

September 2, 2022

# Introduction to Microsoft Excel




# Contents

<b>Creating a new spreadsheet from scratch.....</b>	<b>3</b>
Create a workbook.....	3
Create a workbook from a template.....	3
<b>Writing and formatting column text and titles.....</b>	<b>3</b>
Change font style, size, color, or apply effects.....	3
Change the text alignment.....	4
Clear formatting.....	5
<b>Creating a Table.....</b>	<b>5</b>
Turning your data into a table.....	5
<b>Using Excel's auto-fill features.....</b>	<b>6</b>
AutoFill Sequences.....	6
<b>Keeping column and row titles visible.....</b>	<b>7</b>
Unfreeze rows or columns.....	7
<b>Documents You Can Create in Excel:.....</b>	<b>8</b>
<b>Excel Formulas:.....</b>	<b>8</b>
Equal sign:.....	8
Addition:.....	9
Subtraction:.....	9
Multiplication:.....	9
Division:.....	9
<b>Excel Functions:.....</b>	<b>10</b>
SUM:.....	10
AVERAGE:.....	10
IF:.....	10
VLOOKUP:.....	10
INDEX:.....	11
MATCH:.....	11
COUNTIF:.....	11
<b>Using Pivot tables.....</b>	<b>12</b>
Create a PivotTable:.....	12

PivotTable Fields:.....	13
<b>Adding multiple rows row/column. ....</b>	<b>14</b>
How to insert one or more rows/columns.....	14
<b>Use filters to simplify your data.....</b>	<b>15</b>
Adding a Filter.....	15
Filter data in a table.....	15
<b>Remove duplicate data points or sets. ....</b>	<b>17</b>
To remove duplicate values.....	17
To highlight unique or duplicate values.....	17
<b>Transpose rows into columns.....</b>	<b>19</b>
The Transpose feature:.....	19
<b>Split up Text Information Between Columns.....</b>	<b>19</b>
Delimiters.....	19
<b>Conditional Formatting to Make Cells Automatically Change Color Based on Data. ....</b>	<b>21</b>
Conditional Formatting.....	21
<b>Absolute Reference.....</b>	<b>23</b>
Switch between absolute, relative, and mixed references (F4 key).....	23
<b>Combine cells using ampersand.....</b>	<b>24</b>
Combine Text from Multiple Cells.....	24
<b>Add checkboxes. ....</b>	<b>24</b>
Developer Tag.....	24
Adding a Checkbox.....	25
<b>Hyperlink a cell to a website.....</b>	<b>25</b>
Inserting a Hyperlink.....	25
<b>Add drop-down menus.....</b>	<b>26</b>
Data Validation.....	26

## Creating a New spreadsheet From Scratch.

### Create a workbook

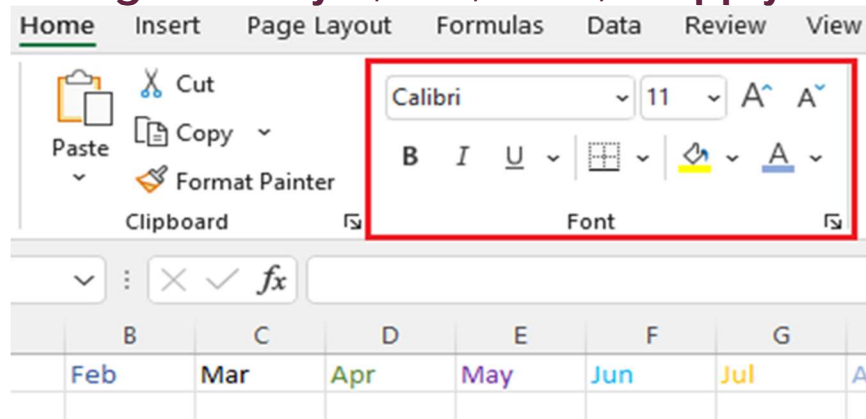
- Open **Excel**. 
- Select Blank workbook.
- Start typing.

### Create a workbook from a template

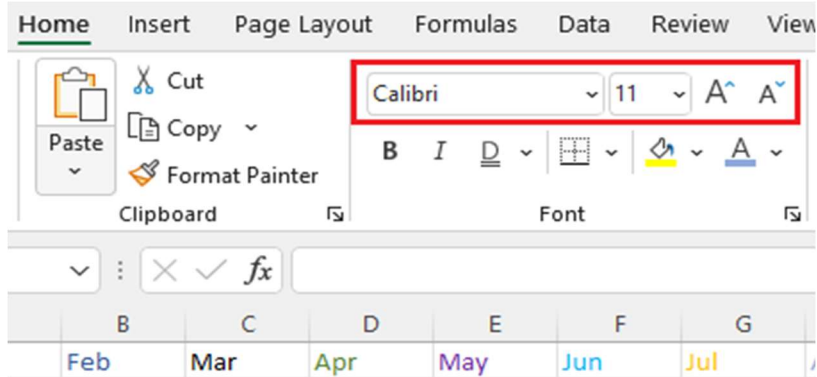
- Select **File > New** or press **Ctrl+N**.
- Double-click a template.
- Click and start typing.

## Writing and Formatting Column Text and Titles.

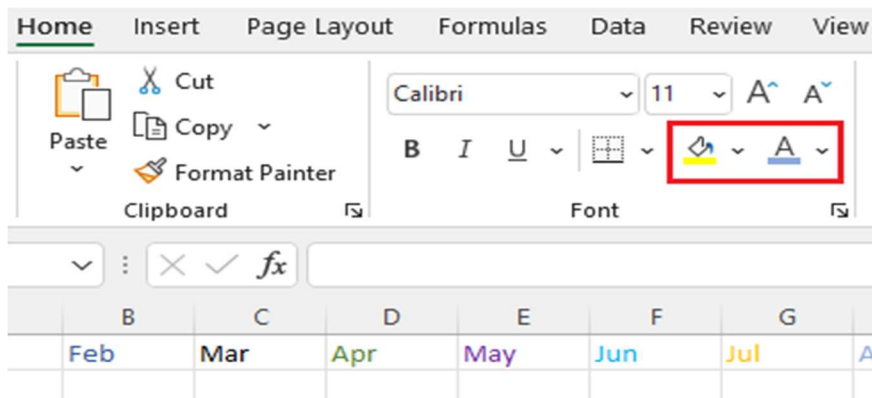
### Change font style, size, color, or apply effects



- Click the **Home** tab:
- For a different **font style**, click the arrow next to the default font **Calibri** and pick the style you want.
- To increase or decrease the **font size**, click the arrow next to the default size 11 and pick another text size

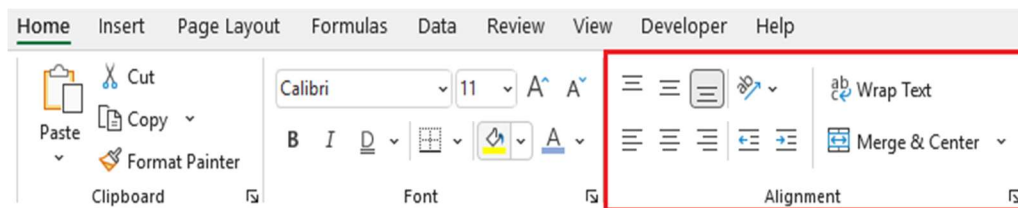


- To change the font color, click **Font Color** and pick a color.
- To add a background color, click **Fill Color** next to **Font Color**.



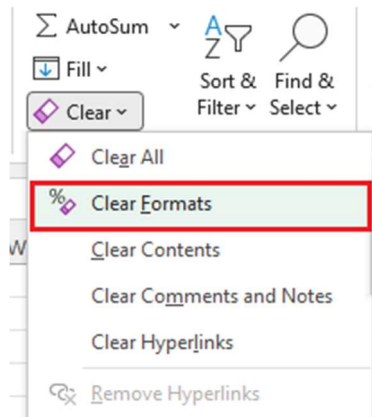
## Change the text alignment

- You can position the text within a cell so that it is aligned left or right or centered.
- If it's a long line of text, you can apply **Wrap Text** so that all the text is visible.
- Select the text that you want to align, and on the **Home** tab, pick the alignment option you want.



## Clear formatting

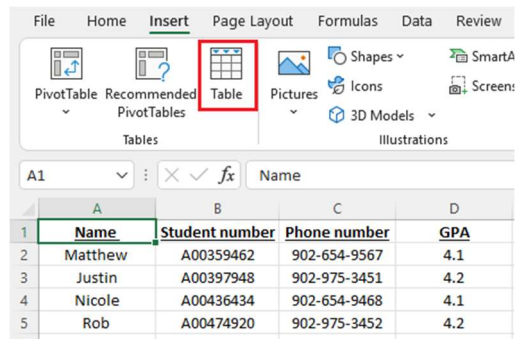
- After applying any formatting, you are able to undo it.
- Select the text, and on the **Home** tab, click **Clear > Clear Formats**.



## Creating a Table

### Turning your data into a table

- Select the cells that contain the information for the table.
- Click the **Insert** tab > Locate the "Tables" group.



- Click **Table**.
  - A "Create Table" dialog box will open.
- If you have column headings, check the box **My table has headers**.
- Verify that the range is correct > Click **OK**.

	A	B	C	D
1	<b>Name</b>	<b>Student number</b>	<b>Phone number</b>	<b>GPA</b>
2	Matthew	A00359462	902-654-9567	4.1
3	Justin	A00397948	902-975-3451	4.2
4	Nicole	A00436434	902-654-9468	4.1
5	Rob	A00474920	902-975-3452	4.2
6				
7				
8				
9				
10				
11				
12				

Create Table ? X

Where is the data for your table?

\$A\$1:\$D\$5

My table has headers



OK Cancel

- Resize your columns to make the headings visible.

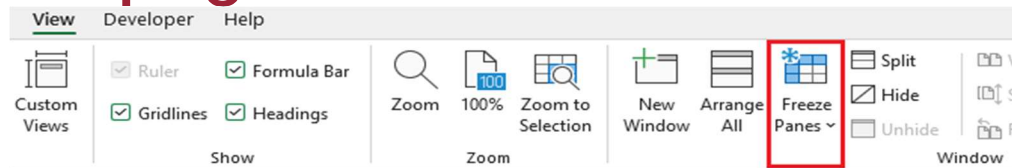
	A	B	C	D
1	<b>Name</b>	<b>Student number</b>	<b>Phone number</b>	<b>GPA</b>
2	Matthew	A00359462	902-654-9567	4.1
3	Justin	A00397948	902-975-3451	4.2
4	Nicole	A00436434	902-654-9468	4.1
5	Rob	A00474920	902-975-3452	4.2

## Using Excel's Auto-Fill Features.

### AutoFill Sequences

- Select one or more cells you want to use as a basis for filling additional cells.
  - For a series like 1, 2, 3, 4, 5..., type 1 and 2 in the first two cells. For the series 2, 4, 6, 8..., type 2 and 4.
  - For the series 2, 2, 2, 2..., type 2 in first cell only.
- Drag the fill handle .
- If needed, click **Auto Fill Options** Button  and choose the option you want.
- And the series is filled in for you automatically using the AutoFill feature

## Keeping column and row titles visible



### Freeze the first column

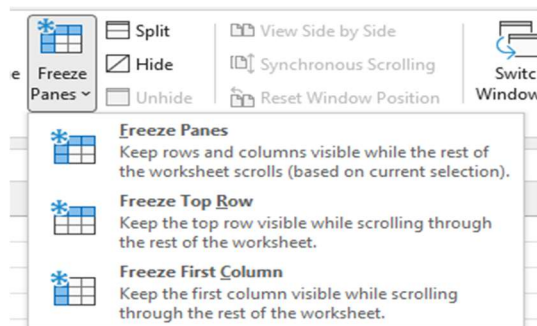
- Select View > Freeze Panes > Freeze First Column.

### Freeze the first two columns

- Select the third column.
- Select View > Freeze Panes > Freeze Panes.

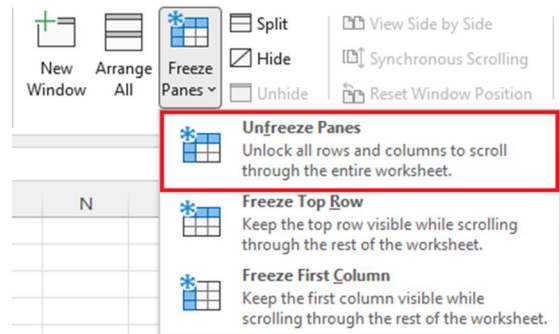
### Freeze columns and rows

- Select the cell below the rows and to the right of the columns you want to keep visible when you scroll.
- Select View > Freeze Panes > Freeze Panes.



### **Unfreeze rows or columns**

- On the View tab > Window > Unfreeze Panes.





## Documents You Can Create in Excel:

### Income statement

- You can use an Excel spreadsheet to track a company's sales activity and financial health.

### Balance Sheet

- Balance sheets are among the most common types of documents you can create with Excel. It allows you to get a holistic view of a company's financial standing.

### Calendar

- You can easily create a spreadsheet monthly calendar to track events or other date-sensitive information.

### Budgets

- Excel is a strong budget-keeping tool. You can create and track budgets, as well as spend, using Excel.

## Excel Formulas:

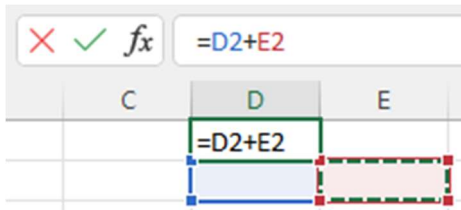
### Equal sign:

- Before creating any formula, you'll need to write an **equal sign (=)** in the cell where you want the result to appear.



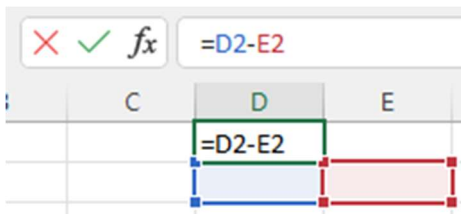
### Addition:

- To add the values of two or more cells, use the + sign. Example: =D2+E2.



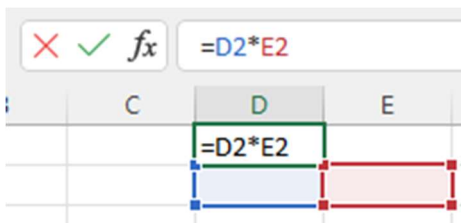
### Subtraction:

- To subtract the values of two or more cells, use the - sign. Example: =D2-E2.



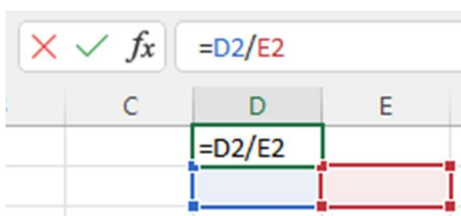
### Multiplication:

- To multiply the values of two or more cells, use the \* sign. Example: =D2\*E2.



### Division:

- To divide the values of two or more cells, use the / sign. Example: =C1/D4.



## Excel Functions:

### SUM:

- The **SUM** function automatically adds up a range of cells or numbers. To complete a sum, you would input the starting cell and the final cell with a colon in between. Here's what that looks like: **SUM**(Cell1:Cell2). Example: =SUM(C5:C30).

fx		=SUM(D2:F2)			
C	D	E	F		
	F2)				
	1	2	3		

fx		=SUM(D2:F2)			
C	D	E	F		
	6				
	1	2	3		

### AVERAGE:

- The **AVERAGE** function averages out the values of a range of cells. The syntax is the same as the SUM function: AVERAGE(Cell1:Cell2). Example: =AVERAGE(C5:C30).

fx		=AVERAGE(D2:F2)			
C	D	E	F		
	E(D2:F2)				
	1	2	3		

fx		=AVERAGE(D2:F2)			
C	D	E	F		
	2				
	1	2	3		

### IF:

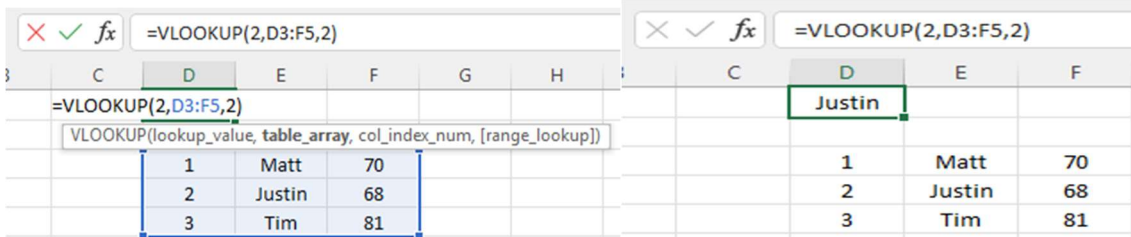
- The **IF** function allows you to return values based on a logical test. The syntax is as follows: **IF**(logical\_test, value\_if\_true, [value\_if\_false]). Example: =IF(A2>B2,"Over Budget","OK").

fx		=IF(F2>D2,E2,0)			
C	D	E	F		
	0)				
	1	2	3		

fx		=IF(F2>D2,E2,0)			
C	D	E	F		
	2				
	1	2	3		

### VLOOKUP:

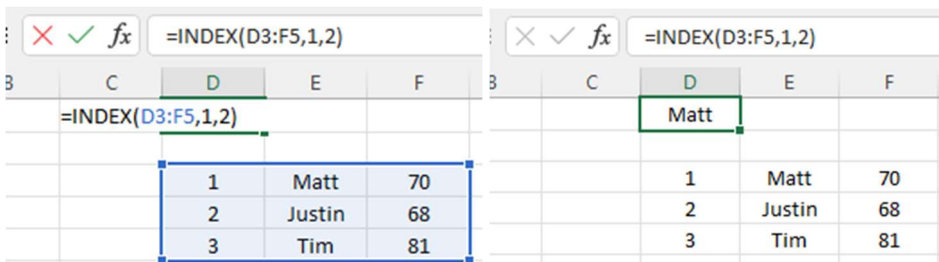
- The **VLOOKUP** function helps you search for anything on your sheet's rows. The syntax is: **VLOOKUP**(lookup value, table array, column number, Approximate match (TRUE) or Exact match (FALSE)). Example: =VLOOKUP(I@Attorney,tbl\_Attorneys,4,FALSE).



	C	D	E	F	G	H
		1	Matt	70		
		2	Justin	68		
		3	Tim	81		

## INDEX:

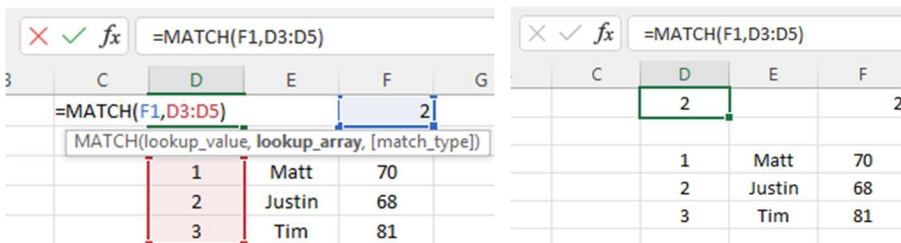
- The INDEX function returns a value from within a range. The syntax is as follows: **INDEX**(array, row\_num, [column\_num]).



	C	D	E	F
		1	Matt	70
		2	Justin	68
		3	Tim	81

## MATCH:

- The MATCH function looks for a certain item in a range of cells and returns the position of that item. It can be used in tandem with the INDEX function. The syntax is: **MATCH**(lookup\_value, lookup\_array, match\_type).



	C	D	E	F	G
		1	Matt	70	
		2	Justin	68	
		3	Tim	81	

## COUNTIF:

- The COUNTIF function returns the number of cells that meet a certain criteria or have a certain value. The syntax is: **COUNTIF**(range, criteria). Example: =COUNTIF(A2:A5,"London").

	C	D	E	F
	=COUNTIF(D3:F5,"Matt")			
		1	Matt	70
		2	Justin	68
		3	Matt	81

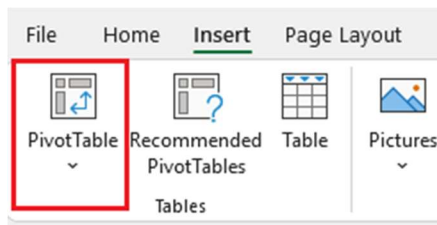
  

	C	D	E	F
		2		
		1	Matt	70
		2	Justin	68
		3	Matt	81

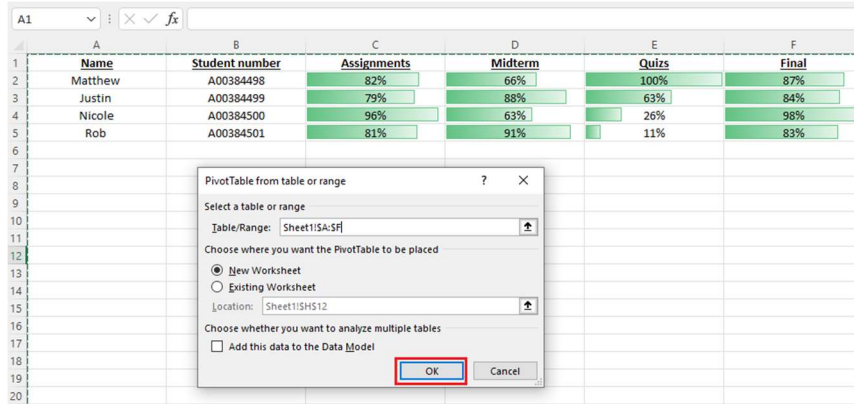
## Using Pivot tables

### Create a PivotTable:

- Select **Insert > PivotTable**.



- Under **Select a table or range**, In the **Table/Range** field, select the desired data for your chart.
- Under **Choose where you want the PivotTable report to be placed**,
  - Select **New worksheet** to place the PivotTable in a new worksheet or
  - Select **Existing worksheet** and then select the location you want the PivotTable to appear.
- Select **OK**.

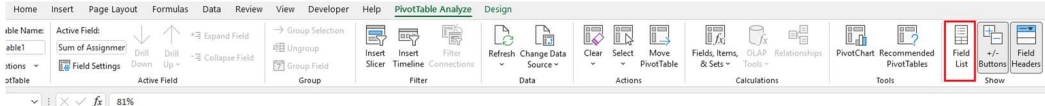


## PivotTable Fields:

- After you click OK on the **PivotTable from the table or range** you will be presented with options to add PivotTable Fields.
- The Field List has a field section in which you pick the fields you want to show in your PivotTable

Row Labels	Sum of Quizzes	Sum of Final	Sum of Midterm	Sum of Assignments
Justin	63%	84%	88%	79%
A00384499	63%	84%	88%	79%
Matthew	100%	87%	66%	82%
A00384498	100%	87%	66%	82%
Nicole	26%	98%	63%	96%
A00384500	26%	98%	63%	96%
Rob	11%	83%	91%	81%
A00384501	11%	83%	91%	81%
<b>Grand Total</b>	<b>200%</b>	<b>352%</b>	<b>308%</b>	<b>338%</b>

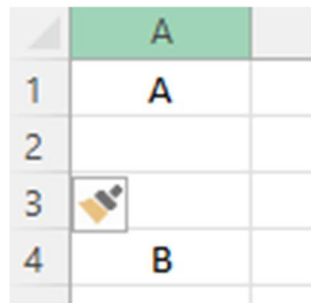
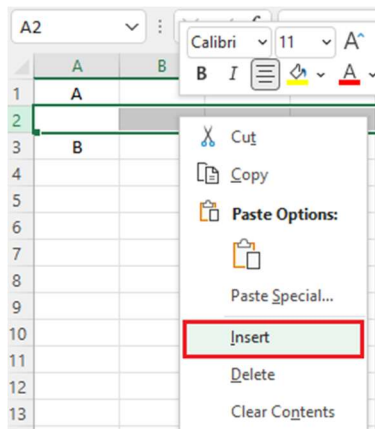
- If you click inside the PivotTable but don't see the **Field List**, open it by clicking anywhere in the PivotTable. Then, select the **PivotTable Analyze** on the ribbon.
- Click **Field List**.



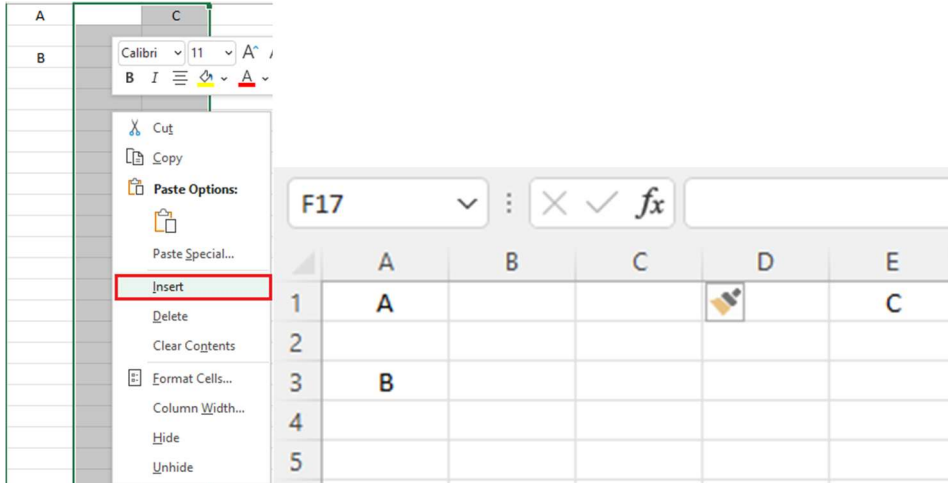
Labels	Sum of Quizzes	Sum of Final	Sum of Midterm	Sum of Assignments
stin	63%	84%	88%	79%
100384499	63%	84%	88%	79%
ttthew	100%	87%	66%	82%
100384498	100%	87%	66%	82%
zole	26%	98%	63%	96%
100384500	26%	98%	63%	96%
b	11%	83%	91%	81%
100384501	11%	83%	91%	81%
d Total	200%	352%	308%	338%

## Adding multiple rows row/column. How to insert one or more rows/columns.

- Select the row below where you want the new rows to appear.
- Right click on the highlighted row and select **"Insert"** from the list. This will insert one row above the row you initially highlighted.



