

Learning to Create Excel Charts: Excluding Blank Cells from Your Data

Authored by
Mohammed looti

October 29, 2025

RECOMMENDED CITATION

Mohammed looti (2025). *Learning to Create Excel Charts: Excluding Blank Cells from Your Data*. PSYCHOLOGICAL STATISTICS. Retrieved from <https://statistics.arabpsychology.com/?p=5403>

Mastering Data Continuity: Handling Blank Cells in Excel Charts

When leveraging [Microsoft Excel](#) for robust data analysis, the creation of informative [charts](#) stands as a foundational requirement for converting raw figures into actionable insights. However, the path to pristine [data visualization](#) is often complicated by the presence of incomplete or imperfect data. A particularly common and disruptive challenge is dealing with [blank cells](#) within the source [dataset](#). These gaps, while accurately reflecting the absence of data, can severely compromise the visual integrity and continuity of a chart, leading to fragmented lines, misleading representations, or obscured trends that hinder effective decision-making.

Understanding how [Excel](#) interprets these empty values is the key to producing professional-grade visualizations. By default, [Excel](#) often treats these blank entries as true gaps, which, while technically correct, can make continuous visualizations like [line charts](#) difficult to interpret. Fortunately, [Excel](#) offers a sophisticated and highly customizable mechanism--the **Hidden and Empty Cells** feature--designed specifically to provide granular control over the visual presentation of missing information. This tool allows analysts to choose the most appropriate way to represent data discontinuities, ensuring the chart reflects the true underlying narrative.

This comprehensive technical guide is meticulously structured to walk you through the precise steps required to create and configure a line chart in [Excel](#), focusing explicitly on how to manage and elegantly ignore [blank cells](#). We will explore the practical implementation of the "Connect data points with line" option, examining the underlying considerations necessary for making informed decisions about how your [visualizations](#) interpret ambiguous or missing data. By mastering this essential technique, you can transform fragmented data series into clear, continuous, and highly compelling charts that maintain their clarity even when faced with real-world data imperfections.

The Analytical Challenge: How Missing Data Impacts Visual Trends

In virtually every complex analytical endeavor, the existence of [blank cells](#) within a [dataset](#) is an inevitable reality. These missing values can arise from numerous sources: system failures during collection, human error during transcription, or simply periods where the measured phenomenon did not occur or was not applicable. For example, in a financial tracking system, a blank entry for a particular day might signify that no transaction took place, or it could mean that the data was lost entirely. Distinguishing between these semantic meanings--zero value versus truly missing value--is critical for accurate analytical representation.

When a range containing these [blank cells](#) is selected for charting, [Excel](#)'s default action is to treat the empty cell as an unknown quantity, resulting in a visible break or gap in the plotted series. While this approach is transparent about the data's incompleteness, it often proves detrimental to the primary goal of the visualization, especially with [line charts](#) which are inherently designed to

illustrate continuous evolution or progression, such as in [time-series data](#). A series of disruptive gaps can make it nearly impossible for the viewer to quickly identify patterns, forecast future trends, or grasp the overall movement of the metric being tracked.

Therefore, before adjusting any chart settings, the analyst must first determine the semantic context of the missing data. Does the absence of a number imply a quantifiable zero, or does it represent an unobserved state that should ideally be estimated based on the surrounding known [data points](#)? The inability of the viewer to infer continuity due to visual fragmentation can lead to significant misinterpretations or require excessive manual effort to mentally bridge the gaps. This is where [Excel's Hidden and Empty Cells](#) feature becomes indispensable. It allows you to impose an interpretive framework on the data gaps, aligning the chart's visual presentation with the analytical meaning of the missing values and ensuring the [data visualization](#) remains coherent and insightful.

Exploring the Hidden and Empty Cells Configuration Options

The **Hidden and Empty Cells** feature is the central control panel for refining how [charts](#) manage data sparsity. Accessed through the "Select Data Source" dialog box, this powerful tool provides three distinct modes for interpreting and displaying [empty cells](#), giving the user precise control over the visual outcome and the underlying analytical assumption applied to the missing values. Choosing the correct setting is paramount to avoiding distortion and maintaining the integrity of the data story you are attempting to tell through your [visualization](#).

