



Module 28: DATE & TIME Functions

🔍 Why Use Date/Time Functions?

Date and time functions help you work with **timestamps**, **durations**, and **date parts**, which are essential in **reporting**, **logging**, **scheduling**, and **calculating age or duration**.

🕒 1. Getting the Current Date and Time

✓ Functions:

Function	Description
CURRENT_TIMESTAMP	Returns the current date and time
GETDATE()	Returns current date and time (datetime)
SYSDATETIME()	Returns higher-precision datetime2
GETUTCDATE()	Returns current UTC date and time

✓ Syntax & Example:

```
SELECT CURRENT_TIMESTAMP AS CurrentTime,  
       GETDATE() AS GetDateTime,  
       SYSDATETIME() AS SystemTime,  
       GETUTCDATE() AS UTCTime;
```

The screenshot shows the SQL Server Management Studio interface. In the query editor window, the previously provided T-SQL code is pasted. Below the editor, the results pane displays the output of the query. The results table has four columns: CurrentTime, GetDateTime, SystemTime, and UTCTime. The 'CurrentTime' column shows the value '2025-06-04 08:48:54.063'. The 'GetDateTime' column shows '2025-06-04 08:48:54.063'. The 'SystemTime' column shows '2025-06-04 08:48:54.0722045'. The 'UTCTime' column shows '2025-06-04 03:18:54.070'. The status bar at the bottom indicates the session ID is 17.

	CurrentTime	GetDateTime	SystemTime	UTCTime
1	2025-06-04 08:48:54.063	2025-06-04 08:48:54.063	2025-06-04 08:48:54.0722045	2025-06-04 03:18:54.070

📅 2. Calculating Age or Duration – **DATEDIFF()**

✓ Definition:

Returns the **difference between two dates** in specified units like **years**, **months**, **days**, etc.

✓ Syntax:

DATEDIFF(unit, start_date, end_date)

Unit	Description
year	yy or yyyy
month	mm
day	dd
hour	hh
minute	mi

📌 Example:

```
SELECT DATEDIFF(YEAR, '2000-01-01', GETDATE()) AS Age, DATEDIFF(HOUR, '2025-05-31 08:00:00', '2025-05-31 14:30:00') AS HoursDifference;
```



Age	HoursDifference
25	6

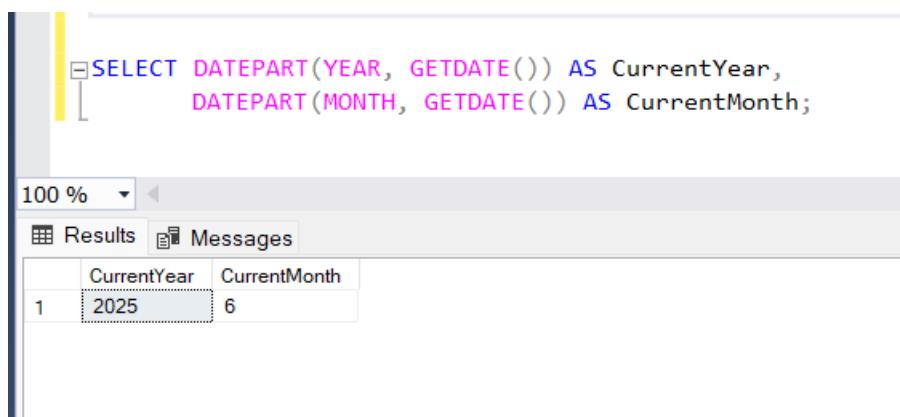
✓ You can also calculate days, hours, etc., between any two timestamps.

🔍 3. Extracting Date and Time Parts

You can extract parts of a date like **year**, **month**, **day**, **weekday**, **hour**, etc.

