Microsoft Excel User Manual

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Chapter 1
Learning the Basics of Excel

Microsoft Excel is one of the most useful spreadsheet editors today. This chapter will teach you the basics of launching Excel, creating and opening workbooks, and entering data into spreadsheets.

It is important to familiarize yourself with the overall hierarchy of Microsoft Excel. An Excel document is called a **workbook**. A workbook contains one or more **spreadsheets**, and each spreadsheet is comprised of numerous **cells**. Cells are the basic "boxes" used to store data in Excel.

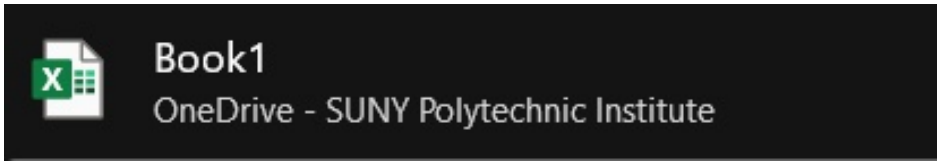


Figure 1.1.1: A workbook - an Excel document containing one or more spreadsheets.

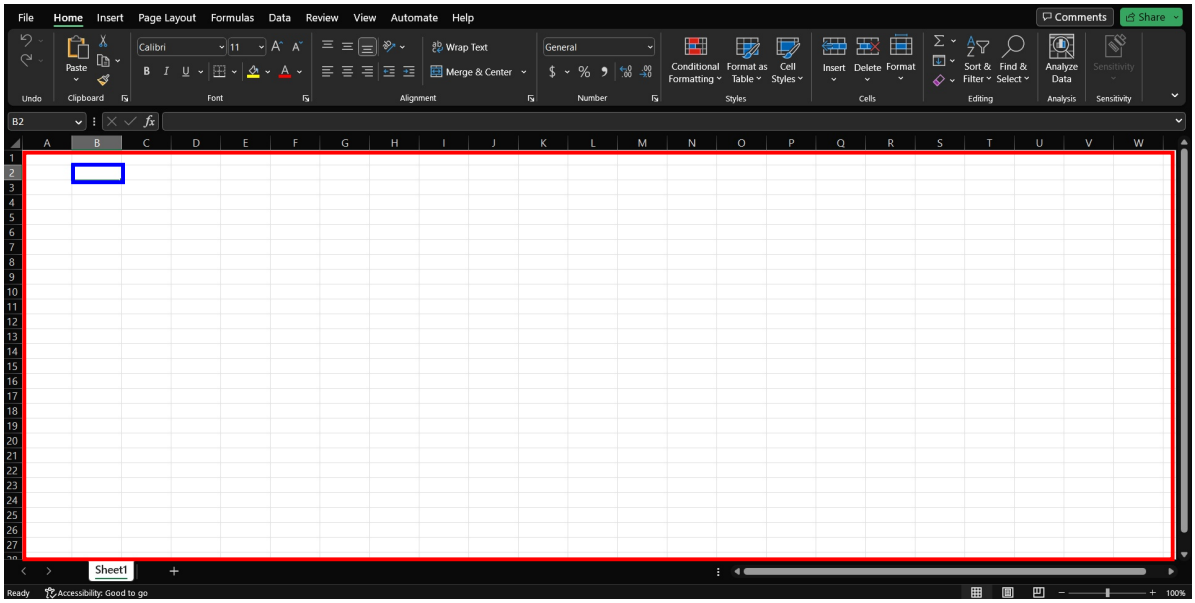


Figure 1.1.2: A spreadsheet (outlined in red) and a cell (outlined in blue).

Launching Microsoft Excel

To open Microsoft Excel, double-click its icon on the desktop, or search for it using the application search bar and then click on it.

Once Excel is open, you must sign in using your Microsoft account in order to create or edit workbooks. If you do not have a Microsoft account, you must create a new one. Follow the steps on the sign in / account creation screens to log in to Excel.

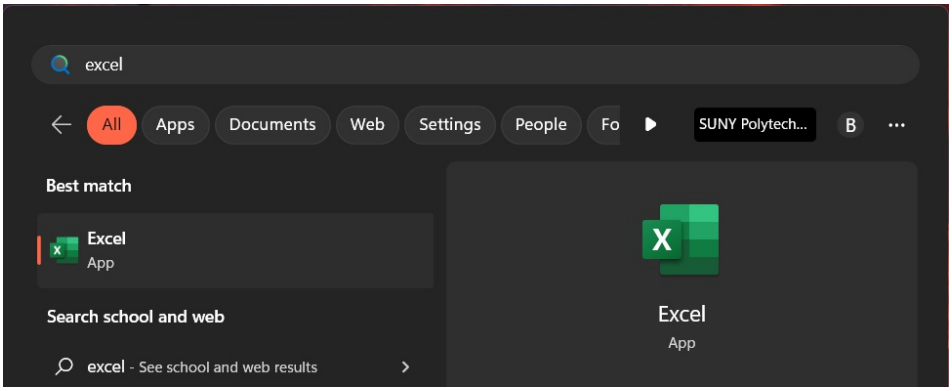


Figure 1.2.1: Excel's result in the Windows 11 application search bar.

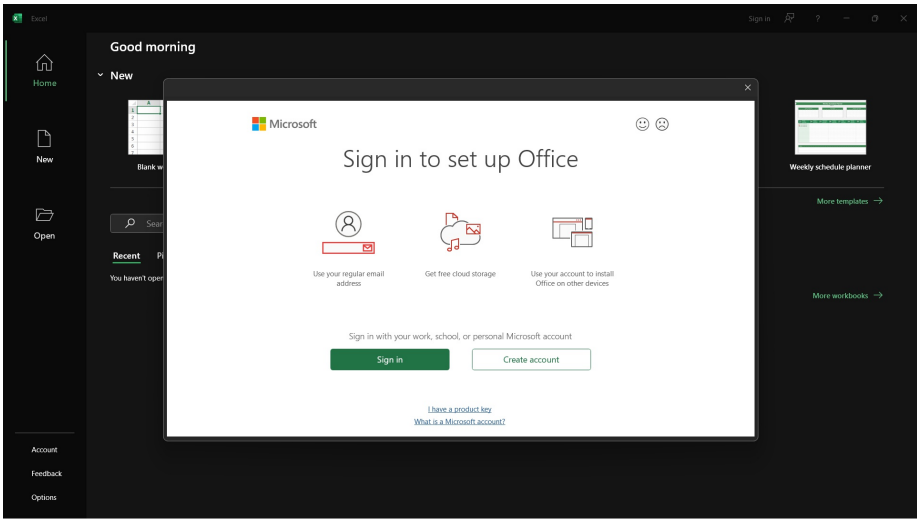


Figure 1.2.2: Excel's login screen.

Opening and Creating Workbooks

Recall that a workbook is the "outermost layer" of an Excel document; in fact, the workbook is the document itself. It can be easy to confuse spreadsheets and workbooks because users often create workbooks that only contain one spreadsheet, and as a result they believe the terms are synonymous. Make sure not to fall for this common misunderstanding.

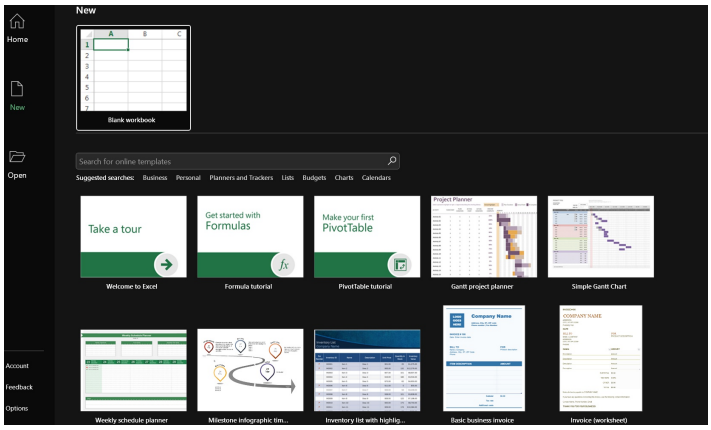


Figure 1.3.1: Excel's workbook creation screen.

Once Excel is open and you have signed into your Microsoft account, you will be met with a screen containing Home, New, and Open headers on the left sidebar. To create a new workbook, click on the New header and click "Blank workbook".