The three core options for handling these data discontinuities are:

Show empty cells as: Gaps: This is the default setting in [Excel](#). When employed, the chart explicitly leaves a visible break in the line or area where the source cell is empty. This option is the most transparent and analytically honest choice when the absence of data is significant, should not be estimated, or if the missing period is lengthy. It visually communicates uncertainty, preventing the audience from assuming a continuous trend where the data does not support one.

Show empty cells as: Zero: Selecting this option instructs [Excel](#) to automatically substitute any [blank cell](#) with the numerical value 0. This is appropriate only in specific contexts where the absence of a record genuinely equates to a zero quantity, such as tracking inventory withdrawals or counting errors. Caution must be exercised, as incorrectly applying the zero setting can severely skew the visual trend, dragging the plotted line down to the baseline and misrepresenting the true magnitude or average of the series.

Connect data points with line: This is the focus of our guide and often the most desirable option for time-based trend analysis. When chosen, [Excel](#) bypasses the empty cell and draws a straight line segment directly between the last valid [data point](#) before the gap and the first valid data point after it. Essentially, this option performs simple linear [data interpolation](#), visually bridging the data

gap. It is extremely useful for maintaining the perception of continuity in [time-series data](#) where minor interruptions in data reporting should not visually obstruct the overall flow.

A deep comprehension of these distinctions is crucial for generating accurate and meaningful [charts](#). The choice between a gap, a zero value, or a connected line segment must always be driven by the domain expertise and the specific context of the [dataset](#). The following step-by-step example will demonstrate how the "Connect data points with line" option transforms a fragmented visualization into a smooth, continuous, and highly readable analytical tool.

Step-by-Step Implementation: Bridging Data Gaps with Line Connection

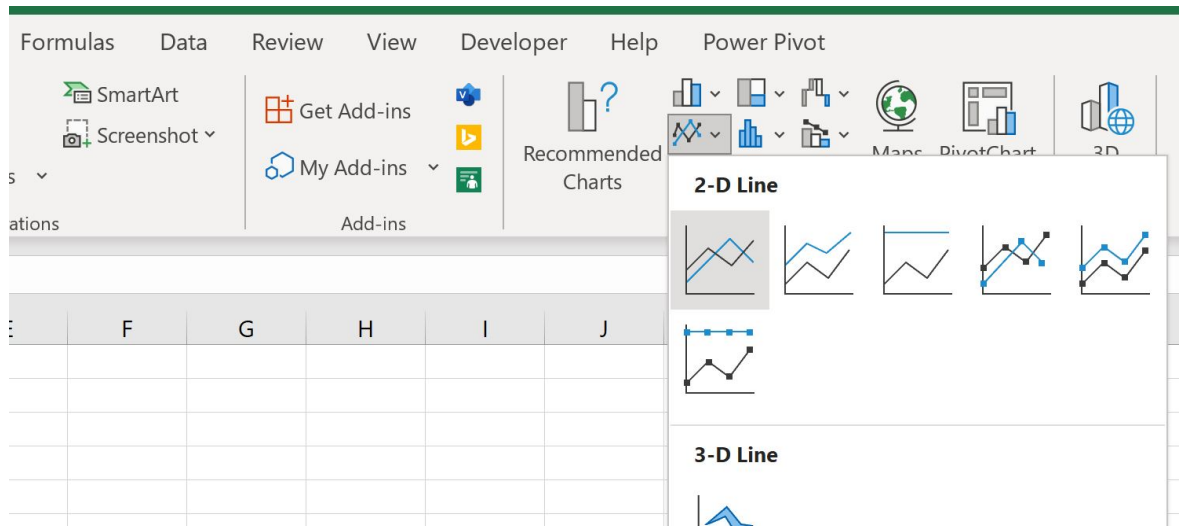
To fully grasp the utility of the "Connect data points with line" feature, we will apply it to a practical scenario involving monthly sales performance data. This hypothetical [dataset](#) is intentionally structured with missing values to illustrate the transformation that occurs when the chart settings are adjusted.