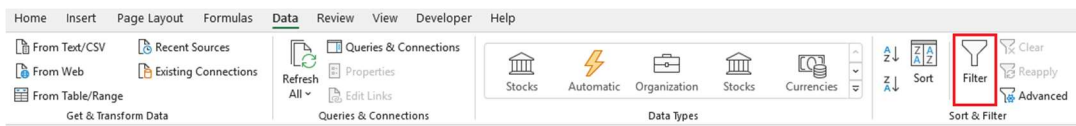
- Add multiple rows or columns, highlight the same number of pre-existing rows or columns that you want to add. Then, right-click and select **"Insert."**



## Use filters to simplify your data.

### Adding a Filter

- Select any cell within the range.
- Select **Data > Filter**.

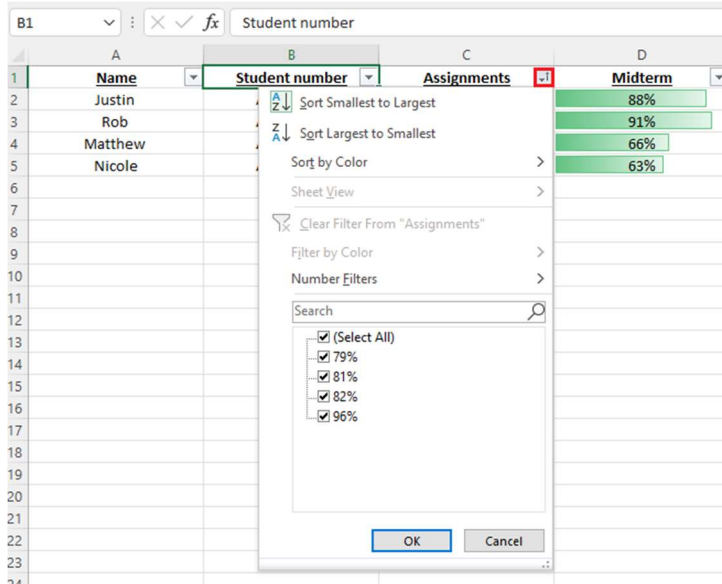


- Select the column header arrow Filter arrow.
- Select **Text Filters** or **Number Filters**, and then select a comparison, such as **Between**.
- Enter the filter criteria and select **OK**.

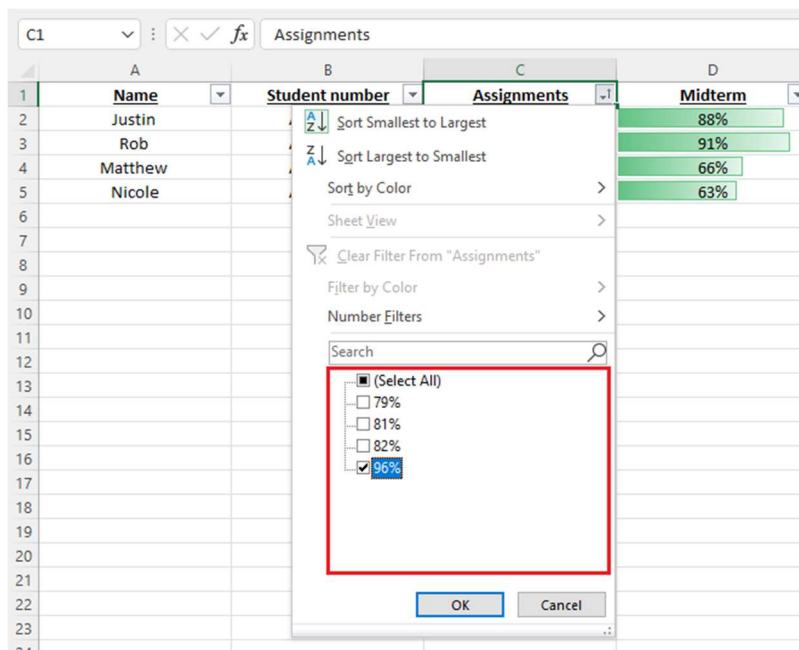
### Filter data in a table

- When you Create and format tables, filter controls are automatically added to the table headers.
- Select the column header arrow Filter drop-down arrow for the column you want to filter.





- Uncheck (Select All) and select the boxes you want to show.



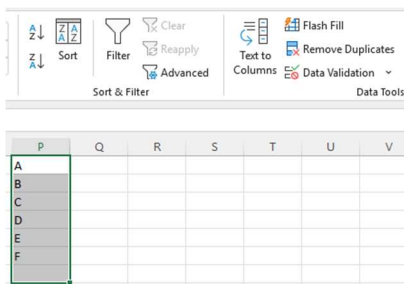
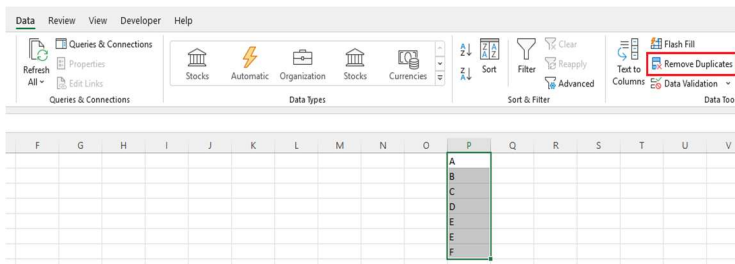
- Click **OK**.
- The column header arrow Filter drop-down arrow changes to a Applied filter icon Filter icon. Select this icon to change or clear the filter.

	A	B	C	D	E	F
1	Name	Student number	Assignments	Midterm	Quizzes	Final
5	Nicole	A00384500	96%	63%	26%	98%
6						
7						
8						

## Remove duplicate data points or sets.

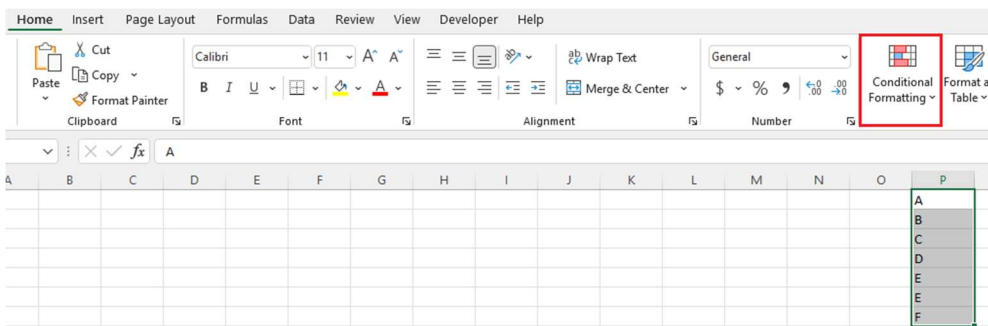
To remove duplicate values,

- Click **Data > Data Tools > Remove Duplicates**.