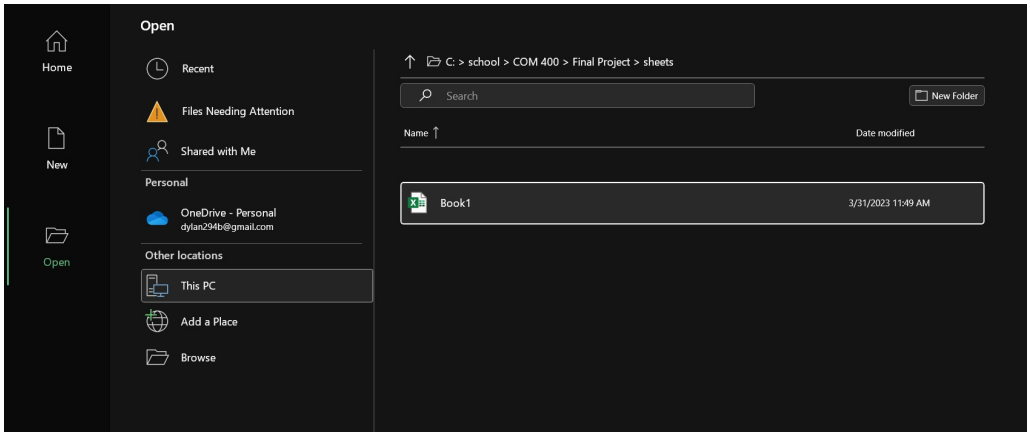


Figure 1.3.2: Excel's workbook opening screen.

To open an existing workbook, click the Open header and navigate to the desired workbook using the "Shared with me" option for shared workbooks, the "OneDrive" option for workbooks saved on the cloud, or the "Browse" or "This PC" options for workbooks saved on your PC.

Using the Spreadsheet Editor

Now that you have created and/or opened a worbook, it is time to begin working on spreadsheets. Before you can start entering data, though, you must understand how to use the spreadshet editor. The editor is divided into 10 sections, or **header menus**.

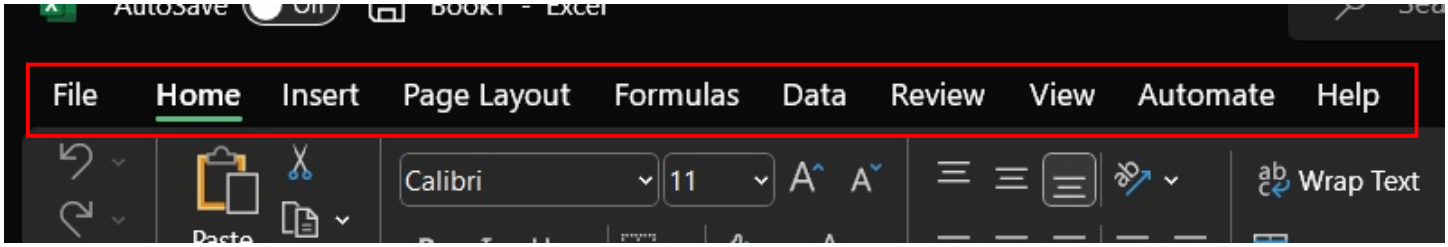


Figure 1.4.1: The header menu of Excel's spreadsheet editor.

File: This section is used for opening and creating workbooks (similarly to when you first opened Excel), as well as saving and sharing workbooks.

Home: The most general (and default) section, used for basic text, cell, and data editing and formatting.

Insert: Used to add new elements to your spreadsheets such as tables, graphs, charts, and symbols.

Page Layout: Used to change the overall organization of your spreadsheets, such as margins, orientation, size, and print settings.

Formulas: Used to add calculations and functions to your spreadsheets, such as summation, statistics, binary and Boolean logic, et cetera.

Data: Used for more complex data editing and analysis, such as detecting data from images, changing data types, and sorting.

Review: Used to view summary data of your workbook such as spell check, data lookup, and translations.

View: Used to change the way the spreadsheet is viewed withing the editor.

Automate: Advanced menu used to create scripts that will perform actions within spreadsheets for you.

Help: Support menu that provides links for Microsoft support, feedback, and Excel changelogs.

Entering Data

Each Excel spreadsheet is comprised of a grid of cells, which are the small white rectangles into which data can be entered. **Text**, numbers, **calculations**, and other functions are some of the various forms of data that can be input into cells.

Single-clicking on a cell will select the entire cell, allowing you to apply changes to the entire cell and the text within, such as changing font size or type, making data bold or italicized, or changing the cell's color. Typing data in while a cell is single-click highlighted will delete all of the data in the cell and replace it with whatever new data you type.

Double-clicking on a cell will allow you to modify specific data that was already entered, such as typing more data in or selecting a specific portion of previously entered data.

Basic calculations are automatically detected and supported when typed into cells, as long as the calculation is preceded by the equals "=" sign. For example, typing "=5+2" into a cell will display the value 7 once the cell is deselected.

To toggle between viewing the results of calculations (default) and seeing the calculations as they were typed in, navigate to the Formulas heading and click the "Show Formulas" option.

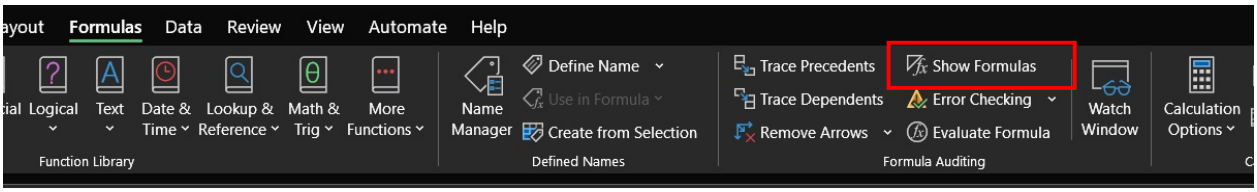


Figure 1.5.1: The location of the "Show Formula" option.

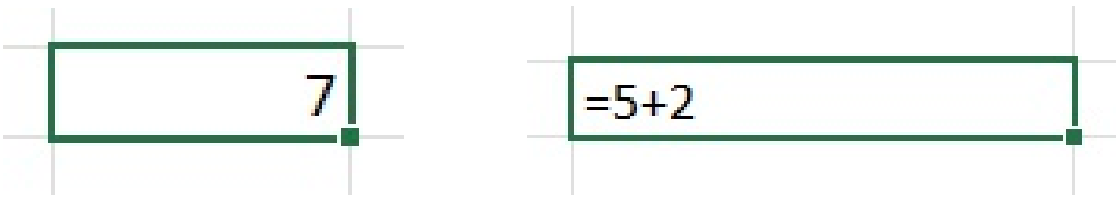


Figure 1.5.2: The displayed result of the calculation "=5+2" with the "Show Formulas" option disabled vs. enabled.

Saving Workbooks

Once you have created a workbook, it is important to save the document so that you do not lose your progress, and you can come back to the workbook later. There are multiple different ways to save workbooks in Excel. To choose how to save your workbook, click the File header option, and select "Save As" from the left menu.

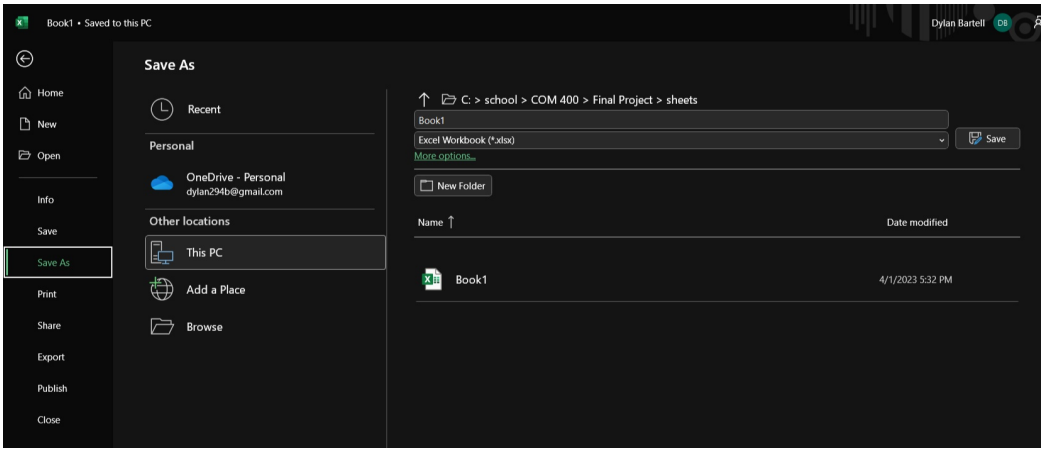


Figure 1.6.1: Excel's workbook saving screen.

