

How to separate date and time in Excel with example

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Introduction: Why Separate Date and Time in Excel?

Working with combined **Excel** date and time stamps is a frequent requirement in data analysis, particularly when dealing with imported logs, transactional databases, or time-series data. However, having the date and time bundled into a single cell often presents analytical challenges. For instance, tasks such as grouping data by day, calculating durations, or applying time-based filters necessitate the isolation of these two components. This process allows for cleaner manipulation and more efficient, precise reporting.

The image below illustrates a typical situation where a single column contains merged datetime information. The objective is to efficiently parse this combined data into two distinct, usable columns: one dedicated solely to the date and another capturing only the corresponding time. Fortunately, the robust formula capabilities within **Excel** provide straightforward methods to achieve this separation accurately.

	A	B	C	D	E
1	Timestamp	Date	Time		
2	1/1/2023 4:15 AM	1/1/2023	4:15:00 AM		
3	1/4/2023 2:19 AM	1/4/2023	2:19:00 AM		
4	2/15/2023 10:15 AM	2/15/2023	10:15:00 AM		
5	3/22/2023 12:14 PM	3/22/2023	12:14:00 PM		
6	4/1/2023 5:19 PM	4/1/2023	5:19:00 PM		
7	4/3/2023 6:17 PM	4/3/2023	6:17:00 PM		
8	4/15/2023 10:19 PM	4/15/2023	10:19:00 PM		
9	6/18/2023 4:13 AM	6/18/2023	4:13:00 AM		
10	7/1/2023 3:19 AM	7/1/2023	3:19:00 AM		
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This comprehensive guide will detail a powerful technique using standard **Excel** functions. The foundation of this method rests upon understanding how Excel internally manages and stores datetime information, which is the key to successfully separating these integrated values.

Understanding Excel's Serial Date System

To successfully separate date and time, it is vital to first grasp how **Excel** processes these values. Excel does not store dates and times as simple text strings; instead, it uses a system known as the Serial Date System. Under this system, every date and time is converted into a single decimal **numeric value**.

In this **numeric value**, the **date** component is represented by the integer (whole number) part. This integer counts the number of days that have passed since January 1, 1900. Conversely, the **time** component is represented by the fractional part (the decimal portion). This fraction signifies the proportion of a 24-hour day that has elapsed. For example, a datetime entry like "1/1/2023 4:15 AM" might be stored internally as **44927.177**. Here, 44927 is the date, and .177 is the time.

Practical Example: Preparing the Dataset

For this demonstration, we assume we have a column of datetime values in column A, beginning at cell A2. Our objective is to generate two new columns: Column B for the extracted date and Column C for the extracted time.

The initial dataset, where the datetime stamps are consolidated in Column A, appears as follows:

	A	B	C	D	E
1	Timestamp				
2	1/1/2023 4:15 AM				
3	1/4/2023 2:19 AM				
4	2/15/2023 10:15 AM				
5	3/22/2023 12:14 PM				
6	4/1/2023 5:19 PM				
7	4/3/2023 6:17 PM				
8	4/15/2023 10:19 PM				
9	6/18/2023 4:13 AM				
10	7/1/2023 3:19 AM				
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We will utilize two primary formulas. First, we will use the **INT function** to isolate the date component. Second, we will use simple subtraction to derive the time component from the residual fractional value.

Method 1: Extracting the Date Component Using the INT Function

The most efficient method for isolating the date relies on the **INT function** (Integer). Since the date is stored as the whole number part of the serial date value, applying the INT function effectively rounds the number down to the nearest integer, thereby discarding the time fraction entirely.

To begin, select cell **B2**, which is designated for the date corresponding to the datetime stamp in **A2**. Enter the following concise formula:

=INT(A2)

This command directs Excel to evaluate the full datetime value in A2 (e.g., 44927.177) and return only the whole number (44927). Once the formula is confirmed, you can easily apply it to the entire dataset by clicking and dragging the fill handle located at the bottom right corner of cell B2 down to the last row of your data.