Consider the following monthly sales data, which clearly shows missing entries for two specific months:

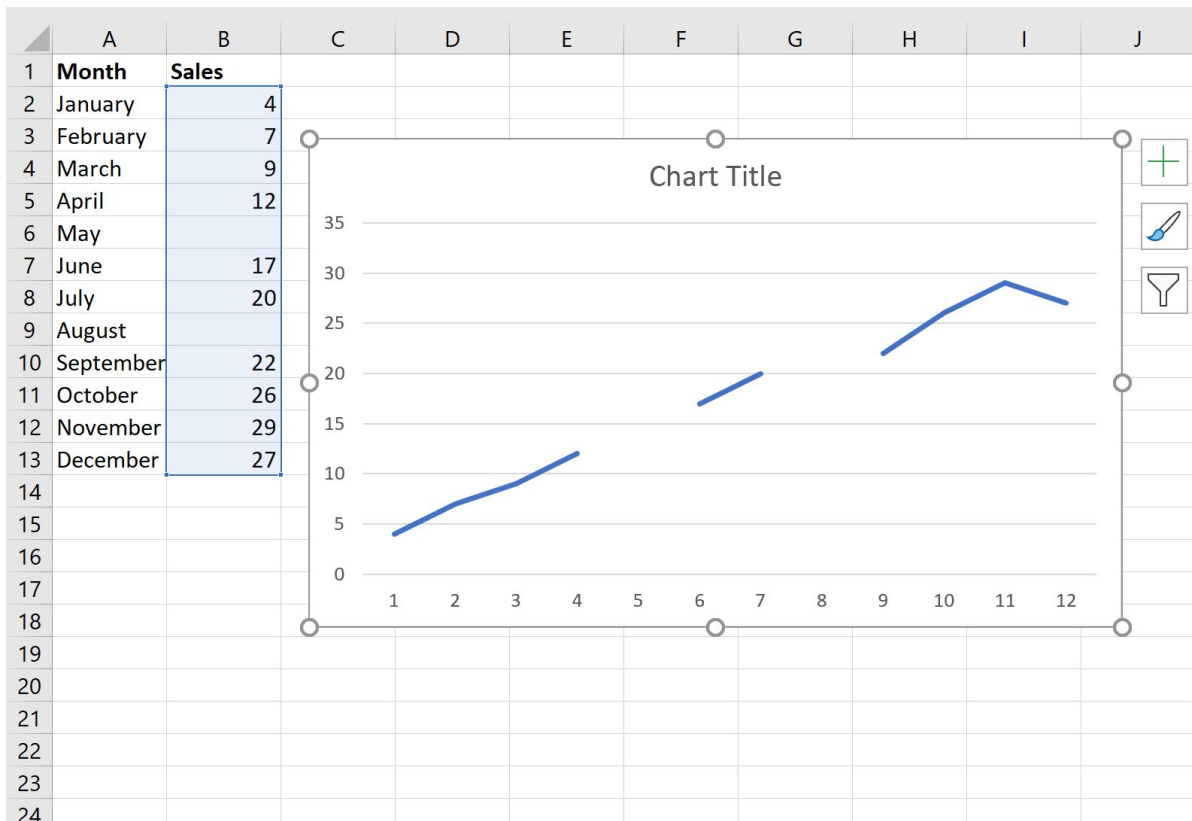
	A	B	C	D	E
1	Month	Sales			
2	January	4			
3	February	7			
4	March	9			
5	April	12			
6	May				
7	June	17			
8	July	20			
9	August				
10	September	22			
11	October	26			
12	November	29			
13	December	27			
14					
15					
16					
17					
18					

Our objective is to generate a [line chart](#) that illustrates the annual sales trend, ensuring that the sales line remains continuous by bridging the gaps caused by the empty cells in May and August. The first step involves creating the initial chart based on the raw data. Highlight the data range

