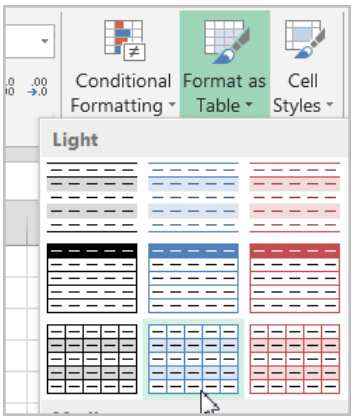
Microsoft Excel – Part 5

Using Excel tables

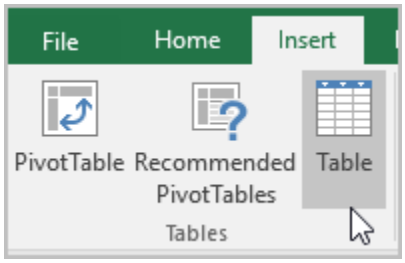
Once you've entered information into a worksheet, you may want to format your data as a **table**. **Tables also include filtering by default**. You can filter your data at any time using the drop-down arrows in the header cells as long as your data is arranged in columns with descriptive column headings. You can use Excel's **predefined table styles** to organize your content and make your data easier to use. Let's use the worksheet ***SortbyColor*** in the Advanced Excel Skills 1.xlsx

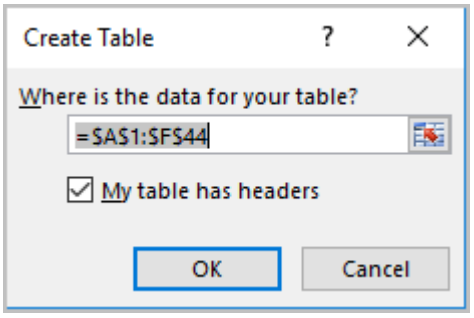


- Click anywhere within the data on your worksheet.
- From the **Home** tab, click the **Format as Table** command in the **Styles** group. Select a **Table Style** from the menu by clicking on one. You can change your **Table Style** later by hovering the mouse to another style..

OR

- You can use **Insert>Table** command.





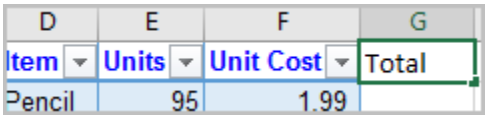
- **Format as Table** or **Create Table** window will appear. Excel indicates the cells to be included in the table setting with surrounding marching ants and the box to confirm "**My table has headers**" is already checked.
- Click **OK.**

- Each column header now has a drop-down arrow indicating a filter for each column. If you have any missing column headings, Excel will just insert a general column# which you can overtype and replace later. Now the data in

	A	B	C	D
1	OrderDat	Region	Rep	Item
2	1/6/13	East	Jones	Pencil
3	1/23/13	Central	Kivell	Binder
4	2/9/13	Central	Jardine	Pencil

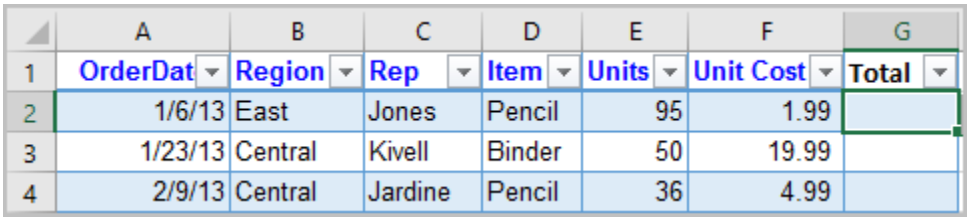
this table can be filtered and un-filtered as if you had used the **Filter** command in the first place.