✓ DATEPART() – Returns numeric part

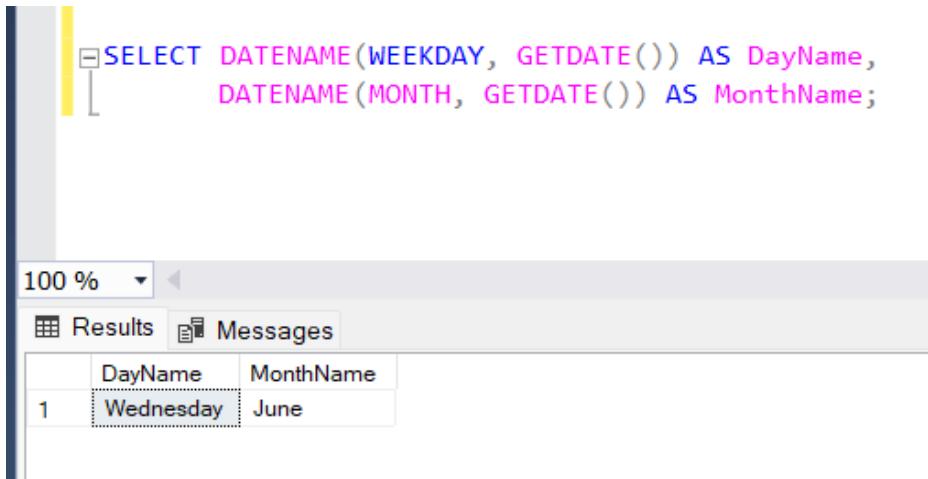
```
SELECT DATEPART(YEAR, GETDATE()) AS CurrentYear,  
       DATEPART(MONTH, GETDATE()) AS CurrentMonth;
```



CurrentYear	CurrentMonth
2025	6

DATENAME() – Returns text part

```
SELECT DATENAME(WEEKDAY, GETDATE()) AS DayName,  
       DATENAME(MONTH, GETDATE()) AS MonthName;
```



The screenshot shows the SQL Server Management Studio interface. The query window contains the code above. Below it, the results pane shows a single row with two columns: DayName and MonthName. The DayName column contains 'Wednesday' and the MonthName column contains 'June'.

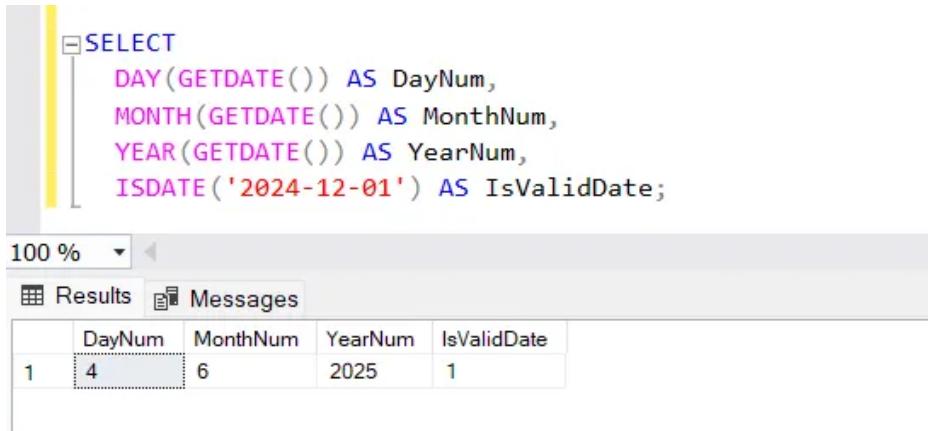
	DayName	MonthName
1	Wednesday	June

Other useful functions:

- `DAY(date)` – Returns day of the month
- `MONTH(date)` – Returns month number
- `YEAR(date)` – Returns year number
- `ISDATE(string)` – Returns 1 if input is a valid date

Example:

```
SELECT  
    DAY(GETDATE()) AS DayNum,  
    MONTH(GETDATE()) AS MonthNum,  
    YEAR(GETDATE()) AS YearNum,  
    ISDATE('2024-12-01') AS IsValidDate;
```



The screenshot shows the SQL Server Management Studio interface. The query window contains the code above. Below it, the results pane shows a single row with four columns: DayNum, MonthNum, YearNum, and IsValidDate. The DayNum column contains '4', the MonthNum column contains '6', the YearNum column contains '2025', and the IsValidDate column contains '1'.

	DayNum	MonthNum	YearNum	IsValidDate
1	4	6	2025	1



Key Points to Remember

Topic	Notes
<code>GETDATE()</code>	Returns current local system date & time
<code>SYSDATETIME()</code>	Higher precision, useful in logs
<code>DATEDIFF()</code>	Use to calculate age, tenure, duration
<code>DATEPART()</code>	Returns numeric values (e.g., 1 for January)
<code>DATENAME()</code>	Returns string values (e.g., 'January')
<code>ISDATE()</code>	Helps validate dynamic string inputs as valid dates
Date formats	SQL Server default is <code>yyyy-mm-dd</code> for compatibility
Always test with <code>GETDATE()</code>	Useful for reports, timestamps, filtering