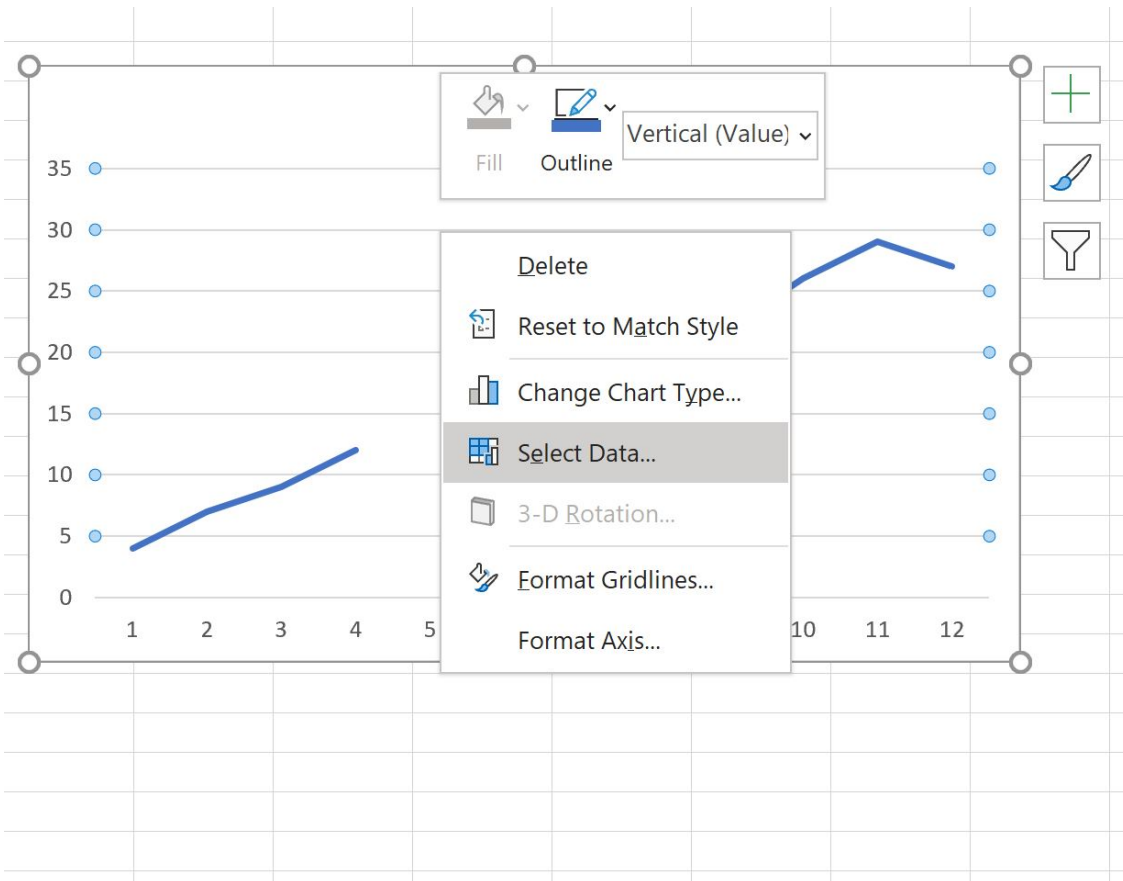
containing the sales figures (e.g., **B2:B13** in this example). Navigate to the **Insert** tab on the Excel ribbon, locate the **Charts** group, and select a 2-D Line chart option. This action will immediately produce a chart, which, using Excel's default settings, will initially display the data gaps.