	A	B	C	D
1	Timestamp	Date		
2	1/1/2023 4:15 AM	1/1/2023		
3	1/4/2023 2:19 AM	1/4/2023		
4	2/15/2023 10:15 AM	2/15/2023		
5	3/22/2023 12:14 PM	3/22/2023		
6	4/1/2023 5:19 PM	4/1/2023		
7	4/3/2023 6:17 PM	4/3/2023		
8	4/15/2023 10:19 PM	4/15/2023		
9	6/18/2023 4:13 AM	6/18/2023		
10	7/1/2023 3:19 AM	7/1/2023		
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Column B now contains the pure date component for every entry. If your cells were originally

formatted as General, these values might initially appear as large integers. However, due to Excel's contextual awareness, they often automatically display as dates (e.g., 1/1/2023). If they still appear as numbers, you simply need to apply a Date **Number Format**.

Method 2: Isolating the Time Component via Subtraction

With the date component now successfully isolated in Column B, extracting the time component becomes a straightforward arithmetical operation. Since the original cell A2 contains the total serial number (Date + Time), and cell B2 contains only the Date, subtracting B2 from A2 will yield only the remaining fractional part, which represents the time.

To execute this step, select cell **C2**, where the extracted time will be displayed. Input the following subtraction formula:

=A2-B2

After entering the formula, drag the fill handle down across the entire range of data. The resulting outputs in Column C will initially be displayed as decimal fractions (e.g., 0.177). It is crucial to remember that this decimal represents the correct time value--it simply needs visual formatting to be recognizable as hours, minutes, and seconds.

C2			$\times$	$\checkmark$	f_x	=A2-B2
	A	B	C	D	E	
1	Timestamp	Date	Time			
2	1/1/2023 4:15 AM	1/1/2023	0.1770833			
3	1/4/2023 2:19 AM	1/4/2023	0.0965278			
4	2/15/2023 10:15 AM	2/15/2023	0.4270833			
5	3/22/2023 12:14 PM	3/22/2023	0.5097222			
6	4/1/2023 5:19 PM	4/1/2023	0.7215278			
7	4/3/2023 6:17 PM	4/3/2023	0.7618056			
8	4/15/2023 10:19 PM	4/15/2023	0.9298611			
9	6/18/2023 4:13 AM	6/18/2023	0.1756944			
10	7/1/2023 3:19 AM	7/1/2023	0.1381944			
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Formatting the Output as Time

Although the calculated decimals in Column C are mathematically correct, they are not presented in a user-friendly time format. The final step in this process is to change the cell formatting so that these fractional numbers are displayed as standardized time stamps.