When you create an **Excel table**, Excel assigns a name to the *table.* In our case, Excel just assigned the generic name **Table1**. Look under the **Design** tab in the **Properties** group under **Table Name**. You may change the Table name as you like but your table name must not have spaces in between. Creating a Table also provides names to *each column* in the table. When you add formulas to an **Excel table**, those names can appear automatically as you enter the formula and select the cell references in the table instead of manually entering them. That means instead of using the explicit cell references such as =E2*F2, Excel will use =Units*Unit Cost if you enter the formula and select the cell references in the table instead of manually entering them. Let's practice, adding a **Total** column back into our data sheet. Select cell G1 and type the word "Total" and hit Enter.



D	E	F	G
Item	Units	Unit Cost	Total
Pencil	95	1.99	

You can see Excel included the new column G into its Table reference.



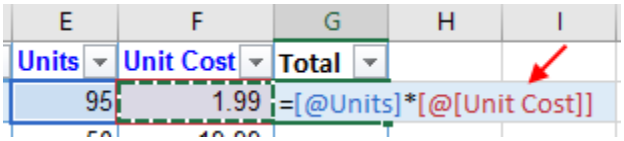
	A	B	C	D	E	F	G
1	OrderDat	Region	Rep	Item	Units	Unit Cost	Total
2	1/6/13	East	Jones	Pencil	95	1.99	
3	1/23/13	Central	Kivell	Binder	50	19.99	
4	2/9/13	Central	Jardine	Pencil	36	4.99	

Now, enter a formula in cell G2 by selecting the cell references.

- Type in = sign in G2.
- Point and click cell E2 to include in your formula. Excel enters the name of the column "Units" instead of the explicit cell reference E2.

D	E	F	G	H
Item	Units	Unit Cost	Total	
Pencil	95	1.99	=[@Units]*	

- Type in * sign to multiply.
- Point and click cell F2 to include in your formula. Again, Excel uses the name of the column "Unit Cost" in the formula.



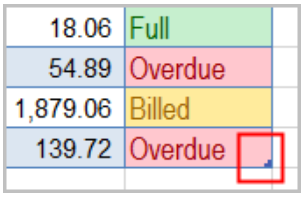
E	F	G	H	I
Units	Unit Cost	Total		
95	1.99	=[@Units]*[@[Unit Cost]]		

- Hit enter to complete your formula. You will see that Excel automatically creates a calculated column and copies the formula down the entire column for you, adjusting it for each row.

That combination of table and column names is called a structured reference. The names in structured references adjust whenever you add or remove data from the table. Structured references also appear when you create a formula outside of an Excel table that references table data. The references can make it easier to locate tables in a large workbook.

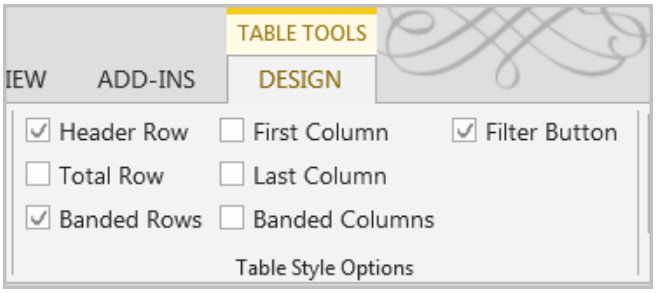
Adding Rows or Columns in Tables: Excel allows you *two ways* to add rows or columns.

1. Begin typing new content **after the last row** or **column** in the table. The row or column will be included in the table automatically. If there is any formula in original table, it will be copied into the new cell automatically.
2. Click, hold, and drag the bottom-right corner **Sizing Handle** of the table to create additional rows or columns.

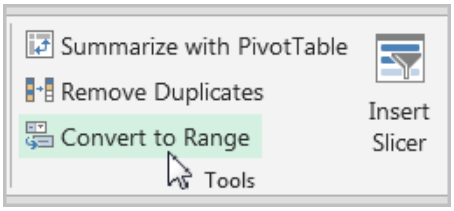


Modifying Styles in Tables: You can turn various options on or off under the **Design** tab to change the appearance of any table. There are six options: Header Row, Total Row, Banded Rows, First Column, Last Column, and Banded Columns. You can see this option when you select any cell in your table.

