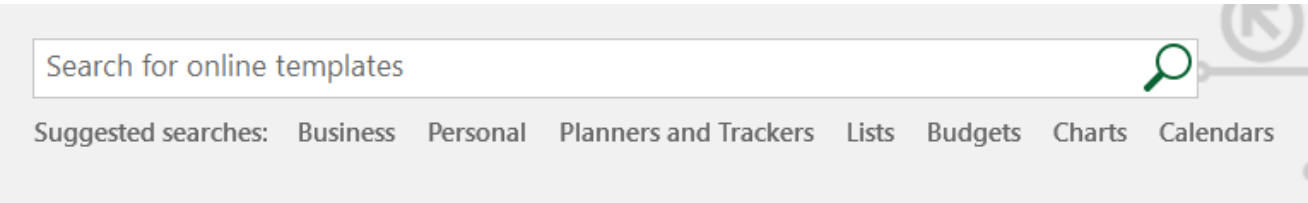
Microsoft Excel – Part 4

Using templates – invoice, timesheets

An Excel template is a predesigned spreadsheet that can be used to create new worksheets with the same layout, formatting and formulas. With templates, you don't need to reconstruct the basic elements every time as they are already integrated into the spreadsheet. You can get to Excel Templates upon opening the Excel program. Select from keywords from the suggested searches or type in the search box to tap into online templates.



For practice, let's look for "Timesheet" and pick one from the result. Click on "Create" button. Whenever you see text boxes with instructions that seem to be only partially seen, go to Data>Data Validation> click on Input Message tab to see the entire instruction. These are helpful tips on how to use that particular predesigned spreadsheet.

Giving a named range to cells

A name is a meaningful shorthand that makes it easier to understand the purpose of a cell reference, constant, formula, or table, each of which may be difficult to comprehend at first glance. For example, when you are adding up a range of cells that include first quarter sales, such as (C20:C30), compare how meaningful if you name that range as "firstquartersales" and use in the formula as follows:

Regular formula to sum up: =SUM(C20:C30)

With the named range: =SUM(firstquartersales)

Syntax Requirements for Naming Source: Microsoft.com

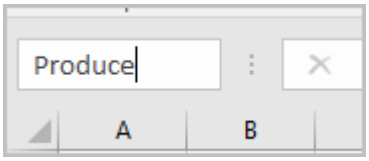
Be aware of the following rules when you create and edit names.

- **Valid characters**: The first character of a name must be a letter, an underscore character (_), or a backslash (\). Remaining characters in the name can be letters, numbers, periods, and underscore characters.
- **Cell references disallowed**: Names cannot be the same as a cell reference, such as Z$100 or R1C1.
- **Spaces are not valid**: Spaces are not allowed as part of a name. Use the underscore character (_) and period (.) as word separators; for example, Sales_Tax or First.Quarter.
- **Name length**: A name can contain up to 255 characters.
- **Case sensitivity:** Names can contain uppercase and lowercase letters. Excel does not distinguish between uppercase and lowercase characters in names. For example, if you created the name Sales and then create another name called SALES in the same workbook, Excel prompts you to choose a unique name.
- **NOTE**: You cannot use the uppercase and lowercase characters "C", "c", "R", or "r" as a defined name, because they are all used as a shorthand for selecting a row or column for the currently selected cell when you enter them in a Name or Go To text box. **If your data is formatted as a Table, Excel automatically names that table by using a generic pattern name such as "Table 1".**

Defining Names

You can define names in *three* ways:

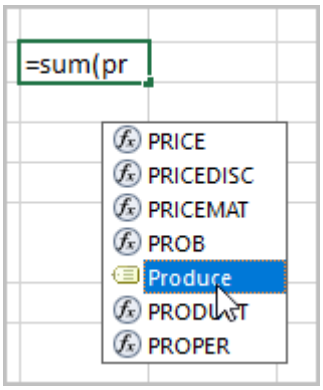
1. **Typing in the Name box in the left of the formula bar:** This is best used for creating a workbook level name for a selected range.



Let's use *WeekTwo* worksheet in the **Intermediate Excel Skills 2.xlsx** workbook to practice this concept. Assume you are trying to figure out how much total spent on Produce and Meat only.

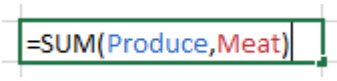
- Select cell ranges F4:F8 (cells for produce).
- Click in the name box and type in "Produce". After typing, hit **Enter** button to complete.

