

Date Functions in MS Excel

Date functions are used to **work with dates**, such as finding days, months, years, age, deadlines, and differences between dates.

1. TODAY Function (Most Used)

Formula:

```
=TODAY()
```

Use:

Returns **current date**.

Automatically updates every day.

2. NOW Function

Formula:

```
=NOW()
```

Use:

Returns **current date and time**.

3. DATE Function

Formula:

```
=DATE(year, month, day)
```

Example:

```
=DATE(2026, 1, 17)
```

Use:

Creates a valid date from year, month, and day.

Useful when date is in text form.

4. DAY Function

Formula:

```
=DAY(A1)
```

Use:

Extracts **day** from a date.

5. MONTH Function

Formula:

```
=MONTH(A1)
```

Use:

Extracts **month number** (1–12).

6. YEAR Function

Formula:

```
=YEAR(A1)
```

Use:

Extracts **year**.

7. DATEDIF Function (Very Important)

Formula:

```
=DATEDIF(start_date, end_date, "d")
```

Use:

Finds difference between two dates.

Common Units:

Unit	Meaning
"d"	Total days
"m"	Total months
"y"	Total years

Example (Age):

```
=DATEDIF(A1, TODAY(), "Y")
```

8. EDATE Function

Formula:

```
=EDATE(A1, 3)
```

Use:

Adds or subtracts **months**.

Useful for EMI, subscription dates.

9. EOMONTH Function

Formula:

=EOMONTH (A1, 0)

Use:

Returns **last day of the month**.

10. WEEKDAY Function

Formula:

=WEEKDAY (A1)

Use:

Returns **day number** of the week.

Used in attendance & shift planning.

11. WEEKNUM Function

Formula:

=WEEKNUM (A1)

Use:

Returns **week number** of the year.

12. WORKDAY Function

Formula:

=WORKDAY (start_date, days)

Example:

=WORKDAY (A1, 10)

Use:

Returns date after **working days** (excludes weekends).

13. NETWORKDAYS Function (Very Important)

Formula:

```
=NETWORKDAYS (start_date, end_date)
```

Use:

Counts **working days** between two dates.

Used in HR & project management.

14. TEXT Function (Date Formatting)

Formula:

```
=TEXT (A1, "dd-mm-yyyy")
```

Use:

Converts date into **text format**.

15. ISDATE (Using ISNUMBER)

Formula:

```
=ISNUMBER (A1)
```

Use:

Checks whether value is a **valid date**.

Dates are stored as numbers in Excel.

16. DATEVALUE Function

Formula:

```
=DATEVALUE (A1)
```

Use:

Converts **text date** into real date.

17. TIME & HOUR (Basic Time)

Formula:

```
=HOUR(NOW())
```

Use:

Extracts hour from time.

Summary Table (Quick Revision)

Function	Use
TODAY	Current date
NOW	Date & time
DATE	Create date
DAY	Day from date
MONTH	Month from date
YEAR	Year from date
DATEDIF	Date difference
EDATE	Add months
EOMONTH	Month end
WEEKDAY	Day number
WEEKNUM	Week number
WORKDAY	Working date
NETWORKDAYS	Working days
TEXT	Date format
DATEVALUE	Text to date

SUM & COUNT Functions

SUM Function

The **SUM** function adds all **numeric values** in a selected range.

Syntax

```
=SUM(number1, [number2], ...)
```

Example

```
=SUM(A1:A10)
```

Explanation

Adds all numeric values present in cells **A1 to A10**.

Key Points

- Adds numbers only
- Ignores text and blank cells
- Used for total marks, total sales, total amount, etc.

SUMIF Function

The **SUMIF** function adds numbers that meet **one condition**.

Syntax

```
=SUMIF(range, criteria, [sum_range])
```

Example 1

```
=SUMIF(A1:A10, "Apple", B1:B10)
```

Explanation

Adds values from **B1:B10** where corresponding cells in **A1:A10** contain "Apple".

Example 2

```
=SUMIF(B1:B20, ">50")
```

Explanation

Adds all values greater than 50.

Key Points

- Works with **single condition**
- Condition can be text, number, or comparison
- Very useful in billing and sales reports

SUMIFS Function

The **SUMIFS** function adds values based on **multiple conditions**.

