

How to Split Date and Time into Separate Columns in Excel

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The Importance of Separating Date and Time Components in Excel

In the realm of **data management** and **quantitative analysis**, precision is paramount. Often, datasets imported from external databases or software logs arrive with **date and time** values concatenated into a single cell. While this format provides a comprehensive snapshot of a specific moment, it frequently complicates the process of **data filtering**, **sorting**, and **reporting**. To perform granular operations, such as calculating daily averages or identifying peak transaction hours, one must understand how to isolate these components effectively within a **spreadsheet** environment.

The process of separating date and time in **Microsoft Excel** involves leveraging built-in **functions** and sophisticated formatting tools. By isolating the date, users can group information by year, month, or quarter, which is essential for **business intelligence** and long-term trend forecasting. Conversely, isolating the time allows for a deep dive into **time-series analysis**, enabling analysts to observe patterns throughout a single 24-hour cycle. This structural refinement transforms raw data into a more versatile and actionable format.

Furthermore, Excel provides several avenues to achieve this separation, ranging from mathematical formulas to automated features like **Text to Columns**. Selecting the appropriate method depends on whether the user requires a dynamic solution--where changes in the source data reflect immediately in the separated columns--or a static one-time split. This guide will explore the most reliable techniques to ensure your **data cleaning** workflow is both efficient and accurate, maintaining the integrity of your information while enhancing its readability.

Understanding the Excel Date and Time Serial Number System

To master the separation of **temporal data**, one must first grasp how **Excel** interprets these values internally. Excel does not see "January 1, 2023, 12:00 PM" as text; instead, it views it as a **serial number**. In this system, dates are represented by **integers**, where the number 1 corresponds to January 1, 1900. Every subsequent day increments this value by one. Consequently, when you see a date in a cell, Excel is actually storing a large whole number and applying a visual **date format** over it.

Time, on the other hand, is represented as a decimal fraction of a 24-hour day. For instance, 12:00 PM is exactly halfway through the day, so it is stored as 0.5. A full **datetime** value is simply the sum of the date integer and the time decimal. For example, the value 44927.177 represents a specific date (44927 days after the starting point) and a specific time (0.177 of a day). Understanding this relationship is the "secret sauce" to using mathematical **formulas** to split these values apart with surgical precision.

By recognizing that a datetime is essentially a **floating-point number**, you can use rounding or

subtraction functions to isolate the parts you need. This internal logic is what makes **Excel** such a powerful tool for **data analysis**. Once you stop viewing the cell as a string of characters and start viewing it as a number, the various extraction methods--such as the **INT function** or the **MOD function**--become much more intuitive and easier to apply to complex datasets.

Separate Date and Time in Excel (With Example)

In many professional scenarios, you may encounter a requirement to split a combined datetime value into two distinct cells to facilitate better data organization and visualization:

	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		
11					
12					
13					
14					
15					
16					
17					

Fortunately, this transition is remarkably straightforward. The following detailed example

demonstrates how to execute this process using standard Excel functions and cell formatting techniques.

Example: Step-by-Step Separation of Date and Time

Suppose your worksheet contains a column of combined datetime entries that require reformatting for a report. Our goal is to maintain the original data in Column A while populating Column B with the date and Column C with the time:

	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				
11					
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To begin this transformation, we will utilize

mathematical logic to strip away the time component from the date. This ensures that the resulting value is a pure date without any hidden decimal increments.

Extracting the Date Using the INT Function

To isolate only the date portion from the combined value in the first cell, enter the following INT function into cell B2:

=INT(A2)

Once the formula is entered, you can use the fill handle to drag the formula down to the remaining cells in column B. This action applies the extraction logic to the entire dataset consistently:

B2 ▾ ✕ ✓ <i>fx</i> =INT(A2)				
	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		
11				
12				
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16				

Column B now exclusively reflects the date component for each record. The logic behind using INT lies in its ability to round a number down to the nearest integer. As discussed earlier, Excel stores dates as whole numbers and times as decimals. For instance, the timestamp 1/1/2023 4:15 AM is internally recorded as 44927.177.

The INT function discards the decimal portion (.177) and returns only the integer 44927. When the cell is set to a date format, Excel interprets this integer correctly as 1/1/2023. This method is highly reliable because it

removes the time component entirely rather than just hiding it from view via formatting.

Isolating the Time via Subtraction

Now that we have successfully isolated the date, we can determine the time by calculating the difference between the original datetime and the newly extracted date. Type the following formula into cell C2 to isolate the time component:

=A2-B2

Apply this formula to the rest of the column by dragging the fill handle downward. This simple subtraction removes the whole number (the date) from the combined value, leaving only the decimal remainder (the time):