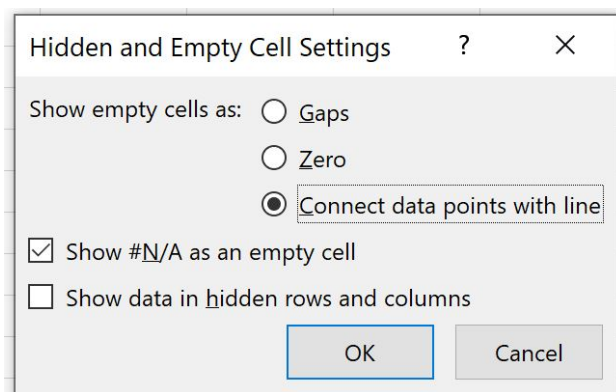
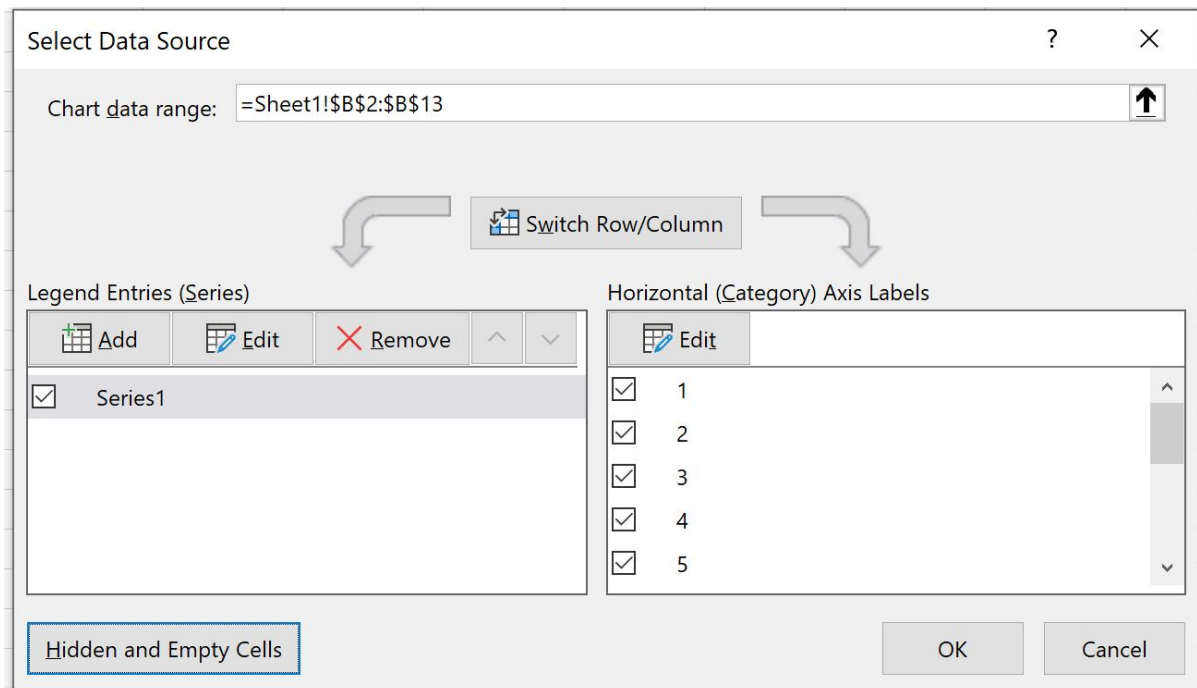
The resulting chart clearly demonstrates the default behavior: the line series exhibits distinct breaks corresponding exactly to the months of May and August, where the [data points](#) are missing. This visual fragmentation, while accurate in reflecting the source data's incompleteness, disrupts the perception of a continuous annual trend.