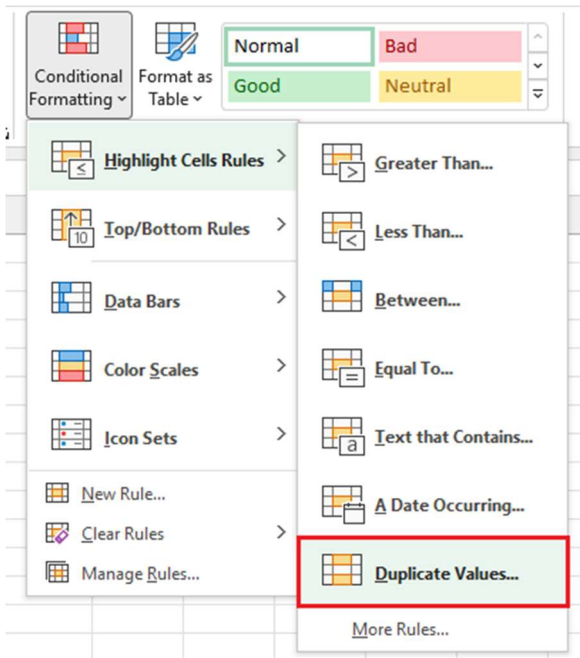


To highlight unique or duplicate values

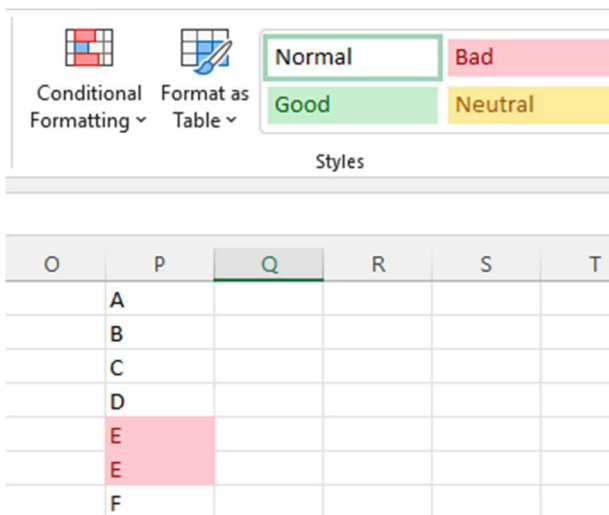
- Use the **Conditional Formatting** command in the **Style** group on the **Home** tab.



- Select **Highlight Cells Rules > Duplicate Values...**



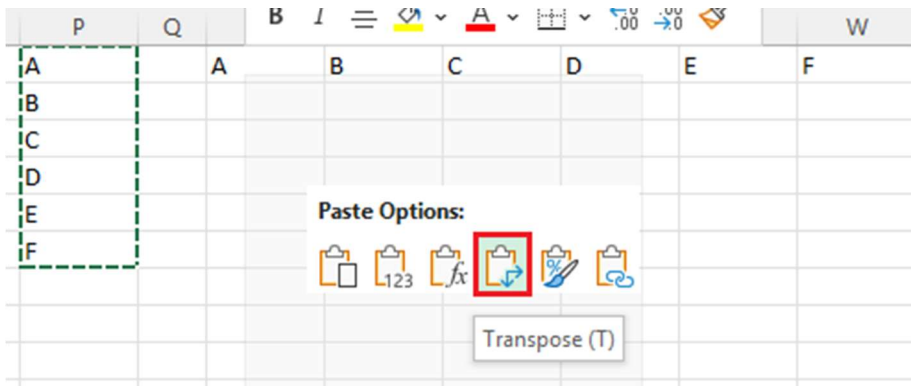
- Any duplicates in the selected range will then be highlighted



## Transpose rows into columns.

### The Transpose feature:

- Select the range of data you want to rearrange, including any row or column labels, and either select Copy **Copy** icon on the **Home** tab, or press **CONTROL+C**.
- Select the first cell where you want to paste the data, and on the **Home** tab, click the arrow next to **Paste**, and then click **Transpose**.
  - Pick a spot in the worksheet that has enough room to paste your data. The data you copied will overwrite any data that's already there.

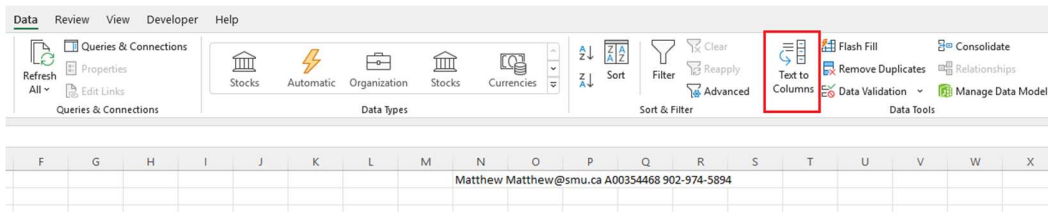


- After rotating the data successfully, you can delete the original data.

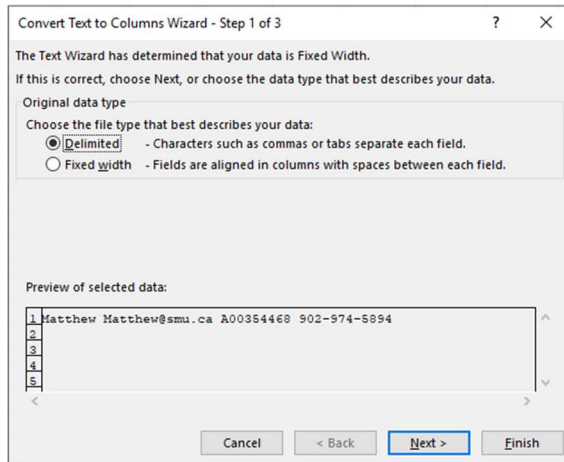
## Split up Text Information Between Columns.

### Delimiters:

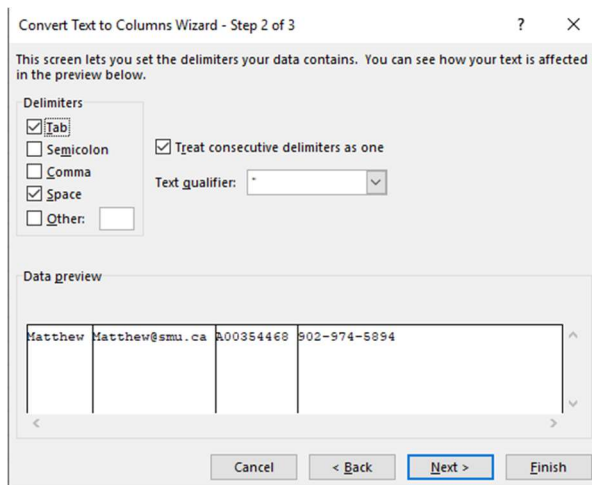
- Select the cell or column that contains the text you want to split.
- Select **Data** and under **Data Tools**, select **Text to Columns**.



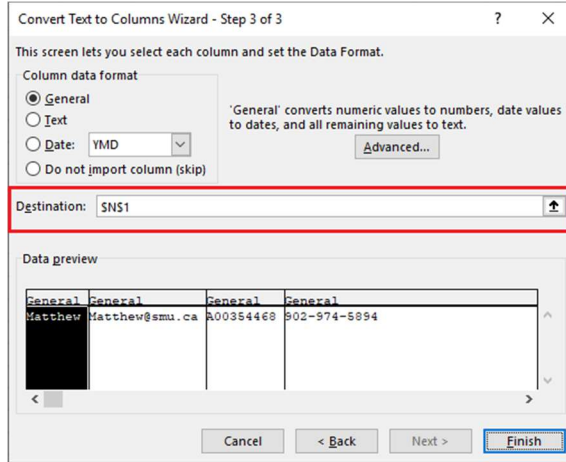
- In the **Convert Text to Columns Wizard**, select **Delimited** > **Next**.



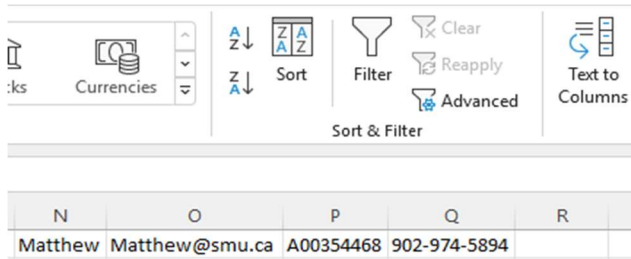
- Select the **Delimiters** for your data. For example, **Comma** and **Space**. You can see a preview of your data in the **Data preview** window.



- Select **Next**.
- Select the **Destination** in your worksheet which is where you want the split data to appear.



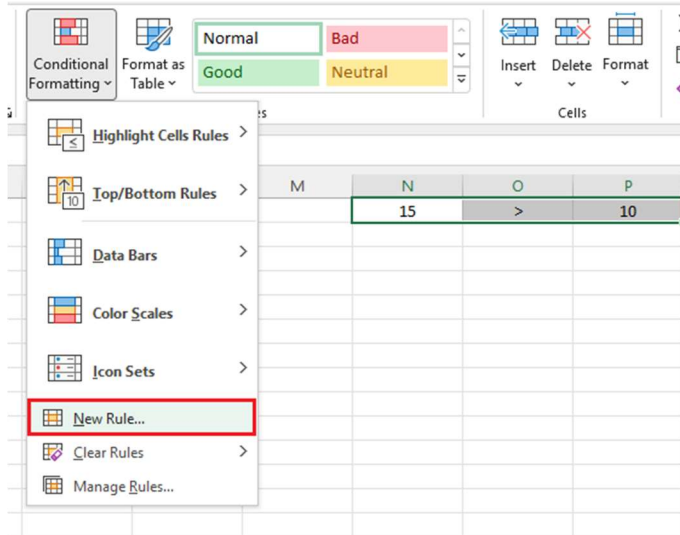
- Select **Finish**.



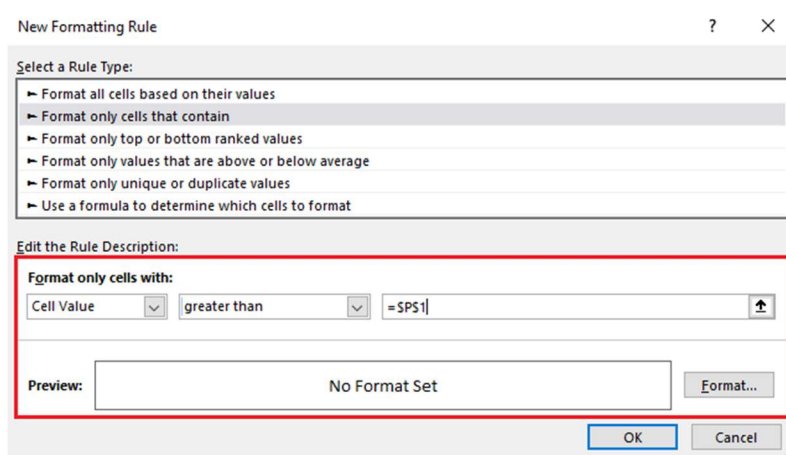
## Conditional Formatting to Make Cells Automatically Change Color Based on Data.

### Conditional Formatting

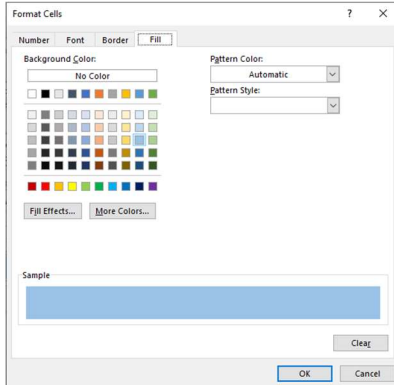
- Select the table or range where you want to change the background color of cells
- Navigate to the **Home tab**, under **Styles group**, choose **Conditional Formatting** > **New Rule....**



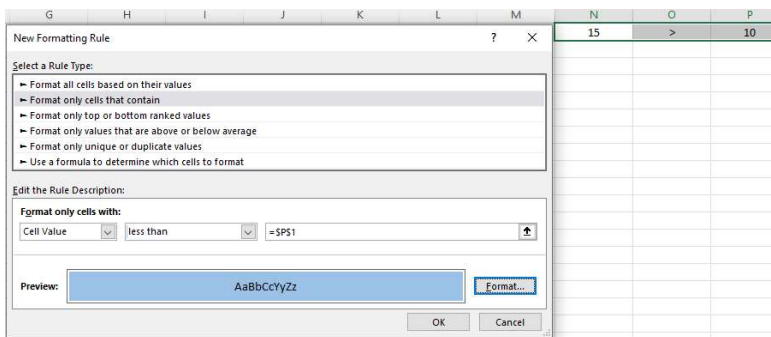
- In the **New Formatting Rule** dialog box, select "**Format only cells that contain**" under "**Select a Rule Type**" box.
- In the lower part of the dialog box under "**Format Only Cells with section**", set the rule conditions



- click the **Format**
- In the Format Cells dialog box, switch to the **Fill** tab and select the color of your choice



- Click **OK**.



- Back on the **New Formatting Rule window**, click **OK**

N	O	P
15	>	10

Use dollar signs to keep one cell's formula the same regardless of where it moves.

## Absolute Reference

- The dollar sign (\$) fixes the reference to a given cell, so that it remains unchanged no matter where the formula moves. In other words, using \$ in cell references allows you to copy the formula in Excel without changing references.

## Switch between absolute, relative, and mixed references (F4 key).

- Select the cell you wish to edit.



- Enter Edit mode by pressing the **F2** key or double-click the cell.
- Select the cell reference you want to change.