C2					
	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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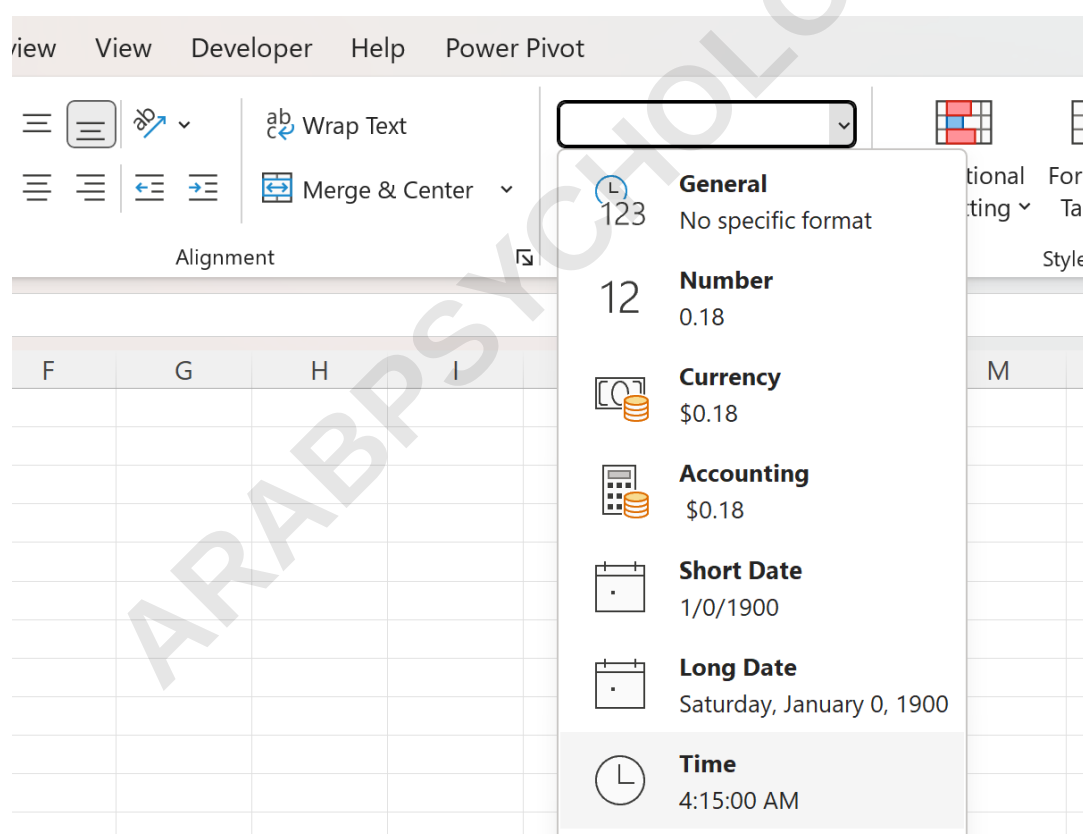
Initially, you may notice that the results in Column C appear as decimal values (e.g., 0.177). Do not be alarmed; this is simply the raw numerical representation of time before visualization rules are applied.

In many cases, users prefer using the MOD function for this task. The formula `=MOD(A2, 1)` performs a similar action by returning the remainder after dividing the datetime by 1. Since every date is a multiple of 1, the remainder is always the fractional time. Both methods

are mathematically sound and will yield identical results for your data processing needs.

Applying Final Formatting to Time Values

To convert these raw decimals into a human-readable format, you must adjust the number format settings. Highlight the range C2:C10, navigate to the Home tab on the ribbon, and locate the Number Format group. Click the dropdown menu and select Time:



Upon selecting this option, the decimals in column C will instantly transform into standard clock time (e.g.,

4:15:00 AM). This step is crucial for ensuring that the user interface presents the data in a meaningful way for end-users and stakeholders:

	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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You have now successfully parsed the combined datetime values into two independent columns. This data structure is significantly more effective for creating **PivotTables**, charts, and complex statistical models within your workbook.

Alternative Method: Using the Text to Columns Wizard

While formulas are excellent for dynamic updates, the

Text to Columns feature is a fantastic tool for a quick, static split of your data. This utility is found under the Data tab and is particularly useful when dealing with large volumes of legacy data that does not require ongoing formula calculations. To use this, select the column containing your datetimes and initiate the wizard.

Choose the Delimited option and click next. In the delimiters section, check the "Space" box, as most datetime strings are separated by a space between the date and the time. The preview window will show a vertical line dividing the two components. Proceed through the wizard to specify the destination cells, ensuring you do not overwrite your original data unless intended.

The primary advantage of this workflow is its speed and simplicity. However, keep in mind that unlike the INT and subtraction method, Text to Columns is a "one-and-done" operation. If the source data in Column A changes, the values in the separated columns will not update automatically. Therefore, it is best reserved for finalized datasets or quick ad hoc analysis.

Advanced Tips for Managing Datetime Data Integrity

When working with large datasets, it is common to encounter errors where dates are stored as text rather than actual numerical values. If your INT formula returns a #VALUE! error, it likely means Excel does not recognize the cell content as a valid date. In such instances, you may need to use the DATEVALUE or TIMEVALUE functions to convert the text strings into serial numbers before attempting to separate them.

Another best practice involves maintaining metadata. Always keep your original datetime column intact until you are certain that the separated data is accurate. Data validation checks, such as ensuring the sum of your new date and time columns equals the original value, can prevent costly errors in financial modeling or scientific research.

Finally, consider the ISO 8601 standard for date and time representation if you plan to export your data to other software. Excel's flexibility allows you to customize formats (like YYYY-MM-DD) easily, ensuring your interoperability with databases and programming languages like Python or R remains seamless and

professional.

Further Learning and Excel Optimization

Mastering the separation of date and time is just the beginning of proficient spreadsheet management. To further enhance your skills, you might explore how to calculate the difference between two timestamps to determine elapsed time, or how to use conditional formatting to highlight specific dates or times of interest.

By refining your data entry and processing habits, you reduce the likelihood of "dirty data" cluttering your analysis. Utilizing these techniques ensures that your workbooks remain scalable, readable, and ready for high-level data mining activities. For more information on optimizing your workflow, consult the official Microsoft Support documentation.

The following tutorials explain how to perform other common operations in Excel: