

How to Extract Minutes from a Date & Time in Excel

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Extracting time components, specifically the minutes, from a full datetime value

is a fundamental operation when performing

data analysis

within

Excel.

This process involves isolating the specific minute component from the larger numerical representation that

Excel

uses to store date and time information internally. By isolating this precise unit of time, analysts can gain crucial insights into the temporal characteristics of their datasets.

The primary tool for this extraction is the built-in

MINUTE function,

a specialized utility designed to simplify the manipulation of time-based data within the spreadsheet

environment. When applied to a cell containing a valid time or datetime format, the

MINUTE function

returns an integer ranging from 0 (the top of the hour) to 59. This extraction capability is invaluable for tasks requiring high temporal granularity, such as measuring the duration of events, calculating process cycle times, or analyzing the frequency distribution of occurrences within a specific 60-second window.

Effective utilization of this feature allows users to efficiently organize and transform complex time data into easily digestible numerical metrics. For instance, rather than sorting records by the full date and time stamp, one might sort data based purely on the minute of the hour, revealing cyclical patterns or bottlenecks that occur consistently at certain points in time. Understanding and applying the

MINUTE function

is therefore a key step towards performing sophisticated time-series

data analysis

and making informed, data-driven decisions based on when events are recorded.

Excel: Extract Minutes from Datetime

The MINUTE Function: Syntax and Core Application

The most straightforward method to retrieve the minute component from any

datetime value

in Excel involves the use of the powerful built-in

MINUTE function. This function requires only one argument: the serial number or the reference to the cell containing the time or datetime stamp from which the minute needs to be extracted. Its simplicity makes it highly efficient for processing large datasets quickly and accurately.

The official syntax for the function is concise: **=MINUTE(serial_number)**. The term "serial_number" refers either to a cell reference (such as A2) or the actual decimal representation of the time. When utilizing a cell reference,

Excel

automatically converts the displayed datetime format into its underlying serial number for calculation. For example, to isolate the minutes from a complete datetime residing in cell A2, the formula is structured as follows:

=MINUTE(A2)

This formula will instantly return an integer representing the minute of the hour, effectively stripping away the date, hour, and second components, leaving only the required minute value. Understanding this basic structure is the foundation for performing more complex time extractions and manipulations.

Step-by-Step Example: Extracting Minutes from Sales Timestamps

To illustrate the practical application of the MINUTE function,

consider a typical business scenario involving a dataset that tracks the time and date of sales transactions. Analyzing the minute in which a transaction occurs can be vital for operational planning, such as scheduling staff or optimizing server load. Suppose we have a column containing detailed sales records, including the exact

datetime value

for each sale, as shown in the initial dataset below.

The following example shows how to apply this formula in practice to a column of raw datetime data. Our objective is to populate a new column (Column C) solely with the minute component of the transactions listed in Column A. This extraction prepares the data for subsequent statistical analysis, perhaps determining peak minute-by-minute sales activity.

Suppose we have the following dataset in

Excel

that shows the number of sales made during various dates and times for a hypothetical company:

	A	B	C	D	E
1	Datetime	Sales			
2	1/1/2023 4:14:59	14			
3	1/2/2023 10:15:01	19			
4	1/2/2023 8:14:09	22			
5	1/2/2023 23:34:45	24			
6	1/3/2023 12:14:50	38			
7	1/4/2023 1:15:24	10			
8	1/5/2023 5:27:48	14			
9	1/5/2023 5:38:35	13			
10	1/6/2023 16:45:58	18			
11					
12					
13					
14					
15					

In order to achieve the desired extraction for the entire dataset, we begin by targeting the first cell containing the datetime value, which is cell **A2**. **We then input the formula into the corresponding output cell, C2, ensuring that the function correctly references the necessary input cell.**

To perform this operation, we type the following formula into cell **C2**:

=MINUTE(A2)

Automating Extraction Across the Dataset

Once the formula is correctly entered into the first cell (C2), the power of the spreadsheet

environment becomes evident through automation. Instead of manually typing the formula for every single row,