Pressing the "**OneDrive**" option will allow you to save the workbook to cloud storage on your Microsoft account. If you save to OneDrive, the workbook will not take up space on your device and the workbook will be accessible from any other device you are signed into Excel on. Additionally, saving the document to OneDrive is required in order to share the document with others or to use the **AutoSave** feature. However, you will need an Internet connection to use this saving method, and this method will no longer be usable if you run out of storage space on your OneDrive.

Pressing the "This PC" or "Browse" icons will allow you to save the workbook to local device storage. You cannot use AutoSave if you use this saving method, but this this saving method is usable regardless of whether or not you are online.

Figure 1.6.2: If a workbook is saved to OneDrive, automatic saving of the workbook can be enabled by clicking the toggle next to the "AutoSave" label at the top left of the editor window.

Chapter 2
Formatting Data, Cells, and Text

You have learned how to use many of the basic features of Excel, including entering data into cells. However, there are many more aspects of managing cell data that you must learn in order to have a broad, strong grasp of data management in Microsoft Excel.

This chapter will go into greater detail on managing cells, and the data (such as numbers and text) that can be entered into them.

As previously explained, a single cell can be selected by clicking on it. It is also possible to select a rectangular grid of cells by clicking the cell that you wish to be in one corner of the grid, dragging the cursor to the cell in the opposite corner of the grid, and releasing. This will select all of the cells in the grid at once. Additionally, you can select a combination of numerous cells and grids of cells by making the selections while holding the [ctrl] key. This will highlight all of the selected cells simultaneously. This is particularly useful for applying changes to a large number of cells at once.

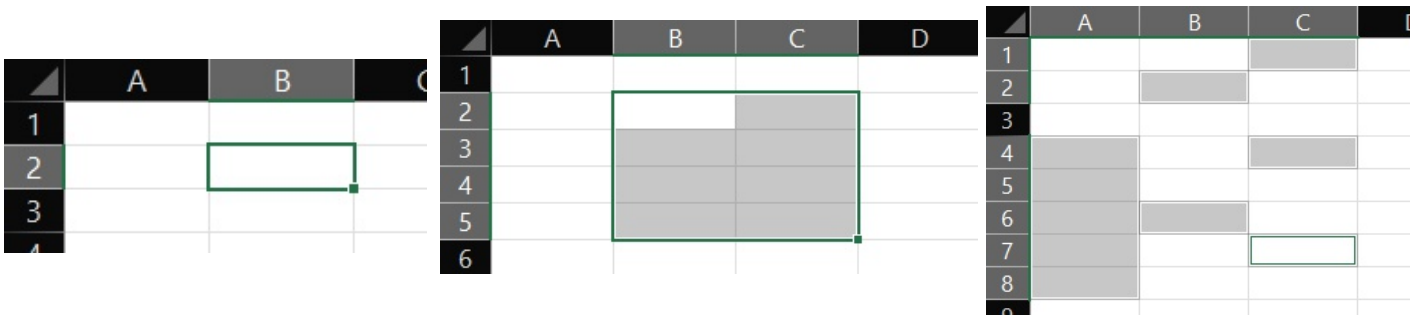


Figure 2.1.1: Left to right: A single cell selection made with a single click, a grid cell selection made by clicking and dragging over a range of cells, and a combinational cell selection made by selecting numerous cells while holding the [ctrl] key.

Moving, Copying, and Deleting Cells

To move a group of selected cells, click the [ctrl]+[X] keys. This will cut the cells and put them on your computer's clipboard. To put the cells in a different location, select the cell where you would like the new upper left corner of the selected group of cells to be. After selecting the destination, click the [ctrl]+[V] keys. The selected cells will be moved to the new location on the spreadsheet.

To copy a group of cells to a new location, the process is very similar to moving groups of cells. After selecting the desired group of cells to be copied, press the [ctrl]+[C] keys. This will put a new copy of the selected group of cells in your computer's clipboard. Select the cell which you would like to be the top-left corner of the new copy of the cells, and then, in the same manner as moving cells, click the [ctrl]+[V] keys. A new copy of the cells will be added to the selected location, while keeping the originally selected cells in their original location as well.

To delete a group of cells, select the cells and then click the [Delete] key on the keyboard. This will erase the contents of all selected cells.

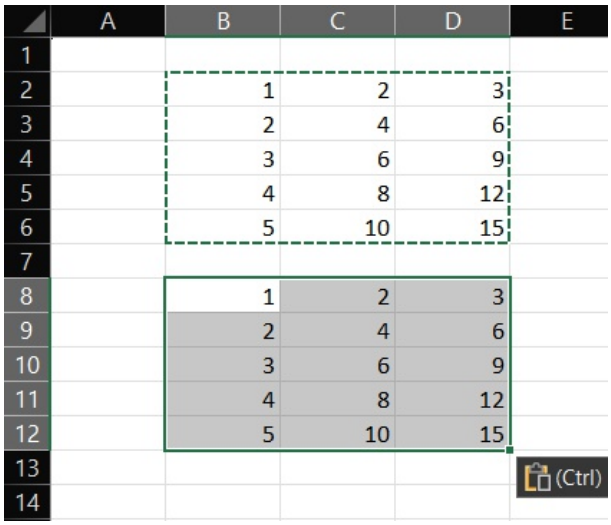


Figure 2.2.1: The result of copying a group of cells. Moving the cells would have the same effect, except that the top (original) data set would be deleted. Deleting the selected group of cells would simply erase all of them.

Using Cell IDs

Figure 2.3.1: Each cell in a Microsoft Excel spreadsheet has an "ID" or "reference", which describes its location within the sheet. This **cell ID** is in the format [column][row], with the **column** being the cell's A to Z column number (as seen at the top of the spreadsheet), and the **row** being the cell's numerical row ID (as seen on the left of the spreadsheet). For example, the cell on the second column of the third row is cell B3.

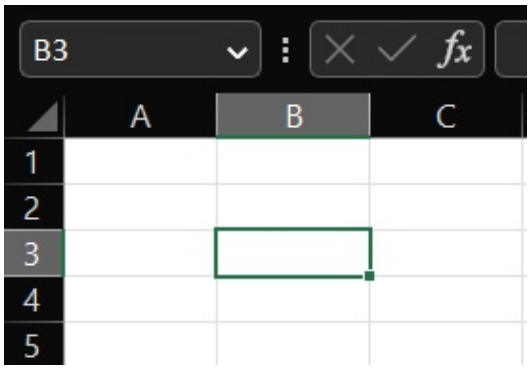


Figure 2.3.2: Cell IDs can be used to directly transfer the cells' data into calculations and functions. To do this, either type the cell's reference ID into the appropriate spot in a calculation, or set your type cursor to the appropriate spot in a calculation and then click the desired cell. This will automatically enter the clicked cell's ID at the type cursor.

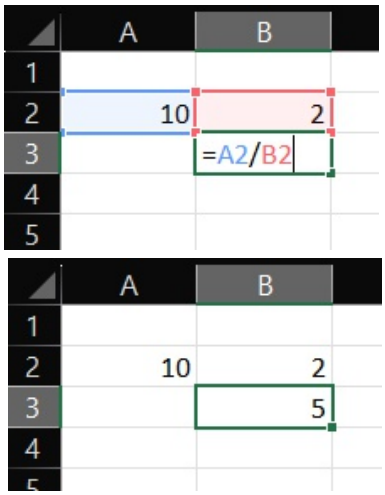


Figure 2.3.3: It is also possible to select an entire range of cells using only two cell IDs. You can select any rectangular grid of cells using the form [corner cell ID]:[opposite corner cell ID]. This is useful for many calculation functions that can operate on large sets of data, such as the =AVERAGE() function, which returns the average of a set of numbers.

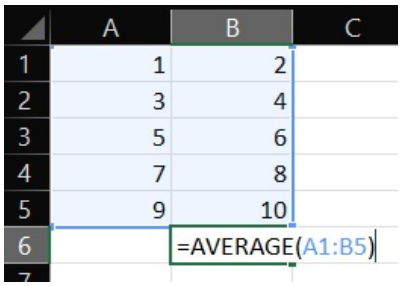
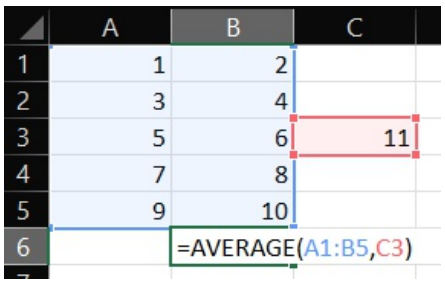


Figure 2.3.4: You can select any combination of specific cell IDs and/or ranges by typing all of these selections separated by commas.

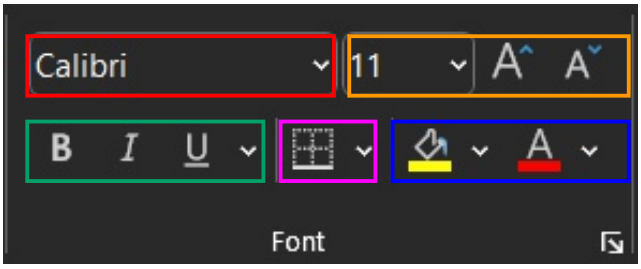


More information on calculation functions is covered in Chapter 4.

Formatting Cells and Text

Although one of Excel's primary purposes is for entry, organization, and calculations of numerical data, it is also important to be able to change the appearance of cells and input data in order to organize them and make them more visually appealing.

Figure 2.4.1: The "Font" section of the Home header, with its sections color coded.



The majority of the basic **text** and cell formatting options can be found within the "**Font**" section under the Home header menu.

The Font Type menu allows you to change the font type of a selected cell or data.

The Font Size options allow you to set, increase, or decrease the font size, respectively.

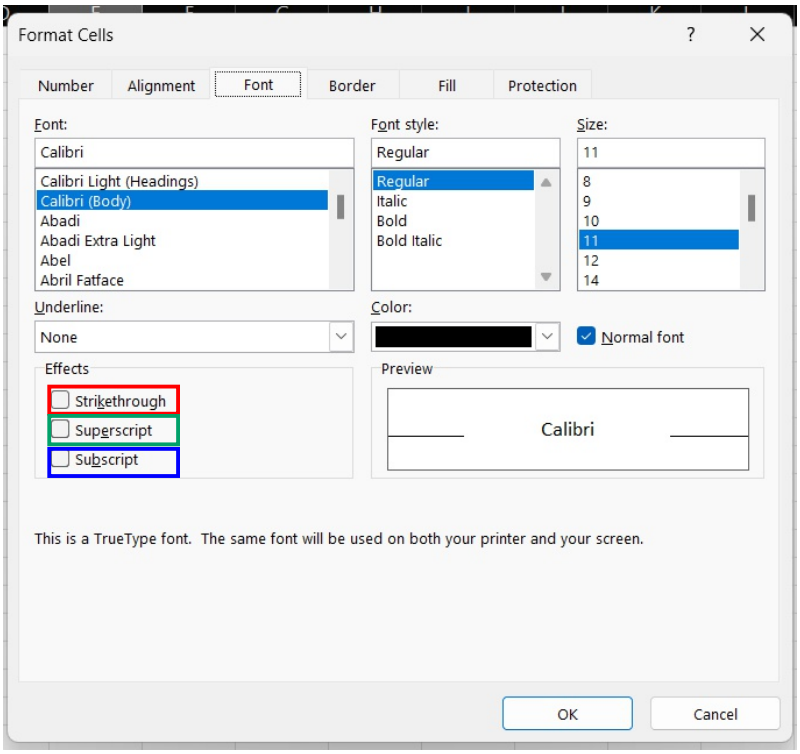
The Text Format options allow you to make data bold, italicized, and/or underlined.

The Color options allow you to change the background color of a cell, or change the font color of selected data.

The Border option allows you to create borders around selected cells. This is very useful for organizing multiple cells into things such as tables.

There are additional text formatting options that can be accessed through the Font header of the Format Cells menu, which is accessible by right-clicking a cell and pressing "Format Cells", or by pressing [ctrl] + [1].

Figure 2.4.2: The Font section of the Format Cells menu, with its options color coded.



Strikethrough - Creates a line through input data.

Superscript - Sets data above the normal text level.

Subscript - Sets data below the normal text level.

Superscript and subscript are often useful for labeling data, such as labeling a logarithmic calculation as "$\log_{10}$ =", or labeling an object's acceleration as "m/s^2".

Changing Cell Data Format

When data is entered in Excel, the program will test the data to determine what **cell data format** the cell should be set to. By default, the format is "General", which does not have a specified number format, but will automatically convert entered data to whatever different data format may be applicable. For example, if you enter "05/12/2022" into a cell, Excel will recognize the data as a date, and as such it will set the cell to the Date format. However, if you enter data such as "Hello", or any other non-numerical text, Excel will not recognize the data as any numerical data format, and as such the data will remain in the General format.

The data format of a cell can be changed manually by right-clicking the cell and clicking the "Format Cells" option, or by pressing the buttons [ctrl] + [1]. Going under the "Number" header will open a menu where you can select which data format to set the cell to.

One major reason why it is important to know how to change the data format of a cell is because once Excel sets the data format of a cell, it can be difficult to get Excel to automatically change the format to a different type. For example, if you enter data such as "2/5" that Excel recognizes as a date, but you wanted to be recognized as a fraction, you would need to manually change the cell's data format in the Format Cells menu.

The next page features a list of the different cell data formats in Excel and how to use them.

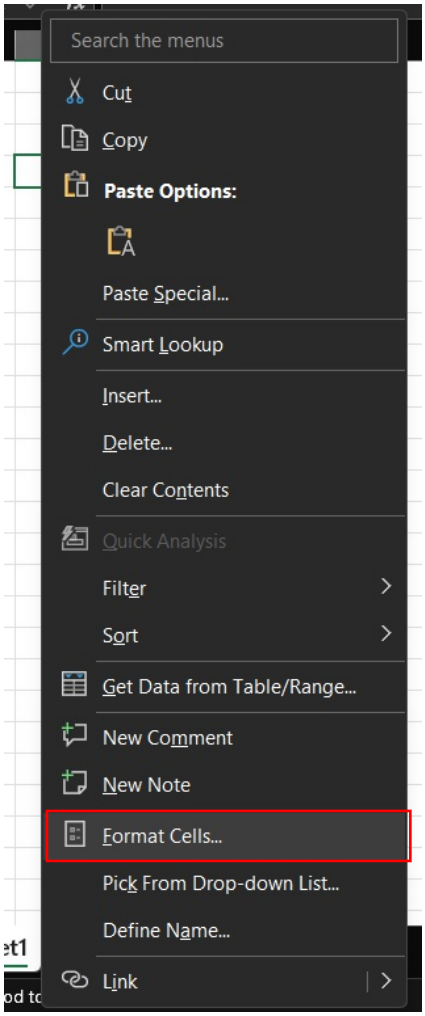
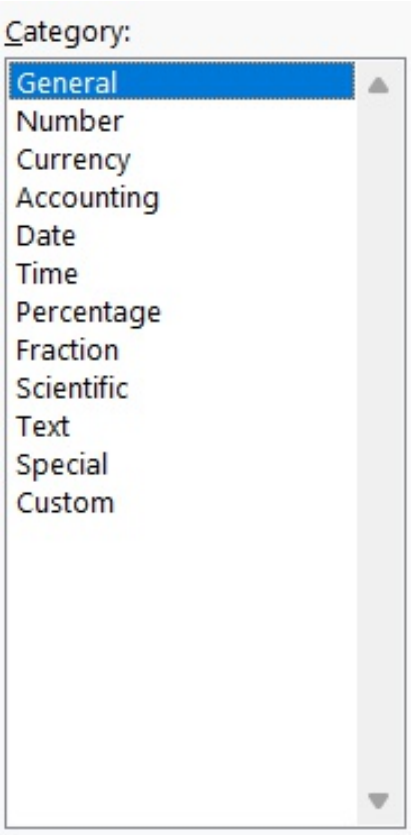


Figure 2.5.1: The "Format Cells" option of the cell right-click menu.

List of Data Formats

Figure 2.6.1: The data format options in the Number section of the Format Cells menu.



General: Default data format, especially useful for integer numbers and letter-only text.

Number: Real numbers, which by default show 2 decimal places.

Currency: Numbers representing money, which are always positive, have (by default) two decimal places, and are preceded by the appropriate currency character.

Accounting: The same as currency, but with the decimal points and currency symbols lined up in a column.

Date: Formats dates appropriately. Can be set to a variety of different specific date formats, such as YYYY-MM-DD, MM/DD/YYYY, or MM/DD.

Percentage: Multiplies cell value by 100 and precedes it with a "%" symbol.

Fraction: Converts entered data to a fraction, up to a specified number of digits in the denominator. For example, ".25" would be converted to "1/4".

Percentage: Multiplies cell value by 100 and precedes it with a "%" symbol.

Fraction: Converts entered data to a fraction, up to a specified number of digits in the denominator. For example, ".25" would be converted to "1/4".

Scientific: Displays input data in scientific notation, with the highest digit being in the ones place, and multiplying the decimal value by a certain number of 10s.

Text: Treats input data as text, even if it could be interpreted as numerical.

Special: Miscellaneous data formats such as zip codes and phone numbers.

Custom: Allows the user to create their own data formats, using one of a variety of existing formats as a starting point.

Chapter 3
Formatting Pages and Images

You have learned how to format and manage the data within Excel spreadsheets in numerous different ways, but it is also very important to learn how to format and manage Excel workbooks and spreadsheets themselves.

There are many aspects of Excel spreadsheets that can be modified to change the overall format of the document, to make the workbook easier to print, or to make the workbook more organized.

Some such modifiable aspects of Excel workbooks are the number of spreadsheet pages the contain, the formatting of each page, and the rows and columns of each spreadsheet.

Many of these features are especially useful when it comes to printing spreadsheets or workbooks, as they alter they layout or format of spreadsheets when they are printed.

There are also many instances where the formatting of spreadsheets must be altered in order to properly present data. There are cases where all the data you have may not fit onto a page unless you alter the sheet's formatting appropriately.

Another useful part of Excel spreadsheet formatting is the insertion of images into sheets. Images can be used to demonstrate data, or just to make spreadsheets look better overall.

Managing Multiple Spreadsheets

Remember that each Excel workbook can contain multiple spreadsheets. In order to create a new spreadsheet, press the "+" symbol at the bottom of the screen. This will create a new sheet to the right of the original one.

Each spreadsheet will maintain its own independent data and cells. To switch between the different spreadsheets, click on the name of the spreadsheet you wish to switch to.

To change the name of a spreadsheet, right click it and select "Rename". This will select the name of the sheet and allow you to retype it.

To delete a spreadsheet, right click its name and click "Delete". If any data is entered into the sheet, a warning message will appear, making sure you really want to delete the sheet. If you are sure you want to delete the sheet and its contents, click "Delete" again.

To hide a spreadsheet, right click its name and click "Hide". To make the spreadsheet visible again, right-click a spreadsheet's name, click "Unhide", and then select the spreadsheet to unhide.

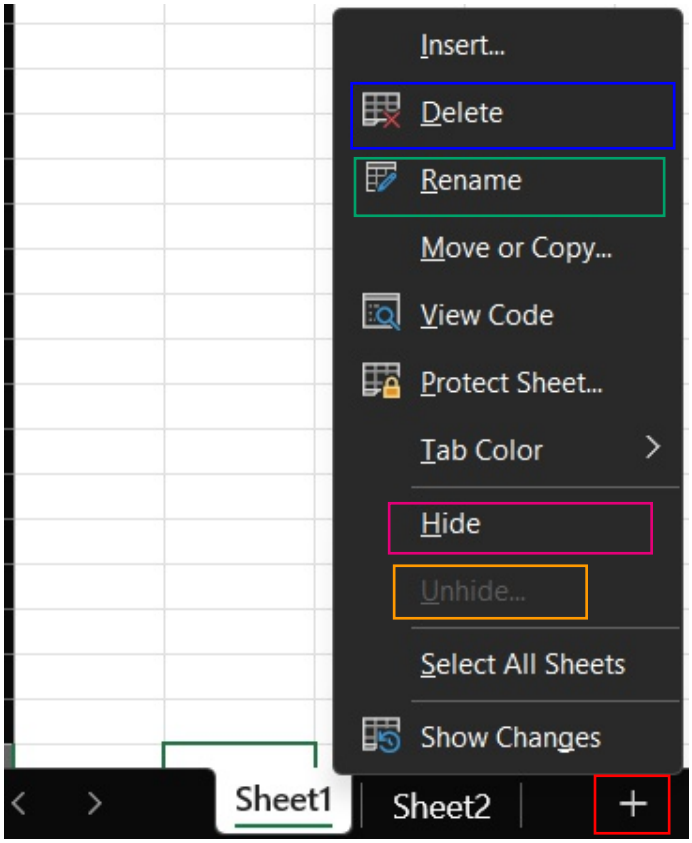


Figure 3.2.1: The right-click spreadsheet selection menu.

Clicking the "+" button would create a new spreadsheet to the right of the selected one (which is, in this case, "Sheet1").

Clicking the "Delete" option will delete the selected spreadsheet.

Clicking the "Rename" option will allow you to retype the name of the selected spreadsheet.

Clicking the "Hide" option will remove the selected sheet from the spreadsheet list.

Clicking the "Unhide" option (which will no longer be greyed out if there are any hidden sheets) will open a menu in which you can select which hidden spreadsheet to unhide.

Changing Page Setup

It may be necessary to change the orientation, page breaks, size, and/or margins of Excel spreadsheets in order to print them properly, or to organize them in a visually appealing manner. All of these options are found under the "Page Setup" section of the Page Layout header.

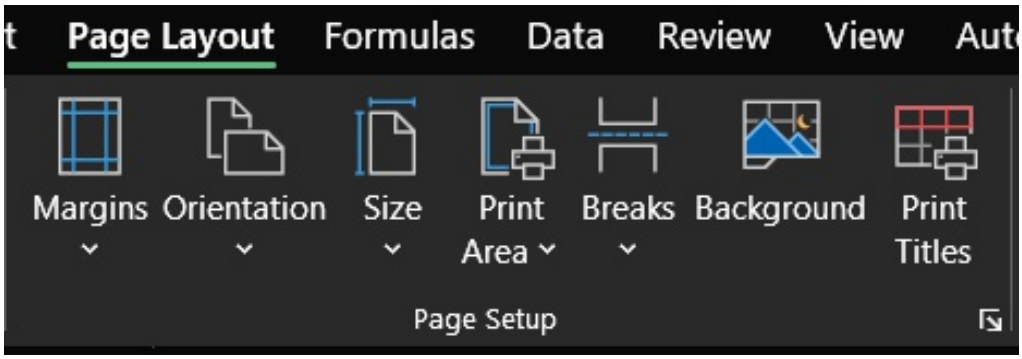


Figure 3.3.1: The "Page Setup" section of the Page Layout header menu.

To change the margins of a spreadsheet, go to the "Margins" option and select one of the default options, or set your own custom margins using the "Custom Margins..." option.

To switch the orientation of a page between portrait and landscape, click the "Orientation" option.

To change the size of a page, click the "Size" option. You can select one of many default size settings, or access more page size options by clicking "More Paper Sizes".

The "Print Area" option allows you to select a specific portion of cells to be used while printing. To use this option, select a grid of cells and then click the option. Printing the workbook after doing this will only print the selected portion. To reset the print area, click the option and select "Clear Print Area". See page 25 for more information on printing workbooks.

To create or remove page breaks, click the "Breaks" option. You can add page breaks, remove page breaks, or reset all page breaks.

Clicking the "Background" option will open a menu in which you can select an image to use as the background of the spreadsheet. You can select a file from your PC's storage, from your OneDrive cloud storage, or from the Internet via Bing Image Search.

The "Print Titles" option allows you to repeat title labels on the left or on the top of a spreadsheet, which will appear when printing. Click "Rows to repeat at top:" to select which rows to copy on the top of the page. Click "Columns to repeat at left:" to select which columns to copy on the left of the page.