- Select cell ranges F13:F15(cells for meat).
- Click in the name box and type in "Meat", then hit **Enter.**
- Now you have two cell ranges named Produce, and Meat to use in formula.



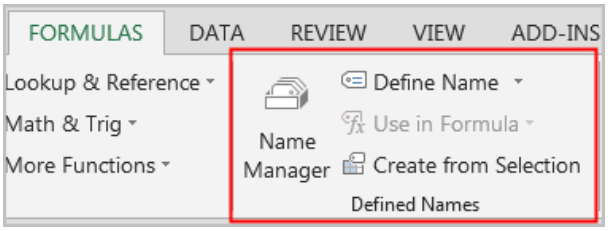
Let's use these two names in a formula:

- Select an empty cell, cell H2.
- Start typing the =SUM formula "=SUM" followed by the open parenthesis and the letter "pr" to look for the name "Produce". The name "Produce" will show up on from the **Formula AutoComplete** drop-down list. Double-click on it to select it. [Alternatively, you can type in the entire word "Produce".]
- Type in comma "," on keyboard to add "Meat" cells into the formula. Start typing the letter "me" and "Meat" will show up top on the list. Double-Click to include that in the formula and then type in close parenthesis ")" on keyboard to end the formula. Then hit **Enter.**

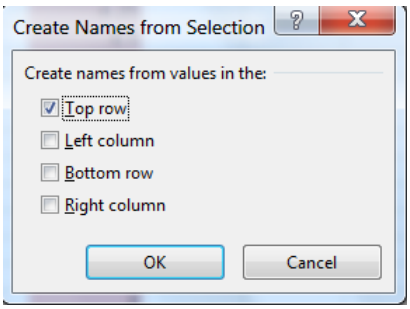


- Place close parenthesis and hit **Enter.** You will get the sum result of those cell ranges (F4:F8 and F13:F15) in cell H2. The answer should be 47.31.

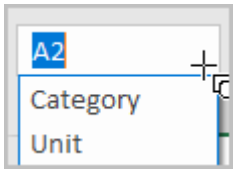
2. **Select existing row and column labels:** You can use the **Create from Selection** command (under **Formulas** tab in **Defined Names** group) to conveniently create names from existing row and column labels by using a selection of cells in the worksheet. Let's use *My List* worksheet to practice the following concept.



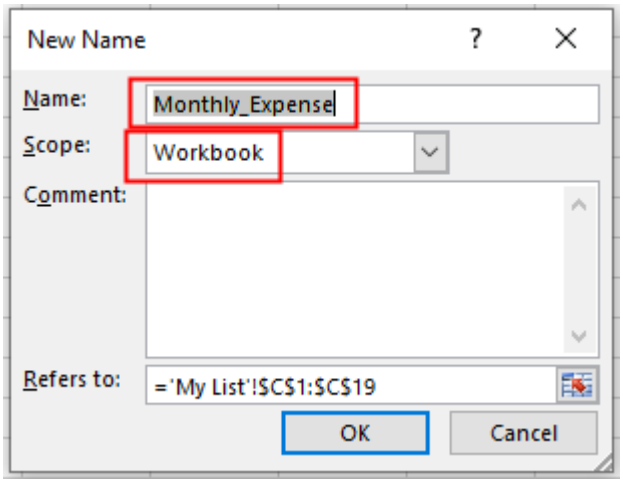
- On the *My List* worksheet, select the entire column A or block cell ranges A1:A10, and click on **Create from Selection** command. **Note:** If you use the range of cells, you will have to extend the cell ranges later if you add more on the named list. By using the entire column would give you a freedom of adding to or deleting from your list in later.



- **Create Names from Selection** box comes up. Accept to use **Top row** as the name and click on OK. Now you have the name "Category", the same as your column heading.
- Do the same for the columns with headings: Unit.
- You should be able to see two names in the drop-down list on the name box. *If your column heading has more than one word, an "underscore" will be automatically placed between those words.*



3. **Clicking on the Define Name** in the **Defined Names** group will bring up **New Name** dialog box. This is best used for when you want more flexibility in creating names, such as specifying a local worksheet level scope or creating a name comment.