From the Design tab, check or uncheck the desired options in the **Table Style Options** group.



To Remove a Table: Sometimes you may not want to use the additional features included with tables, such as the Sort and Filter drop-down arrows. You can remove a table from the workbook while still preserving the table's formatting elements, like font and cell color. To do that:



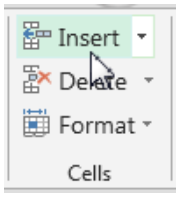
- Select any cell in your table. The **Design** tab will appear.
- Click the **Convert to Range** command in the **Tools** group.
- A dialog box will appear. Click **Yes**.

Split Column OR Divide Spreadsheet Data into the Smallest Parts:

Information in a column can be divided into the smallest parts for each filtering. For example, if a column contains both last and first names together, you can split that column into two separate columns; one for the last names, and the other for the first. By doing so, you can filter your data more efficiently. Let's use *summer* worksheet in the same workbook to practice. **First, select the entire first row that has the Title "Travel Expense Log Sheet" and delete it.** In your spreadsheet where in column A, both last and first names are entered. We want to separate column A into two columns: one for the last names and the other for the first.

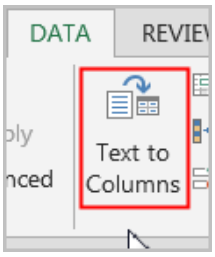
	A	B	C
1	**Employee**	**Registration**	**Plane Tickets**
2	**John Close**	$ 923.00	$ 2,006.00
3	**John Watkins**	$ 600.00	$ 1,540.00
4	**Allison Charles**	$ 540.00	$ 1,200.00
5	**Margie Lyons**	$ 600.00	$ 1,252.00

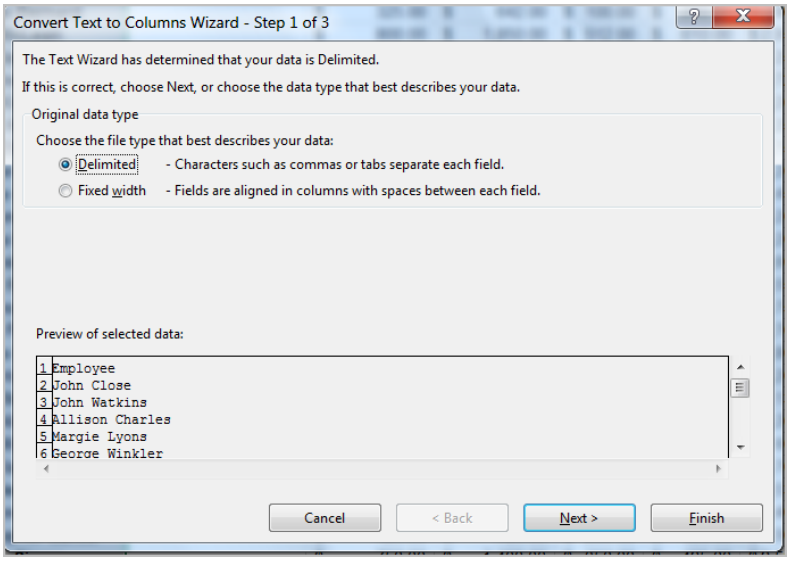
- First, an empty column needs to be inserted between columns A and B to make a space for the newly separated last name column.