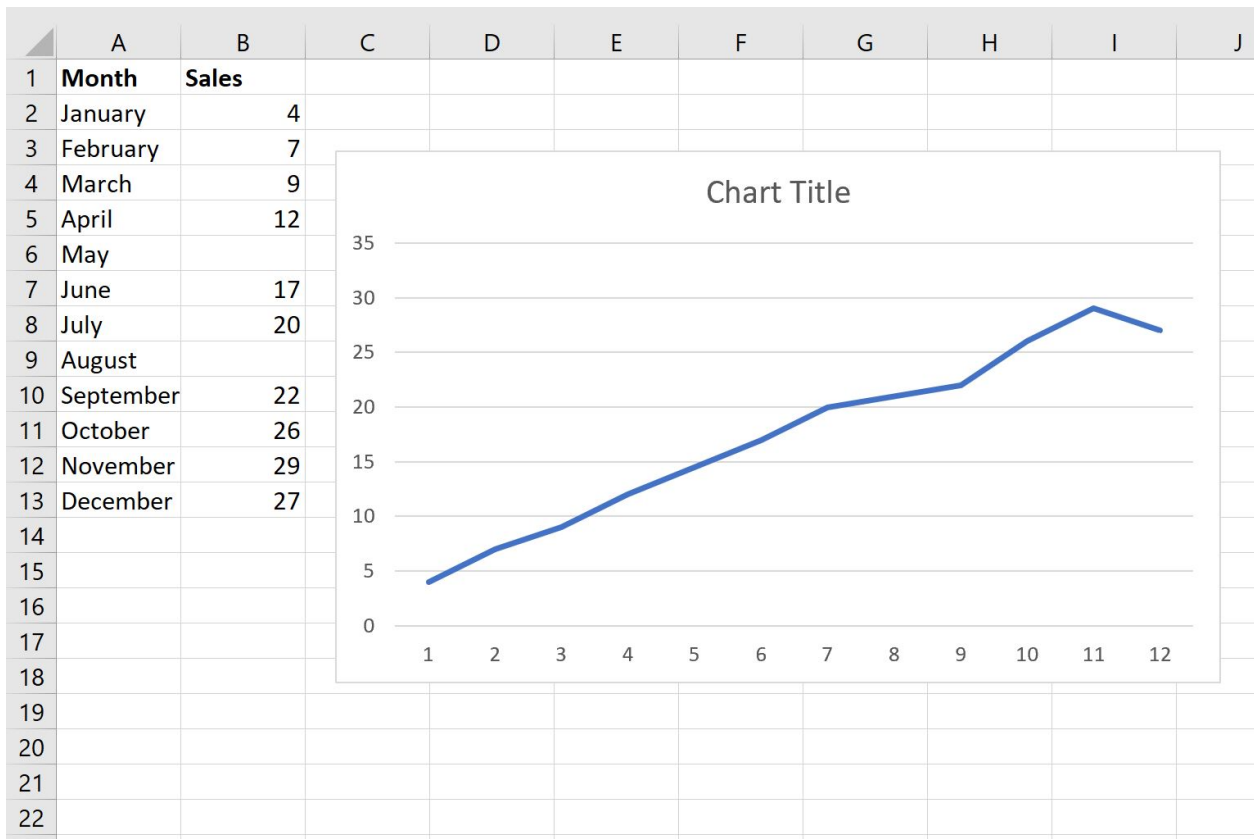


To initiate the gap-filling process, right-click anywhere on the chart area to bring up the context menu, and select the **Select Data** option. This command opens the "Select Data Source" dialog box, which is the gateway to series configuration. Within this dialog, look towards the bottom-left corner and click the **Hidden and Empty Cells** button. This crucial action will launch the specific settings window dedicated to managing data continuity.



In the "Hidden and Empty Cell Settings" window that appears, you will find the three radio button options detailed previously. To achieve a smooth, uninterrupted visualization, select the **Connect data points with line** radio button. Confirm your selection by clicking **OK** to close the settings window, and then click **OK** again on the "Select Data Source" dialog box to finalize and apply the changes to your **chart**. The transformation is immediate: the gaps caused by the **blank cells** are instantly bridged, resulting in a continuous trend line that visually interpolates the missing data path, providing a far clearer view of the overall sales performance trajectory.





Contextual Decision Making: When to Interpolate vs. Show Zero

The choice of how to represent [empty cells](#) is a critical analytical decision, not just a visual formatting preference. Each setting within the **Hidden and Empty Cells** feature carries a fundamental assumption about the nature of the missing data, and selecting the wrong option can severely misrepresent underlying facts or trends presented in your [data visualization](#).

