specified number
FLOOR	Returns the largest integer value that is <= to a number
LOG	Returns the natural logarithm of a number, or the logarithm of a number to a specified base

10.3. STRING FUNCTIONS

STR	Returns a number as string
STUFF	Deletes a part of a string and then inserts another part into the string, starting at a specified position
SUBSTRING	Extracts some characters from a string
TRANSLATE	Returns the string from the first argument after the characters specified in the second argument are translated into the characters specified in the third argument.
TRIM	Removes leading and trailing spaces (or other specified characters) from a string
UNICODE	Returns the Unicode value for the first character of the input expression
UPPER	Converts a string to upper-case

LEN	Returns the length of a string
LOWER	Converts a string to lower-case
LTRIM	Removes leading spaces from a string
NCHAR	Returns the Unicode character based on the number code
PATINDEX	Returns the position of a pattern in a string
QUOTENAME	Returns a Unicode string with delimiters added to make the string a valid SQL Server delimited identifier
REPLACE	Replaces all occurrences of a substring within a string, with a new substring
REPLICATE	Repeats a string a specified number of times
REVERSE	Reverses a string and returns the result
RIGHT	Extracts a number of characters from a string (starting from right)
RTRIM	Removes trailing spaces from a string
SOUNDEX	Returns a four-character code to evaluate the similarity of two strings
SPACE	Returns a string of the specified number of space characters

Function	Description
ASCII	Returns the ASCII value for the specific character
CHAR	Returns the character based on the ASCII code
CHARINDEX	Returns the position of a substring in a string
CONCAT	Adds two or more strings together
Concat with +	Adds two or more strings together
CONCAT_WS	Adds two or more strings together with a separator
DATALENGTH	Returns the number of bytes used to represent an expression
DIFFERENCE	Compares two SOUNDEX values, and returns an integer value
FORMAT	Formats a value with the specified format
LEFT	Extracts a number of characters from a string (starting from left)

10.4. CONVERT FUNCTION

CONVERT	Converts a value (of any type) into a specified datatype

Syntax:

CONVERT(*data_type(length), expression, style*)

Example:

SELECT CONVERT(varchar, 25.65)

SELECT CONVERT(datetime, '2017-08-25')

SELECT CONVERT(varchar, '2017-08-25', 101)

101	mm/dd/yyyy	US
102	yyyy.mm.dd	ANSI
103	dd/mm/yyyy	British/French
104	dd.mm.yyyy	German
105	dd-mm-yyyy	Italian