Excel

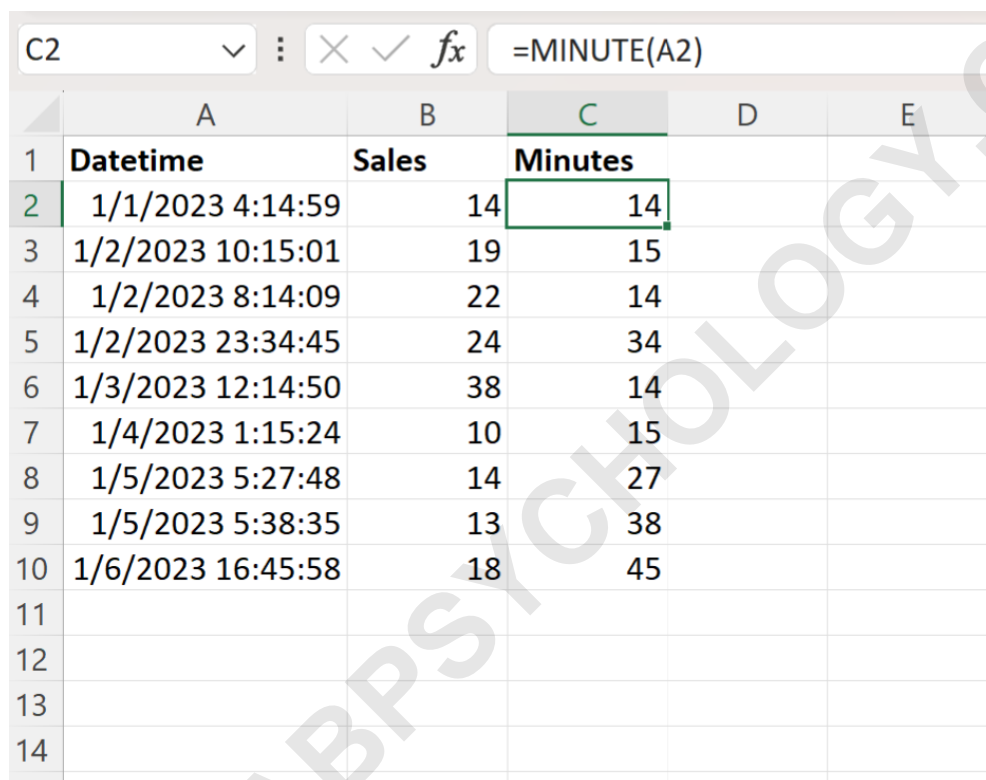
allows users to employ the fill handle--the small square at the bottom-right corner of the selected cell--to quickly copy the formula down the column. As the formula is dragged down, Excel automatically adjusts the cell reference (A2 becomes A3, then A4, and so on), applying the extraction logic sequentially to every transaction timestamp.

We can then click and drag this formula down to each remaining cell in column C, completing the data transformation process instantly. This feature, known as relative referencing, is crucial for efficient

data analysis

and manipulation of large volumes of records, saving significant time compared to manual entry.

The resulting column, Column C, now provides a clean, numeric representation of the minute of the hour for every sales record, successfully fulfilling the extraction objective. The output looks as follows:



	A	B	C	D	E
1	Datetime	Sales	Minutes		
2	1/1/2023 4:14:59	14	14		
3	1/2/2023 10:15:01	19	15		
4	1/2/2023 8:14:09	22	14		
5	1/2/2023 23:34:45	24	34		
6	1/3/2023 12:14:50	38	14		
7	1/4/2023 1:15:24	10	15		
8	1/5/2023 5:27:48	14	27		
9	1/5/2023 5:38:35	13	38		
10	1/6/2023 16:45:58	18	45		
11					
12					
13					
14					

Column C now displays only the minute value (0 through 59) extracted from each

datetime value

in column A. This extracted data can now be easily used for pivot tables, frequency counts, and other statistical methodologies.

High-Precision Timing: Extracting Minutes and Seconds

While extracting only the minute is sufficient for many analyses, there are scenarios, particularly in high-frequency trading, scientific measurements, or complex system logging, where capturing the seconds alongside the minutes is essential for maximum temporal precision. Achieving this combined output requires a slightly more complex formula that leverages multiple time functions

and a technique called concatenation.

If the goal is to present the output in a standard time format (MM:SS), we must first extract both components separately. We use the

MINUTE function

for the minutes and the

SECOND function

for the seconds. These two numerical results are then joined using the **& operator, inserting a colon (":") between them to format the resulting string correctly.**

To ensure the seconds value always displays with two digits (e.g., 05 instead of 5), which is critical for consistent time formatting, we must wrap the

SECOND function

within the

TEXT function. The TEXT function allows us to specify the exact output format, using the format code **"00" to enforce the display of leading zeros. The combined formula is written as follows:**

=MINUTE(A2)&":"&TEXT(SECOND(A2), "00")

The following screenshot demonstrates how to use this advanced formula to extract and format minutes and seconds together:

	A	B	C	D	E
1	Datetime	Sales	Minutes	Minutes & Seconds	
2	1/1/2023 4:14:59	14	14	14:59	
3	1/2/2023 10:15:01	19	15	15:01	
4	1/2/2023 8:14:09	22	14	14:09	
5	1/2/2023 23:34:45	24	34	34:45	
6	1/3/2023 12:14:50	38	14	14:50	
7	1/4/2023 1:15:24	10	15	15:24	
8	1/5/2023 5:27:48	14	27	27:48	
9	1/5/2023 5:38:35	13	38	38:35	
10	1/6/2023 16:45:58	18	45	45:58	
11					
12					
13					
14					

Note that in this formula, we successfully employed the **MINUTE** function to extract the minutes, used the **&** symbol to **concatenate** the results, and utilized the **TEXT** function in conjunction with the **SECOND** function to ensure robust, standardized time output.

Alternative Extraction Methods and Formatting Considerations

While the **MINUTE** function is the most direct method, advanced users sometimes choose alternative techniques, particularly when the datetime column is already formatted as a time value (without an associated date). One alternative involves mathematical manipulation, relying on Excel's representation of time as a fraction of a day. For instance, the formula **=ROUNDDOWN(A2*1440, 0) - HOUR(A2)*60** can extract the minute component by converting the time value to total minutes (1440 minutes in a day) and subtracting the minutes contained within the hour component. However, this method is significantly more complex and less readable than the dedicated **MINUTE** function.

Another consideration is the use of the **TEXT** function

alone for both extraction and formatting. If the user only wants the output displayed as a textual representation of the minute, the formula **=TEXT(A2, "nn")** can achieve this. The custom format

code "nn" specifically extracts the minutes and applies leading zeros where necessary. This method is preferred when the extracted value is not required for further mathematical calculations but rather for display purposes, such as generating reports or labels.

It is crucial to understand that using formulas that involve concatenation (like the minute and second extraction example) results in a text string output, not a numeric time value. If subsequent calculations require the result to be treated as a true time, additional steps, such as using the **TIMEVALUE** function or **applying custom number formatting to the original cell, must be implemented. For simple data analysis and grouping, however, the direct numerical output of =MINUTE(A2) is generally the most versatile approach.**

Applications in Time-Series Data Analysis

The ability to precisely extract the minute component of a timestamp is indispensable across various fields that rely on detailed time-series data. In call centers, for example, extracting the minute helps analysts map call volumes throughout the hour, identifying peak 60-second intervals to optimize staffing levels and minimize customer wait times. Similarly, in manufacturing, timing the minute-by-minute progression of an assembly line allows engineers to pinpoint where micro-delays or inefficiencies are occurring, leading to targeted process improvements.

For researchers collecting data on environmental changes or biological processes, the minute stamp is often the necessary level of granularity for detecting short-term trends or rapid responses. By extracting the minute, large datasets can be aggregated and visualized efficiently. Instead of plotting tens of thousands of individual points, analysts can group data by minute and calculate averages or sums, creating much clearer and more meaningful charts.

Furthermore, the extracted minute value serves as a powerful grouping key in pivot tables. By placing the extracted minute column into the "Rows" or "Columns" section of a pivot table, users can instantly calculate aggregated metrics (like total sales or average response time) corresponding to each minute (0 through 59), effectively turning raw operational data into actionable temporal statistics. This level of detail ensures that organizational decisions are based on the actual distribution of events over time, rather than generalized hourly summaries.

Conclusion: Mastering Time Component Functions

Mastering the extraction of time components in Excel, particularly the use of the **MINUTE** function, is a fundamental skill for anyone working extensively with temporal data. This specialized function offers a clean, reliable, and highly efficient mechanism for isolating the 0-59 minute integer from complex datetime stamps, preparing the data for sophisticated analysis. Whether used alone for simple extraction or combined with functions like **SECOND** and **TEXT** for formatted output, the utility of this feature is undeniable.

Beyond minutes and seconds, Excel offers a full suite of time-related functions to extract other components, including **HOUR, DAY, MONTH, and YEAR**. **Proficiency in these functions allows for the complete deconstruction of any datetime value, enabling analysts to filter, sort, and analyze data across any desired temporal window, from microseconds to decades.**

The techniques demonstrated here provide the foundation for powerful time-series data analysis. By efficiently manipulating and organizing data using functions like **MINUTE**, **users can quickly transform raw logs into statistical evidence, enhancing reporting accuracy and providing crucial insights into the precise timing and rhythm of recorded events within a spreadsheet environment.**

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