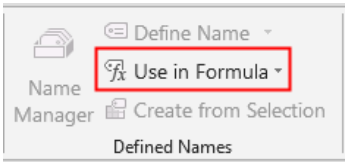


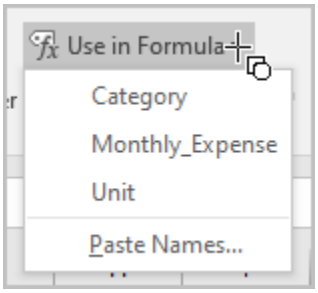
   - In the same worksheet – *My List*, select the cell ranges C1:C19.
   - **New Name** dialog box will appear.
   - The name "Monthly_Expense" will appear (Note the underscore as names has space in between two words) in the **Name** box.
   - To specify the scope of the name, in the **Scope** drop-down list box, select Workbook or the name of a worksheet in the workbook. (Using the Workbook will allow you to use this name anywhere in the entire workbook while selecting a particular worksheet will only allow you to use the name for the chosen worksheet.)

   NOTE: **By default, names use absolute cell references**.

   - Click on OK.

Besides, typing the entire name out in the formula or selecting from the **Formula AutoComplete** as shown previously, you can use **Use in Formula** command in the **Defined Names** group. This command will become active after you create a name. Click on the drop-down arrow and select a defined name from a list available to include in your formula.

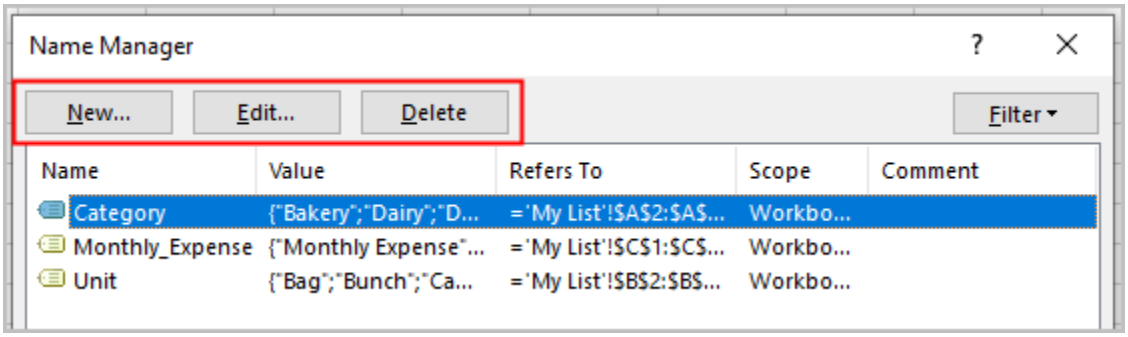




We are going to use these names in formulas in creating drop-down list in next section.

Editing or Deleting Names

You can use the **Name Manager** command in the **Defined Names** group to: create a new name, edit an existing name or delete a name. **Note**: if you delete an existing name being used in a formula, deleting that particular name here will create an error in the cell that contains that formula.



To delete, select a name by clicking on it. Then **Delete**.

- To select more than one name in a contiguous group, click and drag the names, or press **SHIFT** and click the mouse button for each name in the group.
- To select more than one name in a noncontiguous group, press **CTRL** and click the mouse button for each name in the group.
- Click Delete. You can also press the **DELETE** key. Click **OK** to confirm the deletion.

Drop-down lists

You can make a worksheet more efficient by providing drop-down lists. It is especially useful when you want users to limit the data entry to what's available in the list. Users can click an arrow and then click an entry in the list. **Note:** *You can create a drop-down list for a single cell or block of cells. You can copy and paste a list. You can also use the fill-handle to copy the list to adjacent cells like a formula.*

We have named a number of block of cells above ("Category", "Unit", "Monthly_Expense") to use in our formula.

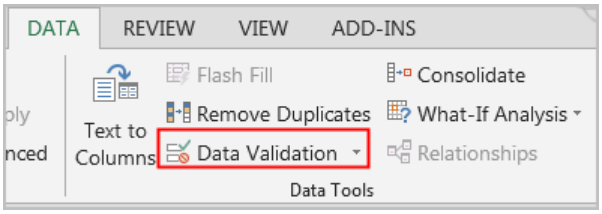
Let's use the *Practice* worksheet from same workbook to practice this concept. Things to consider before creating a drop-down list.

- It is recommended to create entries for your list in a row or a column in a separate worksheet in the same workbook. (We have this done in our workbook. The worksheet *My List* contains the lists we want to use.)

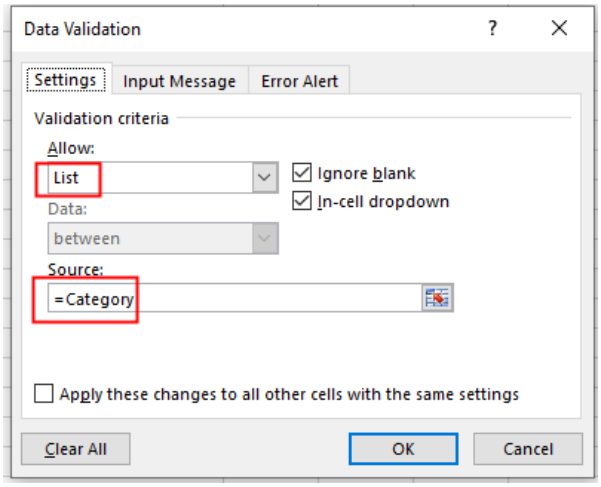
- You should sort your list the way you want it to appear. (Our lists are sorted.)
- You should name the block of lists to use in the formula. (We have named our lists.)

Drop-down list in Settings:

Let's create a drop-down list for Category in cell A2 in *Practice* worksheet.

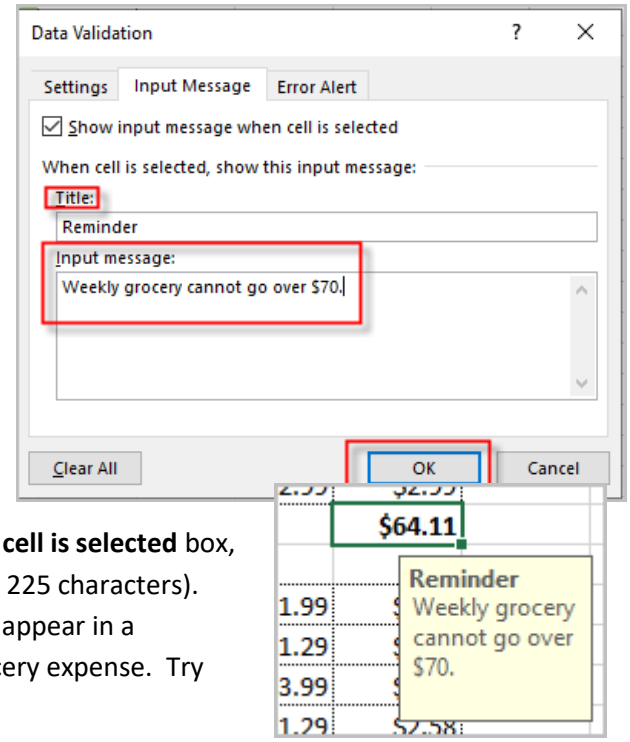


- Click cell A2 in *Practice* worksheet.
- Click **Data** >**Data Validation** in the **Data Tools** group.
- On the **Settings** tab, in the **Allow** box, click **List**.



- Check the **In-cell dropdown** box.
- If it's OK for people to leave the cell empty, check the **Ignore blank** box.
- Click inside the **Source** box; click on **Formula** tab; Click on the arrow next to the *Use in Formula* and select "Category" from the list.
- Now you will see an arrow next to the Cell A2 from which you can select your category form the drop-down list.
- You can copy and paste that list to as many rows below as you may fill in with other categories in those rows. Copy Cell A2 up to row 9 before selecting any particular category either by copy-paste or using your fill handle.
- Select Cell D2 to fill in with "Unit" from the list as explained in same steps above. Copy cell D2 up to row 9 too.
- Select Cell I2 to fill in with "Monthly_Expense" from the list as explained in same steps above. Copy cell I2 up to row 9 as well.

Now practice filling in data in a few rows beginning in row 2 through 9 in Category, Unit and Monthly_Expense columns. Your data should look like the data shown in rows 12 through 19 when finished.