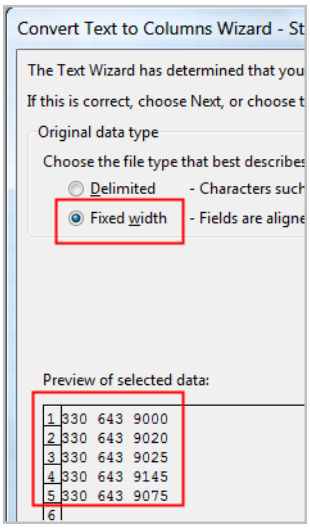
	A	B	C
1	**Employee**		**Registration**
2	**John Close**		$ 923.00

- Select the entire column B and click on the **Insert** command under the **Home** tab in the **Cells** group. A new empty column will be inserted between Employee and Registration columns. Select the entire column A (the column you wish to divide into two). Click the **Data** tab and click on the **Text to Columns** in the **Data Tools** Group**. Convert Text to Columns Wizard** dialog box will appear.

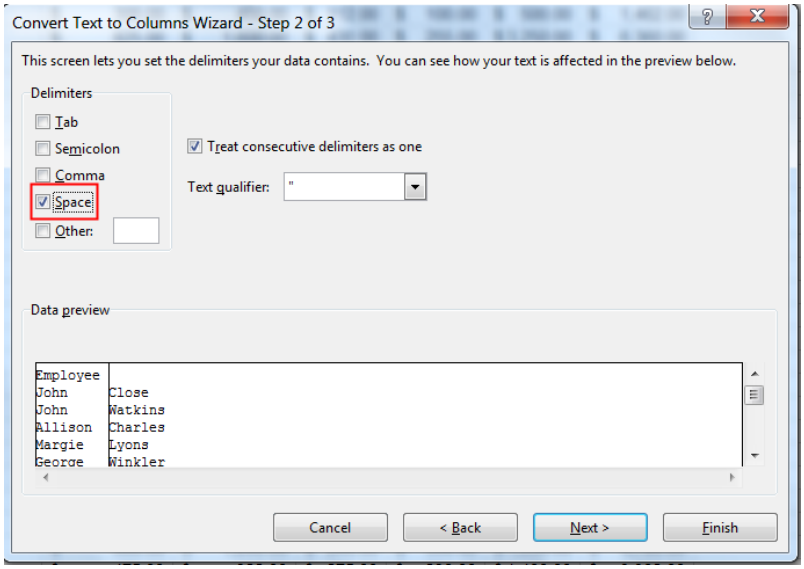




- You are asked to choose between the **Delimited** or **Fixed width** option buttons—although Excel automatically will suggest something for you. To understand the choices, you must understand what is meant by a **delimiter**. A **delimiter** is simply a character that identifies (delimits) the end of one number or word and the beginning of another. The character can be a comma, space or a tab. Excel is smart enough to examine your data and suggest whether you have delimited or fixed-width data. If your data appears in neatly aligned columns, as shown in the section of image on the right , it will select the **Fixed width option** button. If the data does not appear in neatly aligned columns such as in our example where the width of each first and last names are not aligned or even, it will choose the **Delimited** option button. Click the **Next** button to go onto step 2.



- Check the *space* box as we have a space between the names; uncheck the Tab box; click on Next.
- Click *Finish* to finalize your process and confirm to replace the empty new column you just added above with the split data by clicking on *OK.*The names column now should split into two columns: last and first names. See below. You can rename the header rows appropriately if you desire.



	A	B	C
1	Employee		Registration
2	John	Close	$ 923.00
3	John	Watkins	$ 600.00
4	Allison	Charles	$ 540.00
5	Margie	Lyons	$ 600.00

Flash fill

Splitting column can be easily done by using Control + E key combination. It is called Flash Fill function available in Excel 2013 and later. Flash Fill automatically fills your data when it senses a pattern. For example, you can use Flash Fill to separate first and last names from a single column, or combine first and last names from two different columns.

Open the *SplitColumns worksheet.* We want to pull out just last names and first names from the email addresses listed in Column A. In Cell B2, type in the first name "Shawna". Hit Enter. You are in Cell B3 now. Hold down Control button and hit E on keyboard. All first names on respective rows will appear. Select Cell C2 and type in "Buck" as last name; hit Enter to be in Cell C3. Hold down Control button and hit E on keyboard; all last names will show up in respective rows.

