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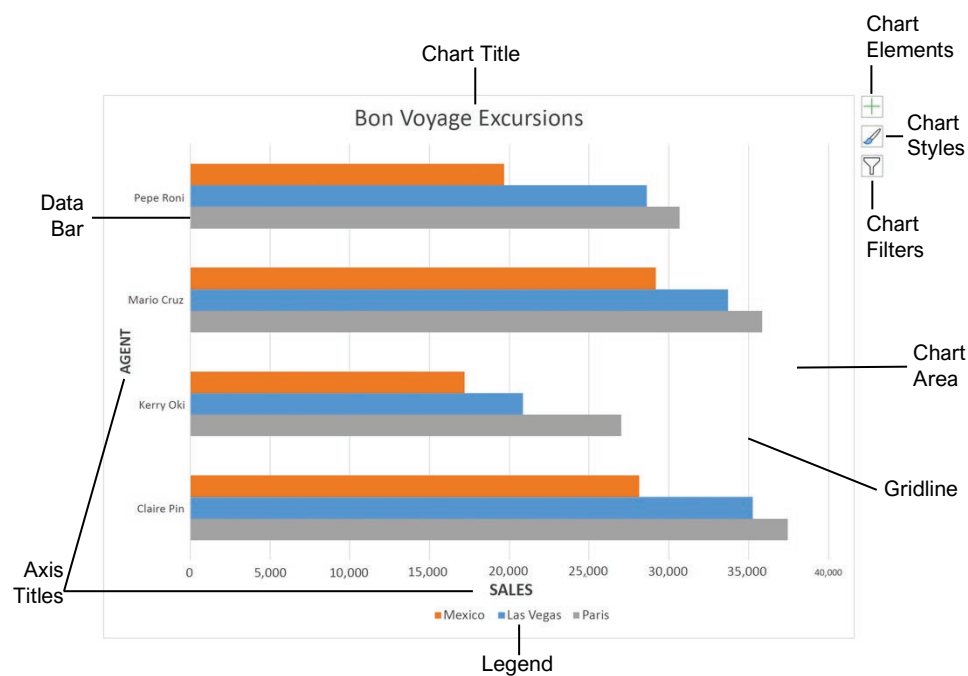
# Excel 2019 Intermediate

## Quick Reference Guide



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### Chart Elements



### Chart Options

#### Chart Types



**Column:** Used to compare different values vertically side-by-side. Each value is represented in the chart by a vertical bar.



**Line:** Used to illustrate trends over time (days, months, years). Each value is plotted as a point on the chart and values are connected by a line.



**Pie:** Useful for showing values as a percentage of a whole when all the values add up to 100%. The values for each item are represented by different colors.



**Bar:** Similar to column charts, except they display information in horizontal bars rather than in vertical columns.



**Area:** Similar to line charts, except the areas beneath the lines are filled with color.



**XY (Scatter):** Used to plot clusters of values using single points. Multiple items can be plotted by using different colored points or different point symbols.



**Stock:** Effective for reporting the fluctuation of stock prices, such as the high, low, and closing points for a certain day.



**Surface:** Useful for finding optimum combinations between two sets of data. Colors and patterns indicate values that are in the same range.

#### Charts

**Create a Chart:** Select the cell range that contains the data you want to chart. Click the **Insert** tab on the ribbon. Click a chart type button in the Charts group and select the chart you want to insert.

**Move or Resize a Chart:** Select the chart. Place the cursor over the chart's border and, with the 4-headed arrow showing, click and drag to move it. Or, click and drag a sizing handle to resize it.

**Change the Chart Type:** Select the chart and click the **Design** tab. Click the **Change Chart Type** button and select a different chart.

**Filter a Chart:** With the chart you want to filter selected, click the **Filter** button next to it. Deselect the items you want to hide from the chart view and click the **Apply** button.

**Position a Chart's Legend:** Select the chart, click the **Chart Elements** button, click the **Legend** button, and select a position for the legend.

**Show or Hide Chart Elements:** Select the chart and click the **Chart Elements** button. Then, use the check boxes to show or hide each element.

**Insert a Trendline:** Select the chart where you want to add a trendline. Click the **Design** tab on the ribbon and click the **Add Chart Element** button. Select **Trendline** from the menu.