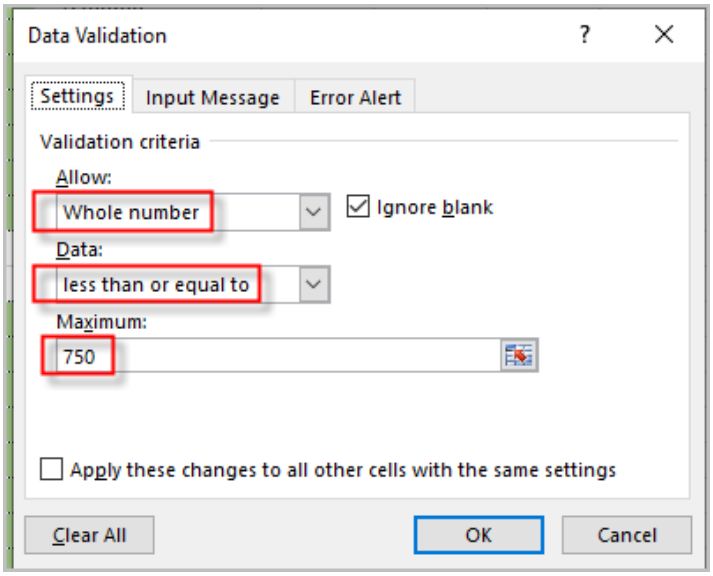


Input-Message: When you want to caution the user before entering data or give reminder for a desired result in any particular cell, use this function.

- Click **Data** >**Data Validation** in the **Data Tools** group.
- Click the **Input Message** tab.
- If you want a message to pop up when the cell is clicked, check the **Show input message when cell is selected** box, and type a title and message in the boxes (up to 225 characters). Example on the right show a reminder message appear in a particular cell to remind the limit of weekly grocery expense. Try that in cell F10.

Error Alert:

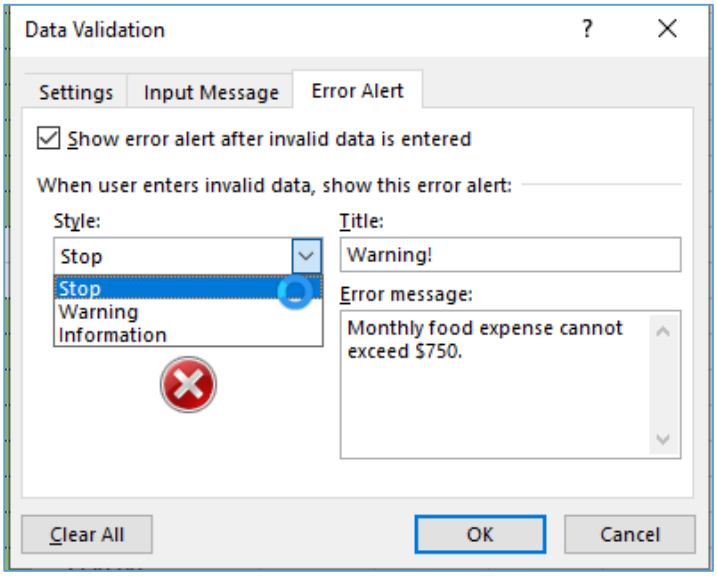
This function is used to "stop" the user from inputting the invalid data. You will have to use it in combination with the "settings" function. Assume, in this Practice sheet example that you want to limit the user not to exceed the monthly food expense of $750.



You can place your limits as follows:

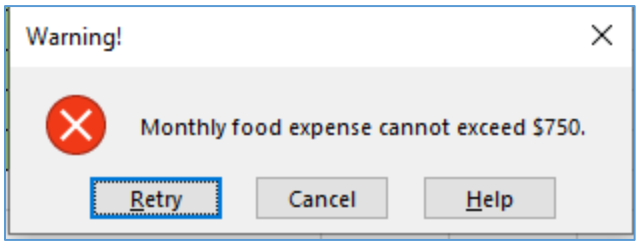
- Let's create the rule in Cell J9.
- Click on **Data>Data Validation.**
- In the **Settings** tab, select:
  - **Whole number** in the **Allow** section

- **Less than or equal to** in the **Data** section
- Set the number to **750** as shown.



- Next, click the **Error Alert** tab to enter your "error message" if an invalid data is placed in those cells. Under **Style,** using **Stop** will not let the user input any invalid data while **Warning** and **Information** will show the error message but will still let the user input invalid data. Make sure the **Show error alert after invalid data is entered** box is checked to show the **Error Message.** Enter the proper error message in Error message box. Click **OK.**
- Entering any data more than 750 will give you an error message in cell J9.

- If invalid data is placed in those cells and if you had used the **Stop** under the **Style** to stop the user for doing so, a window will pop up and make the user correct the data until it meets the criteria.