Click on the *Employees* worksheet. Type in first name and last names in separate cells in Cell B2 and C2; such as John in B2 and Close in C2.

Now, select Cell B3 and do Control+E or go to Data>Flashfill to enforce the flash fill. The remaining rows should be completed with separate first names. Do the same in Cell C3. Select C3, then Control+E. You should see all last names filled in the remaining rows.

CONCATENATE Formula in Excel

Concatenate function is used to join two or more text strings into one string. Important: In Excel 2016, Excel Mobile, and Excel for the web, this function has been replaced with the CONCAT function.

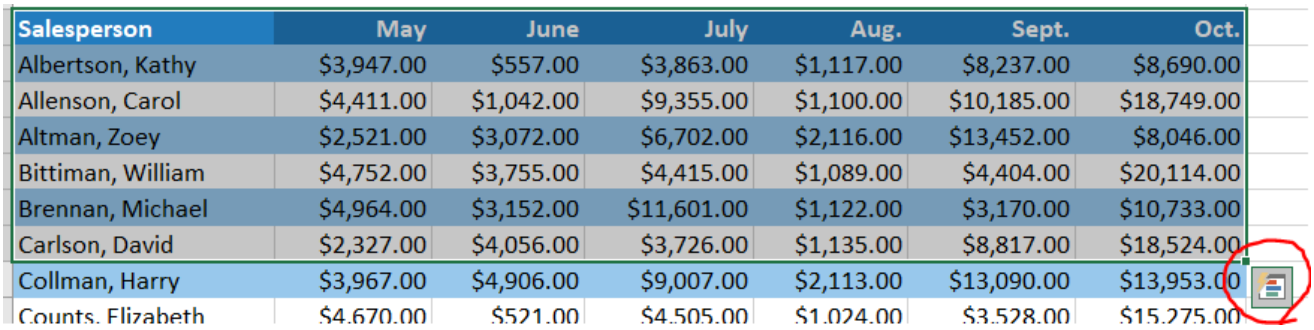
Select Cell D2 in *Employees* worksheet. Combine the first names in column B and last names in column C into a single column by using

=CONCATENATE(B2," ",C2)

Applying the quick analysis tool

Quick Analysis takes a range of data and helps you pick the perfect chart with just a few commands. Select a range of cells. Select the Quick Analysis button that appears at the bottom right corner of the selected data. Or, press Ctrl + Q.

Use the *Quick* worksheet in the same workbook. Highlight the header row and a few rows of data. You should have a Quick Analysis tool shows up at the bottom right of the selected data. Note: It's important to remember that this button only becomes active for a specific data selection and does not appear when highlighting blank cells, entire columns or rows.

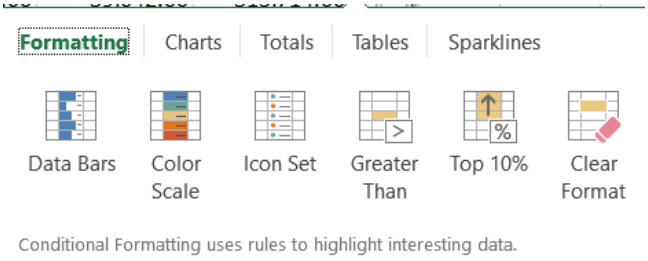


Salesperson	May	June	July	Aug.	Sept.	Oct.
Albertson, Kathy	$3,947.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
Allenson, Carol	$4,411.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
Altman, Zoey	$2,521.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
Bittiman, William	$4,752.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
Brennan, Michael	$4,964.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
Carlson, David	$2,327.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
Collman, Harry	$3,967.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
Counts, Elizabeth	$4,670.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00

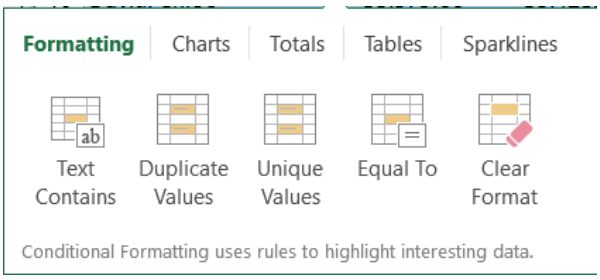
Point on it and you should see readily available tools for you to quickly analyze your data. Place your mouse on each options: Formatting, Charts, Totals, Tables and Sparklines.