Modifying Rows and Columns

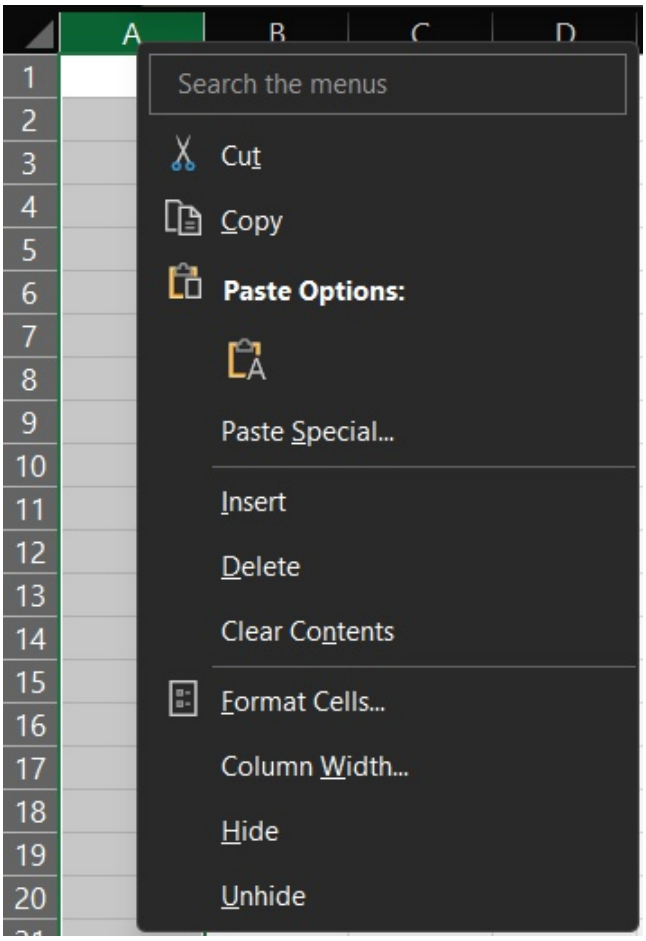


Figure 3.4.1: The right-click menu of a column.

Each Excel spreadsheet has a set of **rows** and **columns** of cells. A cell's column and row values are its ID.

To change the width of a column of cells, right-click the column's letter icon and click "Column Width". This will bring up a menu that will allow you to change the point value for the column's width.

Similarly, to change the height of a row of cells, right-click the row's number icon and click "Row Height", than type in the desired point value for the height.

You can delete an entire row or column of cells by right-clicking the row or column header icon and clicking "Delete". This will shift the right columns to the left, or the bottom rows upwards after deleting the row or column.

Alternatively to deleting a row or column, you can simply clear the contents of the row or column by right-clicking the row or column header and click "Clear Contents". This will delete the entire contents of the row or column without deleting the row or column itself.

To insert a new row or column, right-click a row or column header and click "Insert". This will insert a new empty row or column to the left of the selected column, or above the selected row.

Inserting and Formatting Images

In some cases, it may be useful to insert an image into an Excel spreadsheet. To insert an image, go to the Insert header and click the Illustrations option. Then, click the "Pictures" option.

You will have 3 options for where to insert an image from: your device, a selection of stock images, or from pictures on the Internet.

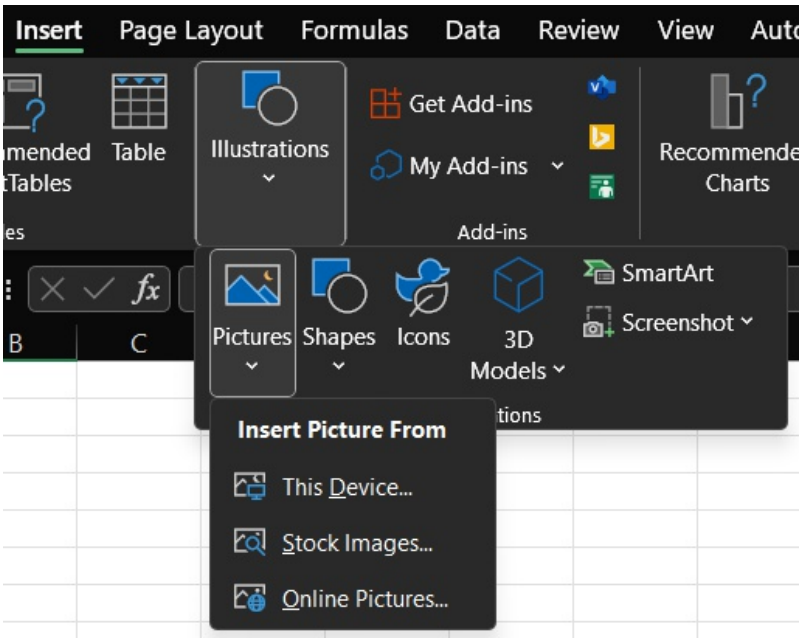


Figure 3.5.1: The menu used to insert pictures into spreadsheets.

To insert an image from your device, click the "This Device" option and naviagate to the desired image on your storage drive. Click the image and select "Insert".

The options to select an image from stock images or from the Internet are quite similar; simply select the option and use the search feature to find the image you want. Once you have picked an image, click it and press "Insert".

After you have inserted the image, you can resize it by clicking on it and dragging the edges to format the image the way you want. Dragging from the corners will keep the image at its original height-to-length scale, while dragging from the center of an edge will compress the image vertically or horizontally.

Chapter 4
Using Calculation Functions and Charts

Entering data is only part of what Excel is useful for. Another large part of why Excel is such a useful tool for data management and analysis is because of its ability to calculate new data based on input data. More advanced calculations can be made using calculation **functions**.

Another important part of data management in Excel is data organization. It is important to format data in a manner that is versatile, useful, and visually appealing. Aside from directly entering data into spreadsheets, another great way to manage data in Excel is through the use of **charts** and other visuals, which organize data in a way that is easier to understand. Many such charts are available to select from, to display data in different ways.

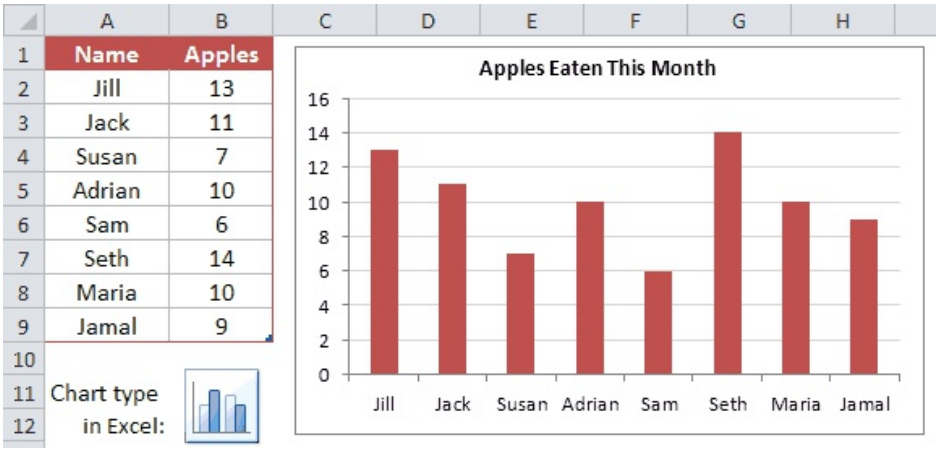


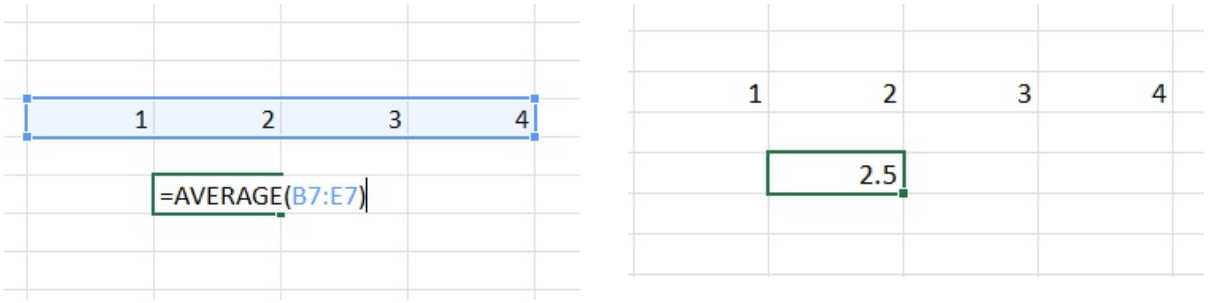
Figure 4.1.1: An example of how Excel is useful for data management and organization, as well as for making visual aids to demonstrate data (in this example, a bar graph).