The "Connect data points with line" approach, which utilizes visual [data interpolation](#), is highly effective when dealing with data that is expected to change gradually over time, such as daily temperature readings or market indices. In these scenarios, the assumption that the missing value lies somewhere along a straight line connecting the adjacent known [data points](#) is usually a reasonable approximation. This method ensures that the overarching trend of the [time-series data](#) remains visible and uncluttered by gaps. However, analysts must be cautious; if the missing period is long, or if the data is highly volatile (e.g., stock prices during a crisis), linear interpolation may create a deceptively smooth and inaccurate portrayal of reality. The audience must be aware that the line segment represents an estimation, not observed data.

Conversely, the decision to show [empty cells](#) as zero must be strictly reserved for instances where the missing entry truly denotes a null count or absence of an event. For example, if a company tracks website purchases, and a blank cell appears for a weekend day, the business

logic dictates that zero purchases were recorded for that period. In such cases, explicitly treating the cell as 0 is correct and avoids the dangerous assumption of interpolation. Using zero for truly missing data, however, is highly dangerous for trend analysis, as it artificially pulls the data line down to the axis baseline, creating sharp, often misleading, dips that suggest a loss of value rather than a lack of observation.

Finally, the "Show empty cells as Gaps" option serves as the default safeguard against over-interpretation. When the analyst cannot confidently assume either interpolation or a zero value, or when the absence of data itself is the most important piece of information to convey (e.g., sensor failure detection), displaying a gap is the most ethical and transparent choice. This prevents the viewer from making unfounded assumptions and highlights the inherent incompleteness of the [dataset](#). The choice of chart type also influences this decision; while line charts benefit most from connection, bar charts typically default to omitting the bar, which is essentially a visible gap.

Best Practices: Proactive Data Management and Charting Reliability

Generating reliable and accurate [charts](#) in Excel depends heavily on meticulous [data cleaning](#) and proactive preparation of the source [datasets](#). Relying solely on the chart's "Hidden and Empty Cells" feature to manage ambiguity is a reactive approach; a superior methodology involves minimizing ambiguity in the source data before visualization even begins.

A crucial best practice is to eliminate ambiguity surrounding zero values. If a [blank cell](#) fundamentally means zero in the context of your data, do not leave it empty. Explicitly entering the numeral **0** into the cell removes all doubt regarding its interpretation, ensuring consistent representation across all charts, pivot tables, and subsequent analyses, regardless of the chart's specific configuration settings. This simple action prevents the chart engine from needing to make an interpretive decision that could potentially be incorrect.

For scenarios where data is genuinely missing, and you absolutely must prevent interpolation or a zero value, a powerful alternative exists: utilizing [Excel's NA\(\) function](#). By entering the formula `=NA()` into the empty cell, the value displayed becomes #N/A, which stands for "not available." When charting data that includes #N/A, [Excel](#) is programmed to handle this explicitly marked missing value by always creating a distinct gap in the series. This overrides the "Connect data points with line" setting, providing a rigorous, explicit mechanism for indicating missingness, which is highly valuable in scientific or financial reporting where such gaps are non-negotiable.

In conclusion, the most robust [data visualization](#) starts with effective [data cleaning](#). Always validate your source [spreadsheet](#) for unexpected [blank cells](#) or errors before proceeding to chart creation. By proactively addressing data quality issues and thoughtfully applying the appropriate setting within the Hidden and Empty Cells feature, you guarantee that your [charts](#) are not only visually engaging but also accurate, reliable, and trustworthy representations of your underlying

data.

Additional Resources for Advanced Excel Charting Expertise

While mastering the handling of [blank cells](#) is a significant step toward charting proficiency, the full potential of [Excel](#) lies in leveraging its full suite of advanced charting capabilities. To further refine your data communication skills and create truly dynamic and insightful [visualizations](#), exploring these related topics is highly recommended.

The following tutorials build upon the foundational knowledge of creating and refining [charts](#) and offer guidance on other common yet powerful tasks in [Excel](#):

[How to Create a Dynamic Chart Title in Excel](#)

[Using Secondary Axis in Excel Charts for Dual Data Series](#)

[Tips for Choosing the Right Chart Type in Excel](#)

[Formatting Data Labels for Clarity in Excel Charts](#)