- Press **F4** to toggle between four cell reference types.

## Combine cells using ampersand. Combine Text from Multiple Cells

- Select the cell in which you want the combined data
- Type an = (equal sign) to start the formula
- Click on the first cell
- Type the **&** operator (**shift + 7**)
- Click on the second cell
- Press **Enter** to complete the formula

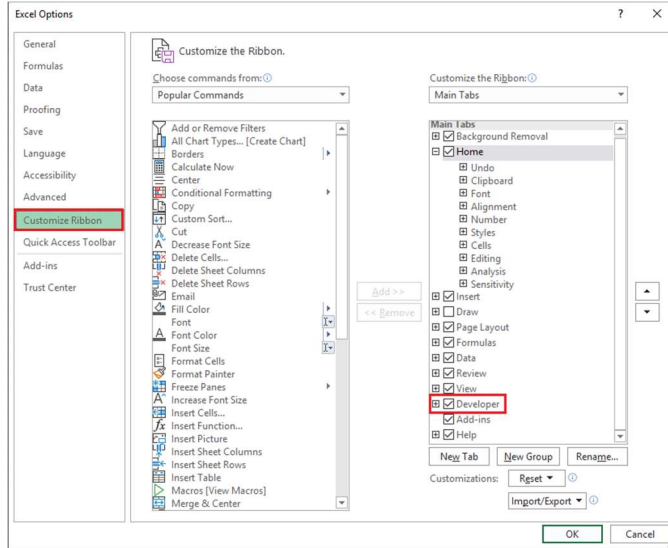
	A	B
1	Matthew	Rocks
2		
3	=A1&B1	

	A	B
1	Matthew	Rocks
2		
3	Matthew Rocks	

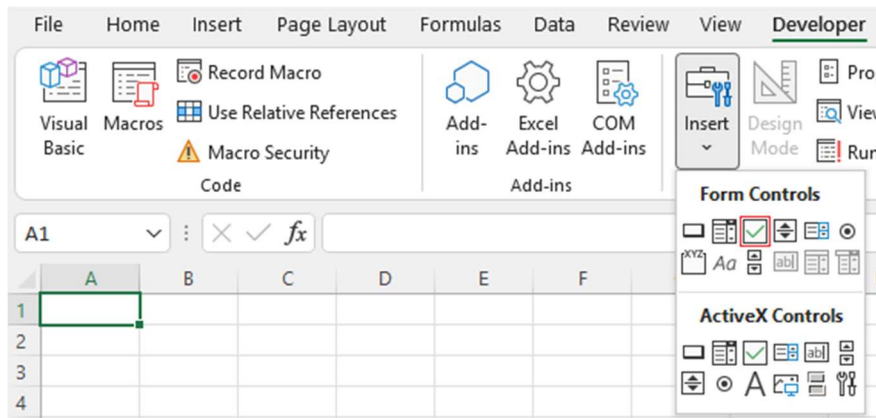
## Add checkboxes. Developer Tag

- click **File > Options > Customize Ribbon**, select the **Developer** check box, and click **OK**.



## Adding a Checkbox

- To add a check box, click the **Developer** tab, click **Insert**, and under **Form Controls**, select the checkbox option.



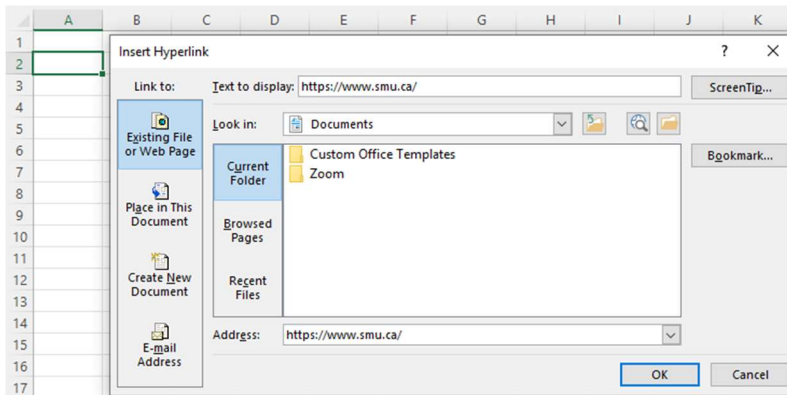
- Click in the cell where you want to add the check box or option button control.
- To edit or remove the default text for a control, click the control, and then update the text as needed.

## Hyperlink a cell to a website.

### Inserting a Hyperlink

- press **Ctrl K**.

- From there a box will pop up allowing you to place the hyperlink URL.



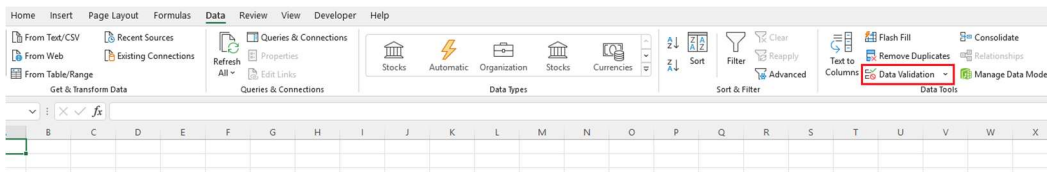
- Copy and paste the URL into this box and hit **OK** or click **Enter**.



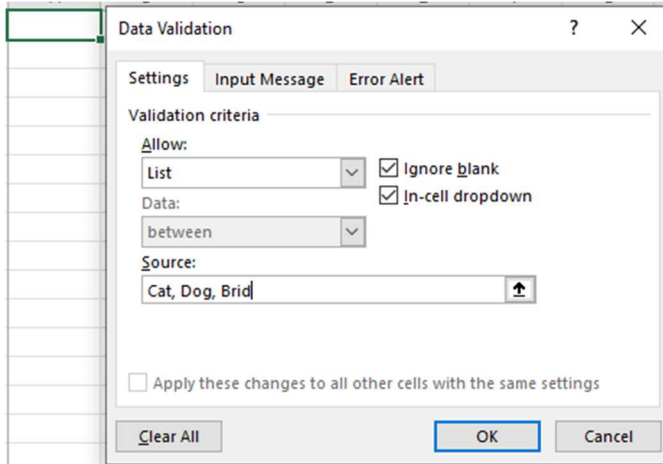
## Add drop-down menus.

### Data Validation

- Highlight the cells you want the drop-downs to be in,
- Then click the **Data** menu in the top navigation
- Under the **Data Tools** menu, click **Data Validation**.



- From there, you'll see a **Data Validation Settings** box open.
- Under the **Allow** options, click **Lists**.
- Check the **In-Cell dropdown** button.
- Under **Source** you can enter data separated by a comma or select and highlight a field of cells that your drop-down menu will reference.



- Press **OK**.