Using Calculation Functions

Recall that Excel can calculate data directly based on expressions typed into cells, such as "=5+2", which would return a value of 7. Calculation **functions** are slightly different in that they can perform more complex calculations that do not even require users to understand exactly how the calculations are made. For example, =COS([angle value]) will return the cosine of the angle value that was entered, or =STDEV.P([range of data values]) will return the population standard deviation of the entered values.

Although specialized calculation functions are very useful, it is generally preferable to use built-in mathematical operators for simpler calculations. This is because Excel's advanced calculation functions will usually not work if the spreadsheet is opened in a different spreadsheet editor (such as Google Sheets), but calculations using basic operators will. For example, to just add two values, it would be better to use "=A+B" rather than "=SUM(A,B)".

It is possible to perform multiple basic and/or advanced calculations within a single cell. For example, you can find the sum of two averages in one cell using "=SUM(AVERAGE(A,B),AVERAGE(B,C))". However, it may be unclear to a viewer how such a value was calculated in only one step, so it is advisable to either label this calculation or break it down into multiple simpler steps.



Figures 4.2.1: A demonstration of the use of the "=AVERAGE" function. The function takes the values of cells B7 through E7, and returns their average: 2.5. This is the correct average of the values 1, 2, 3, and 4.

List of Functions

The following is a list of some of the most commonly used functions within Excel. All calculations must be preceded by an equals ("=") character as the first character in the cell.

SUM(A1,A2,B1:B3,...) - Returns the sum of all inputs.

ABS(A1) - Returns the absolute value of a single input.

POWER(num,power) - Returns the value of a number raised to a power.

MAX(A1,A2,B1:B3,...) - Returns the maximum of a set of inputs.

MIN(A1,A2,B1:B3,...) - Returns the minimum of a set of inputs.

AVERAGE(A1,A2,B1:B3,...) - Returns the average of a set of inputs.

MOD(dividend,divisor) - Returns the remainder of the dividend divided by the divisor.

PI() - Returns the value of pi (π) accurate to 15 digits.

SQRT(A1) - Returns the positive square root of an input. The value of the input must be positive.

COUNT(A1,A2,B1:B3,...) - Returns the number of cells that contain numbers within the input cells.

COUNTA(A1,A2,B1:B3,...) - Returns the number of cells that contain any values within the input cells. Unlike the standard COUNT, which only counts cells containing numeric values, this function also counts cells containing text, dates, times, et cetera.

MEDIAN(A1,A2,B1:B3,...) - Returns the median of the input values

QUARTILE(range,quartile) - Returns the "quartile" quartile number of the input range. For example, if "quartile" was 3, then the third quartile of the input data would be returned.

TRIM(text) - Returns the given text, with all spaces removed except for the single spaces between words.

VALUE(text) - Returns the given text, converted to a number data format.

PROPER(text) - Returns the input text with the first letter of each word capitalized.

Organizing Data

It is important to organize Excel spreadsheets such that they are not only visually appealing, but also functionally versatile. Data should be grouped and separated in a logical manner, and tables of data should optimally be surrounded by borders (see page 10) to distinguish them from other spreadsheet elements.

Multiple cells can be merged and centered by highlighting them and clicking the "Merge & Center" option under the Home menu. This is especially useful for creating labels for wide sets of cells.

When making calculations, it is best to use cell IDs, rather than literal number values, as inputs. This way, if the input values are changed, the results of the calculations will be automatically adjusted.

Figure 4.4.1 below is an example of a poorly organized spreadsheet. Note the lack of use of borders and label centering, and the use of direct numerical values in functions. If this user needs to modify an input value, they will also have to edit all of the subsequent calculations based on that value. The "Show Formulas" option under the Formulas header is enabled, and the first three =AVERAGE calculations return 90, 70, and 80, respectively.

	Name		
	Alex	Joe	Mary
Test 1	90	65	80
Test 2	80	70	90
Final Exam	100	75	70
Average	=AVERAGE(90,80,100)	=AVERAGE(65,70,75)	=AVERAGE(80,90,70)
Class Average	=AVERAGE(90,70,80)		
Average from class 2:	85		
Class grade difference:	=ABS(80-85)		

Figure 4.4.1

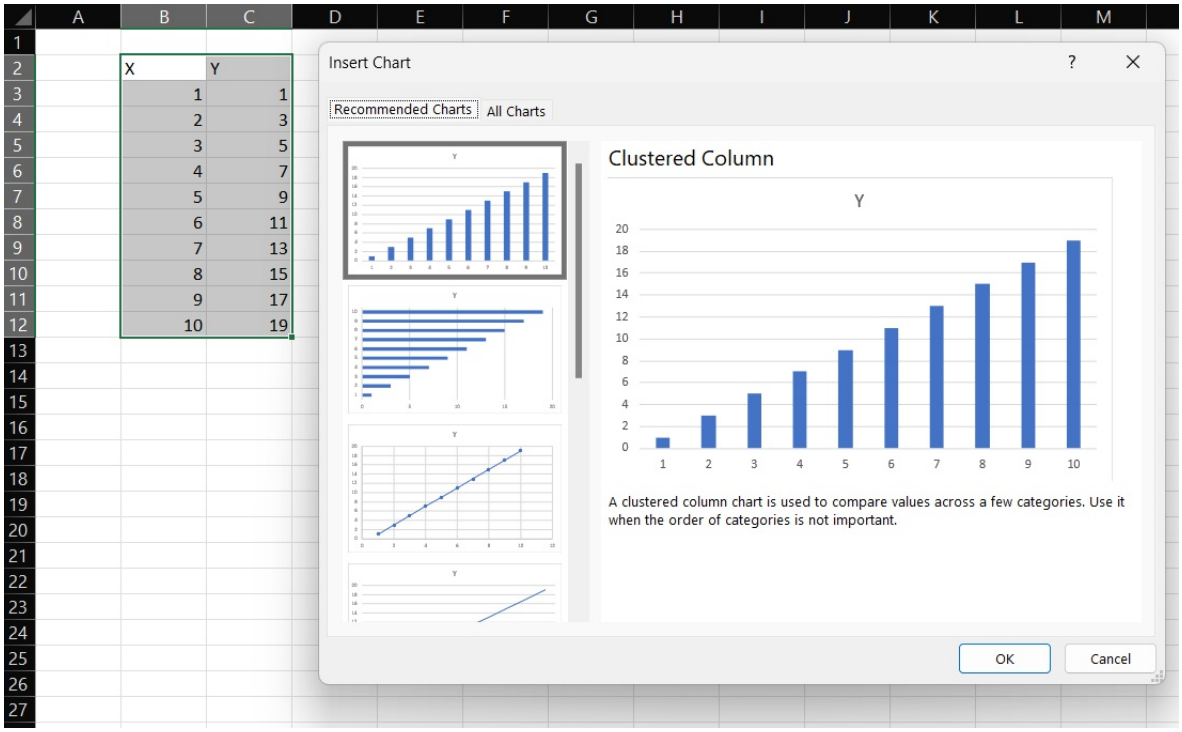
Figure 4.4.2 below is an example of a well organized spreadsheet. Note the use of borders and label centering, and the use of cell IDs rather than directly typing numbers into the calculations. This user will have an easier time reading their well-organized tables, and they will have a lot less work to do if they need to modify an input value because the subsequent calculations will be automatically updated with the new values.

	A	B	C	D
1				
2		Alex	Joe	Mary
3	Test 1	90	65	80
4	Test 2	80	70	90
5	Final Exam	100	75	70
6	Average	=AVERAGE(B3:B5)	=AVERAGE(C3:C5)	=AVERAGE(80,90,70)
7				
8	Class Average:	=AVERAGE(B6:D6)		
9				
10	Average from class 2:	85		
11				
12	Class grade difference:	=ABS(B8-B10)		

Figure 4.4.2

Charts, graphs, and other visual elements can be created from data in Excel to make data easier to understand or to visualize data characteristics such as change over time.

To create a chart, select a set of data and click the "Recommended Charts" option under the "Charts" section of the Insert menu. This will open a menu that will give previews of various different charts based on the selected data. To insert a chart, select it from the list and click "OK".



X	Y
1	1
2	3
3	5
4	7
5	9
6	11
7	13
8	15
9	17
10	19

Figure 4.5.1: The Insert Chart menu, used to add charts to spreadsheets.