#### Charts

**Insert a Sparkline:** Select the cells you want to summarize. Click the **Insert** tab and select the sparkline you want to insert. In the Location Range field, enter the cell or cell range to place the sparkline and click **OK**.

**Create a Dual Axis Chart:** Select the cell range you want to chart, click the **Insert** tab, click the **Combo** button, and select a combo chart type.

#### Print and Distribute

**Set the Page Size:** Click the **Page Layout** tab. Click the **Size** button and select a page size.

**Set the Print Area:** Select the cell range you want to print. Click the **Page Layout** tab, click the **Print Area** button, and select **Set Print Area**.

**Print Titles, Gridlines, and Headings:** Click the **Page Layout** tab. Click the **Print Titles** button and set which items you wish to print.

**Add a Header or Footer:** Click the **Insert** tab and click the **Header & Footer** button. Complete the header and footer fields.

**Adjust Margins and Orientation:** Click the **Page Layout** tab. Click the **Margins** button to select from a list of common page margins. Click the **Orientation** button to choose Portrait or Landscape orientation.

#### Additional Chart Elements

**Data Labels:** Display values from the cells of the worksheet on the plot area of the chart.

**Data Table:** A table added next to the chart that shows the worksheet data the chart is illustrating.

**Error Bars:** Help you quickly identify standard deviations and error margins.

**Trendline:** Identifies the trend of the current data, not actual values. Can also identify forecasts for future data.



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## Intermediate Formulas

**Absolute References:** Absolute references always refer to the same cell, even if the formula is moved. In the formula bar, add dollar signs (\$) to the reference you want to remain absolute (for example, **\$A\$1** makes the column and row remain constant).

**Name a Cell or Range:** Select the cell(s), click the Name box in the Formula bar, type a name for the cell or range, and press **Enter**. Names can be used in formulas instead of cell addresses, for example: **=B4\*Rate**.

**Reference Other Worksheets:** To reference another worksheet in a formula, add an exclamation point '!' after the sheet name in the formula, for example:  
**=FebruarySales!B4**.

**Reference Other Workbooks:** To reference another workbook in a formula, add brackets '[' ]' around the file name in the formula, for example:  
**=[FebruarySales.xlsx]Sheet1!\$B\$4**.

**Order of Operations:** When calculating a formula, Excel performs operations in the following order: Parentheses, Exponents, Multiplication and Division, and finally Addition and Subtraction (as they appear left to right). Use this mnemonic device to remember them:

<b>Please</b>	Parentheses
<b>Excuse</b>	Exponents
<b>My</b>	Multiplication
<b>Dear</b>	Division
<b>Aunt</b>	Addition
<b>Sally</b>	Subtraction

**Concatenate Text:** Use the CONCAT function **=CONCAT(text1,text2,...)** to join the text from multiple cells into a single cell. Use the arguments within the function to define the text you want to combine as well as any spaces or punctuation.

**Payment Function:** Use the PMT function **=PMT(rate,nper,pv,...)** to calculate a loan amount. Use the arguments within the function to define the loan rate, number of periods, and present value and Excel calculates the payment amount.

**Date Functions:** Date functions are used to add a specific date to a cell. Some common date functions in Excel include:

<b>Date</b>	=DATE(year,month,day)
<b>Today</b>	=TODAY()
<b>Now</b>	=NOW()

**Display Worksheet Formulas:** Click the **Formulas** tab on the ribbon and then click the **Show Formulas** button. Click the **Show Formulas** button again to turn off the formula view.

## Manage Data

**Export Data:** Click the **File** tab. At the left, select **Export** and click **Change File Type**. Select the file type you want to export the data to and click **Save As**.

**Import Data:** Click the **Data** tab on the ribbon and click the **Get Data** button. Select the category and data type, and then the file you want to import. Click **Import**, verify the preview, and then click the **Load** button.

**Use the Quick Analysis Tools:** Select the cell range you want to summarize. Click the **Quick Analysis** button that appears. Select the analysis tool you want to use. Choose from formatting, charts, totals, tables, or sparklines.

**Outline and Subtotal:** Click the **Data** tab on the ribbon and click the **Subtotal** button. Use the dialog box to define which column you want to subtotal and the calculation you want to use. Click **OK**.