Formatting

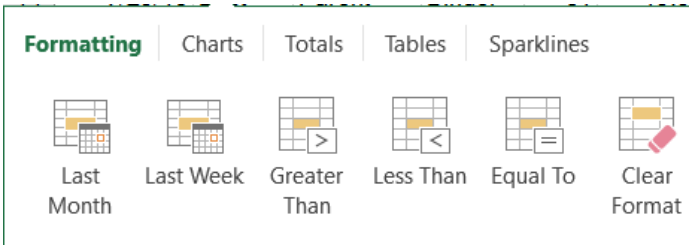
This category allows you to enhance data visualization by applying conditional formatting. The available options depend on the data type you've selected:



For **numeric** data, you can use Data Bars, Color Scale, Icon Sets, Greater Than, and Top 10%, to highlight the relevant numbers in your dataset.

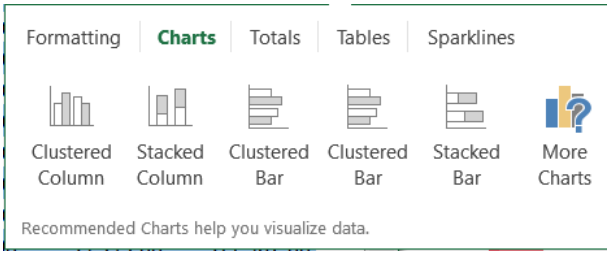


For **text** values, you'll have Highlight Duplicates, Unique Values, Cells That Contain, or Exact Match to identify and filter your data based on text criteria.



For **dates**, you'll be able to highlight the ones occurring Last Month, Last Week as well as Greater Than, Less Than, or Equal To a particular date.

Charts



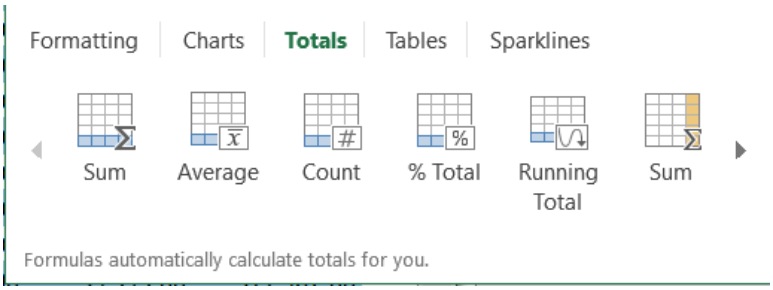
Apart from the traditional ways to create charts in Excel, you can also use the Quick Analysis tool to insert a graph. While Quick Analysis provides a limited range of options, it intelligently suggests the most suitable chart types and makes the process faster.

Based on your selected data, Excel's Quick Analysis tool will display the chart types that are the best fit to represent your data graphically and help you visualize the patterns, trends, and relationships. You can hover over each graph type to see a preview of how it would look like in your worksheet.

If the chart type you are looking for is not there, click on the More Charts option, which will open the Insert Chart dialog box, where you can select from a variety of other graph types, such as scatter plots, histograms, radar charts, and others.

This feature can help you create effective and attractive charts without spending too much time on formatting and customizing. However, if you want more control over the appearance and functionality of your charts, you can use the Chart Tools tab to access more advanced settings and features.