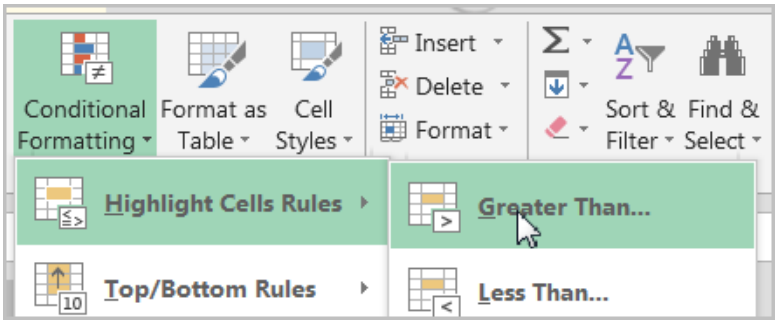


Creating conditions and formulas to format cells

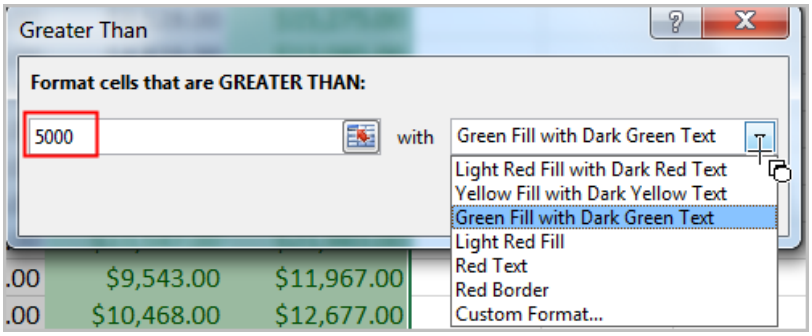
This command can give you a visual analysis of your raw data to detect critical issues and identify patterns and trends by applying formatting—such **as colors, icons**, and **data bars**—to one or more cells based on the cell value. **To detect the trend correctly over a period of time, it is recommended to exclude the column or row with *total values***. To learn this command, open **Intermediate Excel.xlsx** workbook and use the worksheet *ConditionalFormatting.*

- We want to learn whether all sales people are meeting their monthly quota of $5000. We will apply the rule as - "If the value is greater than $5000, color the cell green." By applying this rule, you'd be able to quickly see which cells contain values over $5000.
- Select the desired cells for the conditional formatting rule. In our example, **cells B3:G23.**
- From the Home tab, click the **Conditional Formatting** command. A drop-down menu will appear.

- Hover the mouse over the desired **conditional formatting type**, then select the **desired rule** from the menu that appears. In our example, we want to highlight cells that are **greater than $5000**.



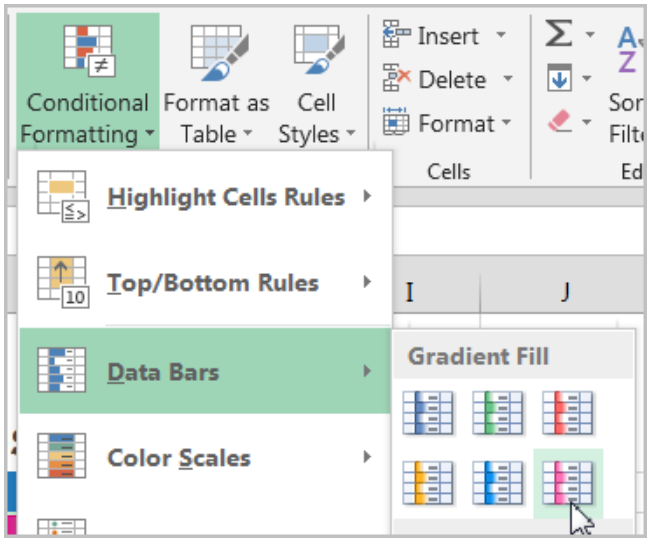
- A dialog box will appear. Enter the desired value(s) into the blank field. In our example, we'll enter **5000**. If you'd like to have a different **formatting,** click the drop down arrow and change the style to your choice such as "Red Text" or "Red Border", etc.



- The conditional formatting will be applied to the selected cells. In our example, it's easy to see which salespeople reached the **$5000** sales goal for each month.

Multiple Conditional Formatting Rules: You can apply **multiple conditional formatting rules** to a cell range or worksheet, allowing you to visualize different trends and patterns in your data.