**Use Flash Fill:** Click in the cell to the right of the cell(s) where you want to extract or combine data. Start typing the data in the column. When a pattern is recognized, Excel predicts the remaining values for the column. Press **Enter** to accept the Flash Fill values.

**Create a Data Validation Rule:** Select the cells you want to validate. Click the **Data** tab and click the **Data Validation** button. Click the **Allow** list arrow and select the data you want to allow. Set additional validation criteria options and click **OK**.

## Tables

**Format a Cell Range as a Table:** Select the cells you want to apply table formatting to. Click the **Format as Table** button in the Styles group of the Home tab and select a table format from the gallery.

	A	B	C	D
1	Excursion	Jan	Feb	Mar
2	Beijing	6,010	7,010	6,520
3	Las Vegas	35,250	28,125	37,455
4	México DF	20,850	17,200	27,010
5	Paris	33,710	29,175	35,840
6	Tokyo	12,510	14,750	11,490
7	<b>Total</b>	<b>108,330</b>	<b>96,260</b>	<b>118,315</b>

**Sort Data:** Select a cell in the column you want to sort. Click the **Sort & Filter** button on the Home tab. Select a sort order or select **Custom Sort** to define specific sort criteria.

**Filter Data:** Click the filter arrow for the column you want to filter. Uncheck the boxes for any data you want to hide. Click **OK**.

**Add Table Rows or Columns:** Select a cell in the row or column next to where you want to add blank cells. Click the **Insert** button list arrow on the Home tab. Select either **Insert Table Rows Above** or **Insert Table Columns to the Left**.

## Tables

**Remove Duplicate Values:** Click any cell in the table and click the **Data** tab on the ribbon. Click the **Remove Duplicates** button. Select which columns you want to check for duplicates and click **OK**.

**Insert a Slicer:** With any cell in the table selected, click the **Design** tab on the ribbon. Click the **Insert Slicer** button. Select the columns you want to use as slicers and click **OK**.

**Table Style Options:** Click any cell in the table. Click the **Design** tab on the ribbon and select an option in the Table Style Options group.

## Intermediate Formatting

**Apply Conditional Formatting:** Select the cells you want to format. On the **Home** tab, click the **Conditional Formatting** button. Select a conditional formatting category and then the rule you want to use. Specify the format to apply and click **OK**.

**Apply Cell Styles:** Select the cell(s) you want to format. On the Home tab, click the **Cell Styles** button and select a style from the menu. You can also select **New Cell Style** to define a custom style.

**Apply a Workbook Theme:** Click the **Page Layout** tab on the ribbon. Click the **Themes** button and select a theme from the menu.

## Collaborate with Excel

**Add a Cell Comment:** Click the cell where you want to add a comment. Click the **Review** tab on the ribbon and click the **New Comment** button. Type your comment and then click outside of it to save the text.

**Invite People to Collaborate:** Click the **Share** button on the ribbon. Enter the email addresses of people you want to share the workbook with. Click the permissions button, select a permission level, and click **Apply**. Type a short message and click **Send**.

**Co-author Workbooks:** When another user opens the workbook, click the user's picture or initials on the ribbon, to see what they are editing. Cells being edited by others appear with a colored border or shading.

**Protect a Worksheet:** Before protecting a worksheet, you need to unlock any cells you want to remain editable after the protection is applied. Then, click the **Review** tab on the ribbon and click the **Protect Sheet** button. Select what you want to remain editable after the sheet is protected.

**Add a Workbook Password:** Click the **File** tab and select **Save As**. Click **Browse** to select a save location. Click the **Tools** button in the dialog box and select **General Options**. Set a password to open and/or modify the workbook. Click **OK**.

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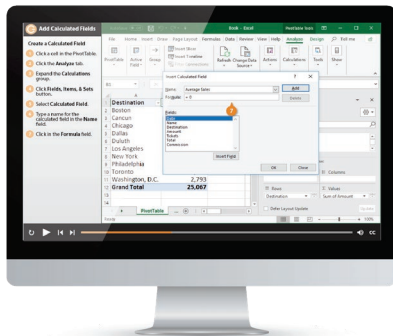
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