Totals



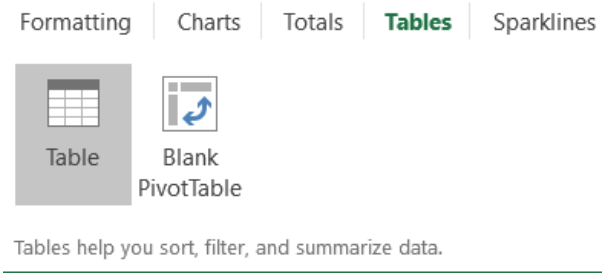
With Totals, you can easily calculate and display various summary statistics for your data, such as sum, average, count, percentage total, and running total.

Depending on the type and format of the data in the selected range, you will see different options for applying totals. For example, if you only have text data, the only option available will be Count, which shows the number of cells with text values.

Totals can be calculated for rows and columns. For vertical summaries in columns, you have several options in the blue color. For horizontal summaries in rows, click the right navigation arrow first, and then you can choose from the options in the yellow color that suit your data best.

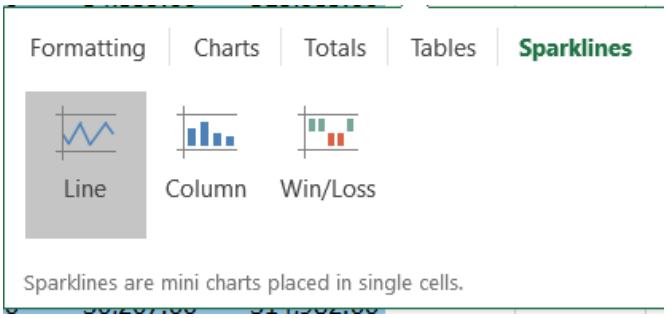
Tables / PivotTables

Transform your tabular data into a formatted Excel table, equipped with filtering, sorting, and auto-expanding features for professional data management. Additionally, you can insert a PivotTable in a new sheet using the selected data as the source for more comprehensive data analysis.



Sparklines

Sparklines are a great way to show data trends in a compact and elegant way. Insert these tiny in-cell charts to visualize patterns within your dataset, choosing from three types: Line, Column, or Win/Loss.



Sparklines can help you highlight important information, such as seasonal variations, outliers, or progress towards a goal. They can also enhance the readability and aesthetics of your reports or dashboards, without taking up too much space.

Sparklines (Detailed)

Sparklines are miniature charts that fit into a single cell. Use **Sparklines** to analyze and view trends in your data without creating an entire chart. **Sparklines** have certain advantages over charts. If you have many rows of data, a traditional chart would not be appropriate to represent all of the rows, making

relevant data difficult to find. But if you placed a sparkline on each row, it will be right next to its source data, making it easy to see relationships and trends for multiple data series at the same time.

There are three types of Sparklines:

- **Line**
- **Column**
- **Win/Loss**

Line and **Column** work the same as line and column charts. **Win/Loss** is similar to **Column**, except it only shows whether each value is positive or negative instead of how high or low the values are. All three types can display markers at important points, such as the highest and lowest points, to make them easier to read.

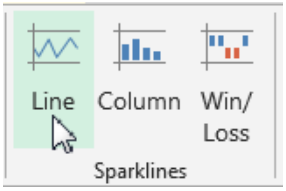
The following example shows how to create Sparklines in traditional way.

To create Sparklines:

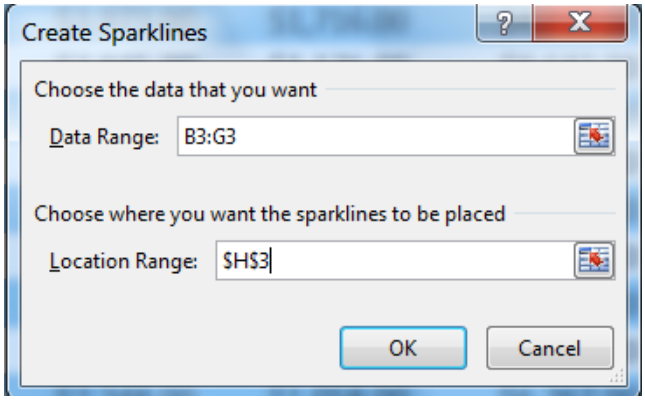
Generally, you will have one sparkline for each row, but you can create as many as you want in any location. Just like formulas, it's usually easiest to create a single sparkline and then use the **fill handle** to create sparklines for the adjacent rows. In our example, we'll create sparklines to help visualize trends in sales over time for each salesperson.