- For example, if you wanted to see how many cells in that selected data has unusually high data, use the color data bar to identify the cells. **The larger the data, the longer the color bar will be**. In our example, select the Purple Color Bar for the same **cells B3:G23.**



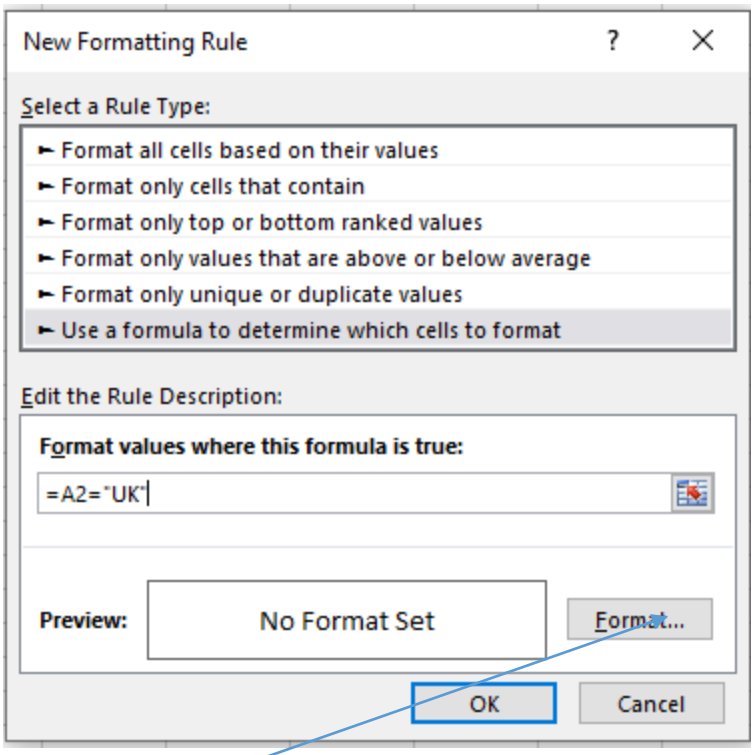
- The new formatting with color data bar should apply over the previous conditional formatting of **values more than $5000**. See below.

	A	B	C	D	E	F	G
1				Westbrook Parker Sales Data			
2	Salesperson	May	June	July	Aug.	Sept.	Oct.
3	Albertson, Kathy	$3,947.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$4,411.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$2,521.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
6	Bittiman, William	$4,752.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
7	Brennan, Michael	$4,964.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
8	Carlson, David	$2,327.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
9	Collman, Harry	$3,967.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
10	Counts, Elizabeth	$4,670.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
11	David, Chloe	$3,379.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
12	Davis, William	$5,363.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
13	Dumlao, Richard	$3,275.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
14	Farmer, Kim	$3,860.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabeth	$4,685.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$4,052.00	$2,883.00	$2,142.00	$2,012.00	$13,547.00	$21,983.00
17	Ford, Victor	$5,541.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$5,667.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinson	$4,269.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
20	Kellerman, Frances	$3,502.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00
21	Mark, Katharine	$5,853.00	$2,011.00	$3,807.00	$1,348.00	$11,110.00	$18,047.00
22	Morrison, Thomas	$2,586.00	$2,398.00	$2,453.00	$1,020.00	$4,612.00	$20,525.00
23	Moss, Pete	$5,714.00	$4,960.00	$11,507.00	$1,010.00	$6,599.00	$11,626.00

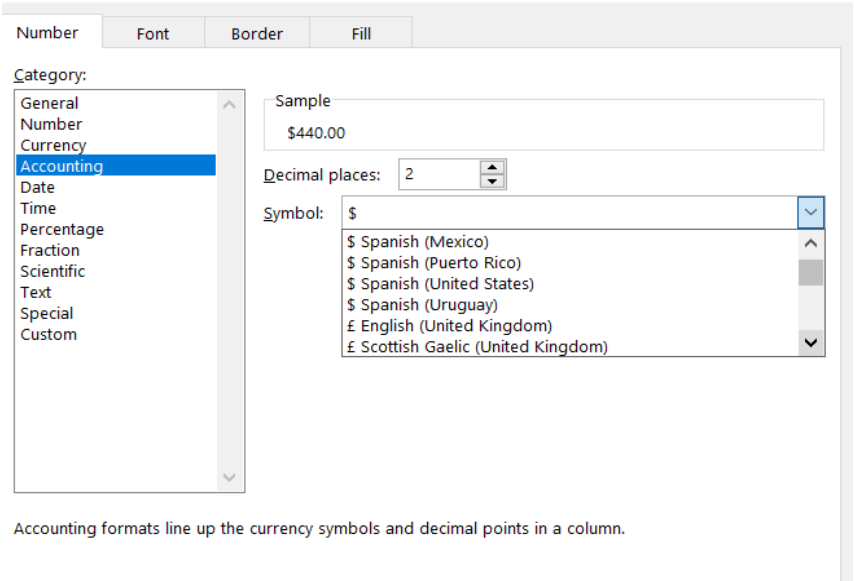
To remove conditional formatting:

- Click the **Conditional Formatting** command. A drop-down menu will appear.