Syntax

```
=SUMIFS(sum_range,
        criteria_range1, criterial,
        criteria_range2, criteria2, ...)
```

Example

```
=SUMIFS(C1:C20, A1:A20, "Delhi", B1:B20, ">10000")
```

Explanation

Adds values from **C1:C20** where:

- City is "Delhi"
- Amount is greater than 10000

Key Points

- Supports **multiple conditions**
- All conditions must be true
- Used in advanced data analysis

COUNT Functions

COUNT Function

The **COUNT** function counts cells containing **numeric values**.

Syntax

```
=COUNT(value1, [value2], ...)
```

Example

```
=COUNT(A1:A10)
```

Explanation

Counts how many cells in **A1 to A10** contain numbers.

Key Points

- Counts numbers only
- Ignores text and blanks
- Common in exam result analysis

COUNTIF Function

The **COUNTIF** function counts cells that meet **one condition**.

Syntax

```
=COUNTIF(range, criteria)
```

Example 1

```
=COUNTIF(B1:B20, ">60")
```

Explanation

Counts values greater than 60.

Example 2

```
=COUNTIF(A1:A20, "Passed")
```

Explanation

Counts how many cells contain the word "Passed".

Key Points

- Used for **single condition counting**
- Works with text and numbers

COUNTIFS Function

The **COUNTIFS** function counts cells that meet **multiple conditions**.

Syntax

```
=COUNTIFS(criteria_range1, criterial,  
          criteria_range2, criteria2, ...)
```

Example

```
=COUNTIFS(A1:A20, "Male", B1:B20, ">70")
```

Explanation

Counts records where:

- Gender is "Male"
- Marks are greater than 70

Key Points

- Used for **multiple conditions**
- All conditions must be satisfied

QUICK COMPARISON

Function	Purpose
SUM	Adds numbers
SUMIF	Adds with one condition
SUMIFS	Adds with multiple conditions
COUNT	Counts numbers
COUNTIF	Counts with one condition
COUNTIFS	Counts with multiple conditions

Conditional Formatting in Excel

Conditional Formatting is an Excel feature that **automatically changes the appearance of cells** (color, font, icons, bars) **based on rules or conditions**.

It helps you **analyze data visually** without changing the actual values.

Why Use Conditional Formatting?

- Highlight important data
- Find duplicates or errors
- Compare values easily
- Improve data readability
- Save time in analysis

1. Highlight Cells Rules

Used to format cells based on comparisons.

- Greater Than
- Less Than
- Between
- Equal To
- Text that Contains
- A Date Occurring
- Duplicate Values

Example:

Highlight marks **greater than 75** in green color.

2. Top / Bottom Rules

Used to find extreme values.

- Top 10 Items
- Top 10%
- Bottom 10 Items
- Bottom 10%
- Above Average
- Below Average

Example:

Highlight top 5 sales values.

3. Data Bars

- Adds **horizontal bars inside cells**
- Bar length depends on value size
- Useful for quick comparisons

4. Color Scales

- Uses **two or three colors**
- Shows low, medium, and high values
- Common in heat maps

5. Icon Sets

- Uses icons like ✓ ✗ ⚡
- Based on value ranges
- Commonly used in performance reports

6. Custom Formula-Based Formatting

- Uses formulas for advanced rules
- Example: =A1>100

Manage Conditional Formatting Rules

- Home → Conditional Formatting → **Manage Rules**
- Edit, delete, or change priority of rules

Advantages

- ✓ No formula changes
- ✓ Easy to apply
- ✓ Visual data analysis
- ✓ Dynamic (auto updates)

Limitations

- ✓ Too many rules slow Excel
- ✓ Can confuse if overused

What is a Macro in Excel?

A Macro is a **recorded or written set of instructions** that **automates repetitive tasks** in Excel using **VBA (Visual Basic for Applications)**.

Why Use Macros?

- Automate repetitive work
- Save time and effort
- Reduce human errors
- Perform complex operations in one click

Examples of Tasks Done by Macros

- Formatting reports automatically
- Data cleaning
- Creating charts

- Copy-paste operations
- Generating monthly reports

How to Create a Macro (Recording Method)

1. Go to **View → Macros → Record Macro**
2. Give a macro name
3. Perform required actions
4. Click **Stop Recording**

Excel automatically creates VBA code.

How to Run a Macro

- View → Macros → View Macros → Run
OR
- Assign macro to a **button or shortcut key**

Macro File Extension

- Normal Excel file: `.xlsx`
- Macro-enabled file: `.xlsm`