Let's use ***SparkLines*** worksheet in the same workbook ***Intermediate Excel.xlsx*** to practice. Source: GCFlearnfree.org

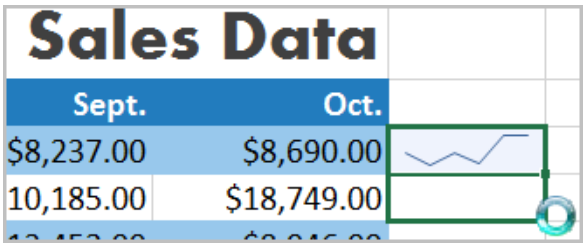
- Select the cells that will serve as the source data for the first sparkline. In our example, we'll select the cell range B3:G3.
- Click on **Insert** tab and **Line** in the **Sparklines** group as shown.



- **Create Sparklines** dialog box will appear. Use the mouse to select the cell where the sparkline will appear, then click OK. In our example, we'll select cell H3, and the cell reference will appear in the **Location Range**: field. The sparkline will appear in the specified cell: H3.

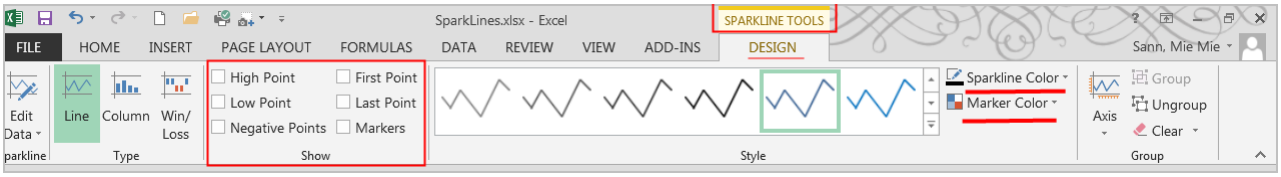


- Use **Fill Handle** to extend the sparklines to the rows below to see the trends on other sales data. Now the sparklines show clear trends in sales over time for each salesperson in our worksheet. Make the row height bigger to see the sparklines more prominent.



To Modify Sparklines:

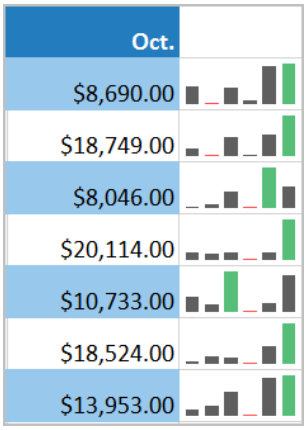
Once you click on any cell that has sparklines, notice the **Sparklines Toolbar** appear on the ribbon with the **Design** tab.



Here you can change: the sparkline type (Line, Column, Win/Loss), see high/low point markers, change color of sparklines and even marker color by using the commands.

- In our example, let's select the sparkline in cell H3 and click on **High Point** and **Low Point** check boxes in the **Show** group.
- Select a different style that shows the green dot for the high point and the red dot for the low point to stand out.

- Let's change the sparkline type to **Column** by checking the **Column** from **Type** group.



- Notice all the high column bars look the same even though the figures are not exactly the same. To counter this drawback of the sparkline feature, click on the drop-down arrow under the **Axis** command.

- Notice both minimum and maximum values are “Automatic” for sparklines. Change both to set as “Same for All Sparklines”. Now your sparklines should reflect the actual data on your spreadsheet.