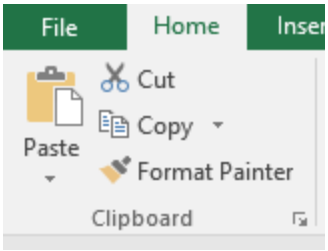
- Hover the mouse over **Clear Rules**, and choose which rules you wish to clear. In our example, we'll select **Clear Rules from Entire Sheet** to remove all conditional formatting from the worksheet
- For practice, click on *Source Data* worksheet in the same workbook and apply two rules to the entire Column E. We want to apply $ to Order amount if the seller is from USA and British Pound £ if the seller for that line is from UK. You can achieve this goal by applying two rules in Cell E2. Use the rule that says "Use a formula to determine which cells to format".
- Select the Cell E2.
- Go to Conditional Formatting>New Rule> click inside the box with red arrow.
- Type in =A2="UK" as we want to set the rule if this cell A2 is equal to "UK", we will assign British Pound symbol £ to Cell E2.



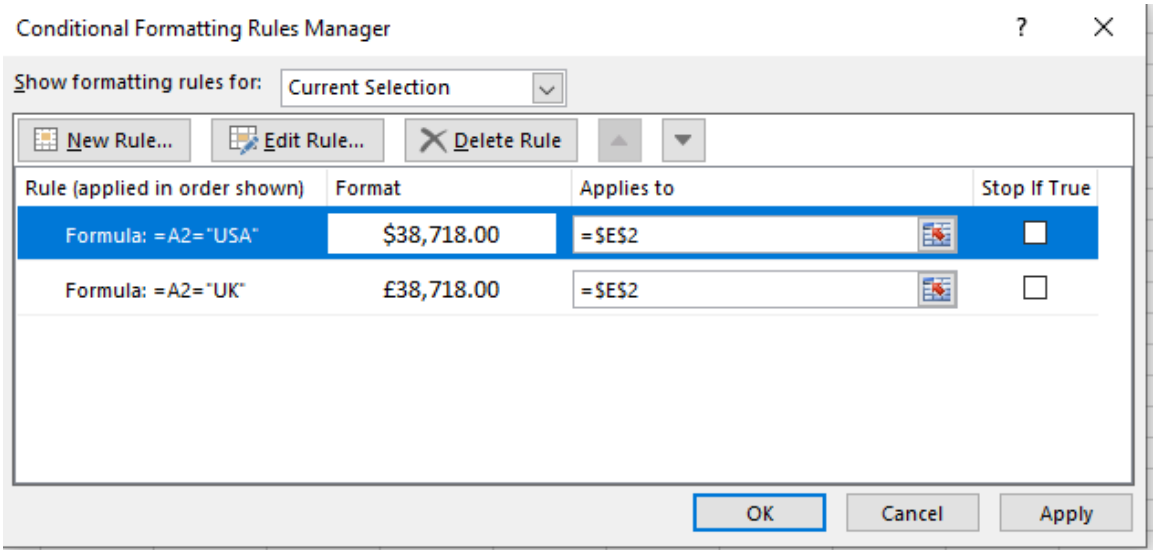
- Click on the Format box and select Accounting>Look for English Pound symbol and click on OK.



- You will repeat this process for Cell E2 using the same steps above except we will assign the US$ symbol for Cell E2. There are now two rules in Cell E2. We will copy these rules by using the Format Painter under the Home button.



- Cell E2 should be set up for two rules; one for A2 being UK and the other for A2 being USA.



- Select Cell E2 and double-click on the Format Painter brush.
- Select Cell E3; Hold down Shift + Control + Down arrow key to select the remaining cells in Column E.
- All those cells in column E now would show the British Pound symbol if their corresponding cells in column A are UK; and US$ symbol if their corresponding cells in column A are USA.

Remember using the conditional formatting is to help you visualize data by providing visual cues to highlight patterns and trends or assign formats like we did. The above example may not be a common practice in Excel, it may well exist if the data contains multiple countries in their respective currency formats.

However, If you want any calculations out of data based on a criteria such as – if cell A2=”UK”, multiply the Cell E2 by 1.2 to give 20% commission on the sale, then you have to use IF function to accomplish that. We will cover this in Advanced Excel chapters.