Step-by-Step Formatting Instructions

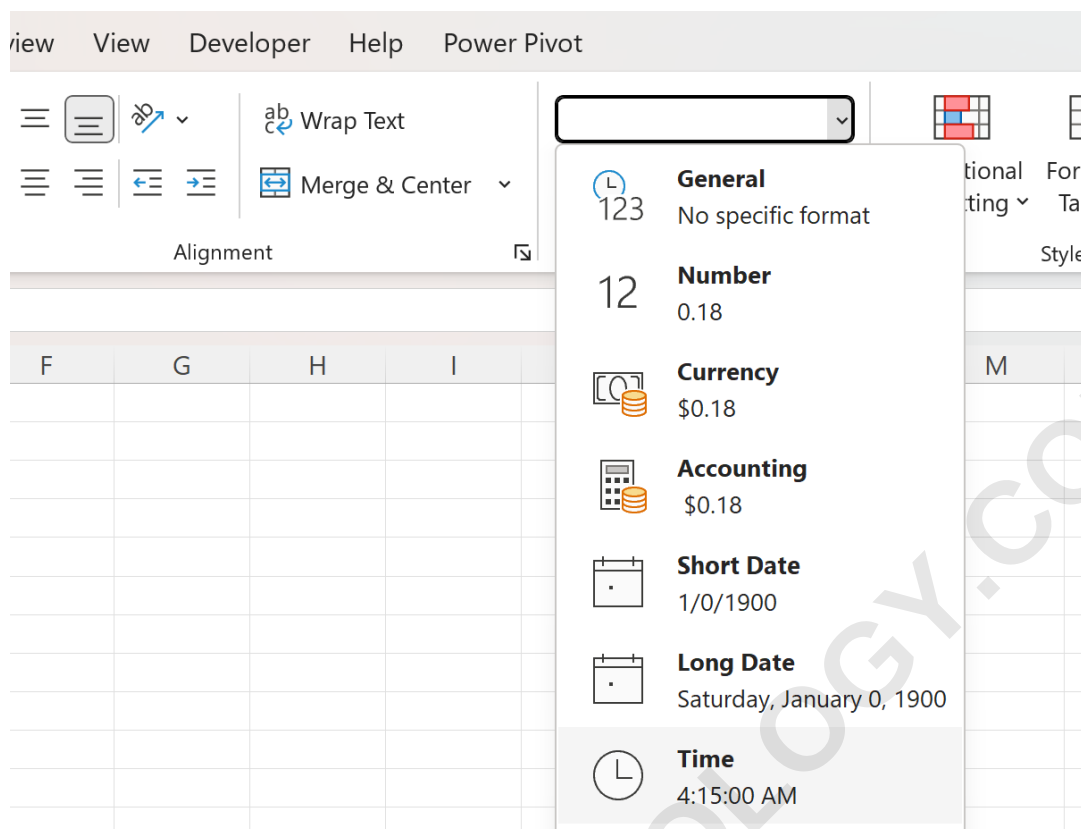
Select Data Range: Highlight the entire column of calculated time values (e.g., **C2:C10**).

Navigate to Home Tab: Ensure you are on the **Home** tab of the Excel ribbon.

Access Number Format Group: Locate the Number group within the **Home** tab.

Apply Time Format: Use the **Number Format** dropdown menu (which likely currently displays "General" or "Number") and select the **Time** option. This action instantaneously converts the decimals into a time display format.

The image below highlights the location of the relevant formatting tools required on the Home tab:



Reviewing the Final Separated Data

Once the time formatting is applied, Column C will display accurate, readable time values (e.g., 4:15 AM). This completes the transformation, successfully segmenting the combined datetime stamp into its constituent parts.

The final output demonstrates the successful separation, providing two clean columns that are ready for independent analysis or reporting:

	A	B	C	D	E
1	Timestamp	Date	Time		
2	1/1/2023 4:15 AM	1/1/2023	4:15:00 AM		
3	1/4/2023 2:19 AM	1/4/2023	2:19:00 AM		
4	2/15/2023 10:15 AM	2/15/2023	10:15:00 AM		
5	3/22/2023 12:14 PM	3/22/2023	12:14:00 PM		
6	4/1/2023 5:19 PM	4/1/2023	5:19:00 PM		
7	4/3/2023 6:17 PM	4/3/2023	6:17:00 PM		
8	4/15/2023 10:19 PM	4/15/2023	10:19:00 PM		
9	6/18/2023 4:13 AM	6/18/2023	4:13:00 AM		
10	7/1/2023 3:19 AM	7/1/2023	3:19:00 AM		
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By leveraging the inherent structure of Excel's **numeric value** system and employing the appropriate mathematical functions, we ensure that both the date and time components are stored as true date and time data types, which is essential for accurate calculations and filtering operations moving forward.

Summary of Core Formulas

This technique relies on two fundamental formulas based on the cell A2 containing the combined datetime value:

Formula for Date Extraction (in B2): Utilizes the **INT function** to isolate the whole number (date):

=INT(A2)

Formula for Time Extraction (in C2): Uses subtraction to isolate the decimal fraction (time):

=A2-B2