You can select which series and values to display on your chart. To do this, click on the chart, then click the bottom of the three icons that appear to the right of the chart. This will open the Chart Filters menu. To show or hide data or series, click on its element in the menu, then click "Apply".

To add a trendline to the chart, which will help visualize the overall rate of change of the data, click on the chart and then click the top "+" option that appears to the right of the chart. In this menu, check the box that says "Trendline", then select which series of data to create a trendline using.

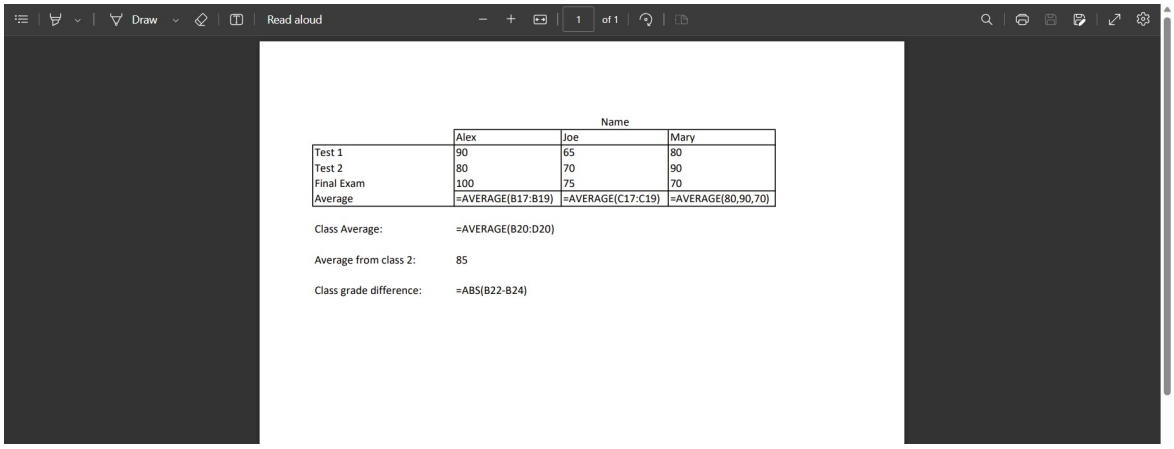
Chapter 5
Sharing Documents

Once you are finished creating a workbook in Microsoft Excel, you may want to share it with others. This is often the case if you are creating a spreadsheet for an employer or other organization.

Aside from directly sharing workbooks with other users, you can print them into physical copies as well.

Printing to physical copies is not the only way to save workbooks in a visual, presentation-ready format. You can also **export** workbooks as PDF or XPS files, or in a variety of other file formats such as text documents, images, other workbook formats, and more.

	Name		
	Alex	Joe	Mary
Test 1	90	65	80
Test 2	80	70	90
Final Exam	100	75	70
Average	=AVERAGE(B17:B19)	=AVERAGE(C17:C19)	=AVERAGE(80,90,70)
Class Average:	=AVERAGE(B20:D20)		
Average from class 2:	85		
Class grade difference:	=ABS(B22-B24)		



Figures 5.1.1 and 5.1.2: An example of a spreadsheet being saved and opened as a PDF. Saving a workbook or spreadsheet(s) as a PDF or other visual file format will store the sheet(s) in easy to read, as well as easy to share, manner.

Sharing Workbooks

In order to share a workbook, the workbook must be saved to cloud storage, typically through OneDrive (see page 6).

To share a workbook with others, open the document and click the green "Share" button in the top-right corner of the window, then click "Share" again on the submenu that appears.

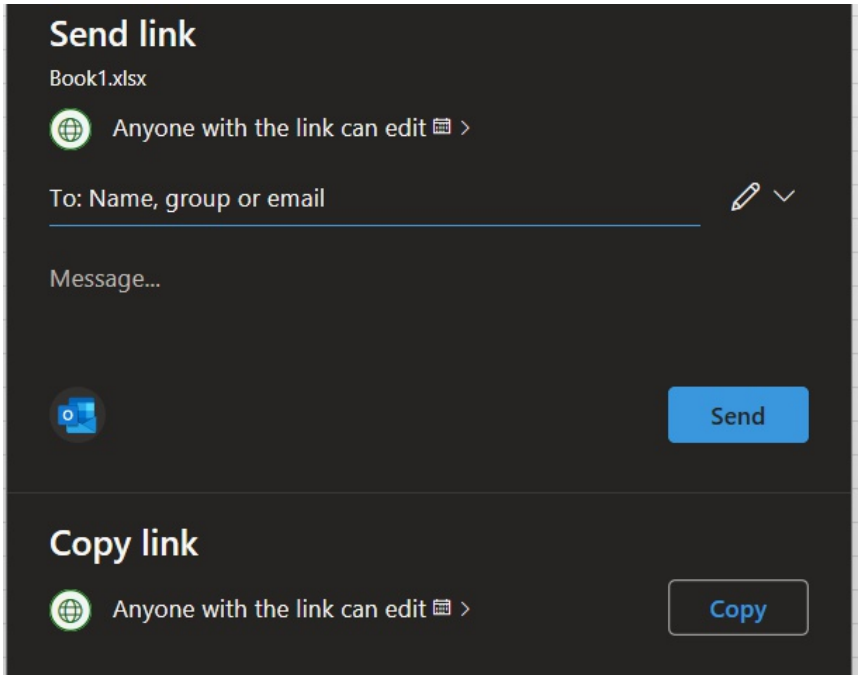


Figure 5.2.1: Excel's document sharing menu.

To share the workbook with a specific person, enter their email into the "To:" menu, type a message (optional), and press "Send".

Alternatively, a workbook can be quickly shared with numerous people via link sharing. To enable link sharing, click the option below the "Copy link" header, select the desired range and permissions of other users, then click "Apply". To copy the link to send to others, click "Copy". Remember that this link can be shared to numerous other people, including users with possible malicious intentions. Never share Excel documents with valuable personal information or information that you would not want the world to see.

Printing Workbooks

To print a workbook, open it, click the File header, then click "Print". The menu that appears can be used to customize the print settings of the document.

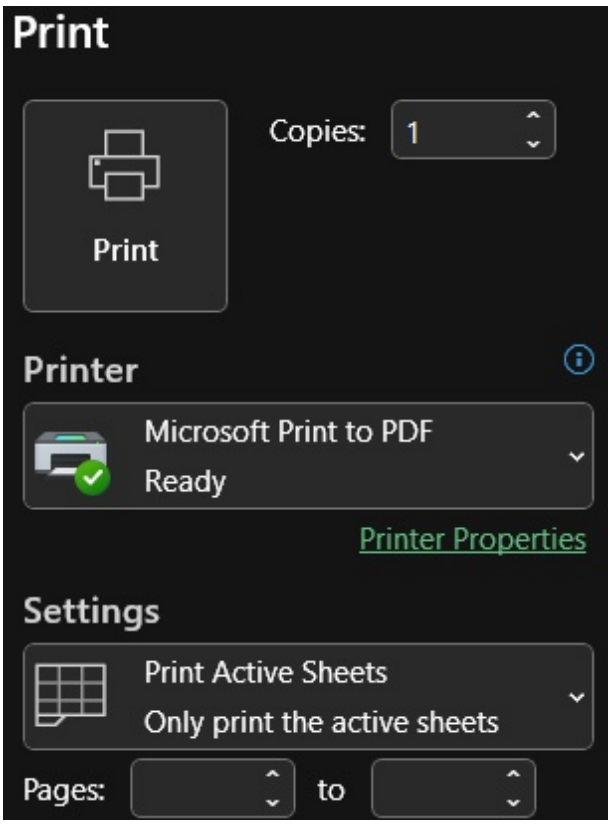


Figure 5.3.1: Excel's document printing menu.

Clicking the "Printer" option will allow you to select the destination of the workbook. There are many different options for how to print the document, including simply sending it to a printer, faxing it, or saving it as a file. Some of the available file formats are PDF and XPS.

The options under the "Settings" title allow you to pick which pages to print. You can select only the active sheets, the entire workbook, or a specific selection of sheets (entered in the "Pages:" fields below).

The "Copies" option allows you to select how many copies of the workbook to print.

Once you have selected the desired settings, click "Print" to perform the printing operation.

The previous page went over how to not only print workbooks, but also how to save them as PDF or XPS file formats. It is possible to **export** workbooks in a number of other different file formats as well.

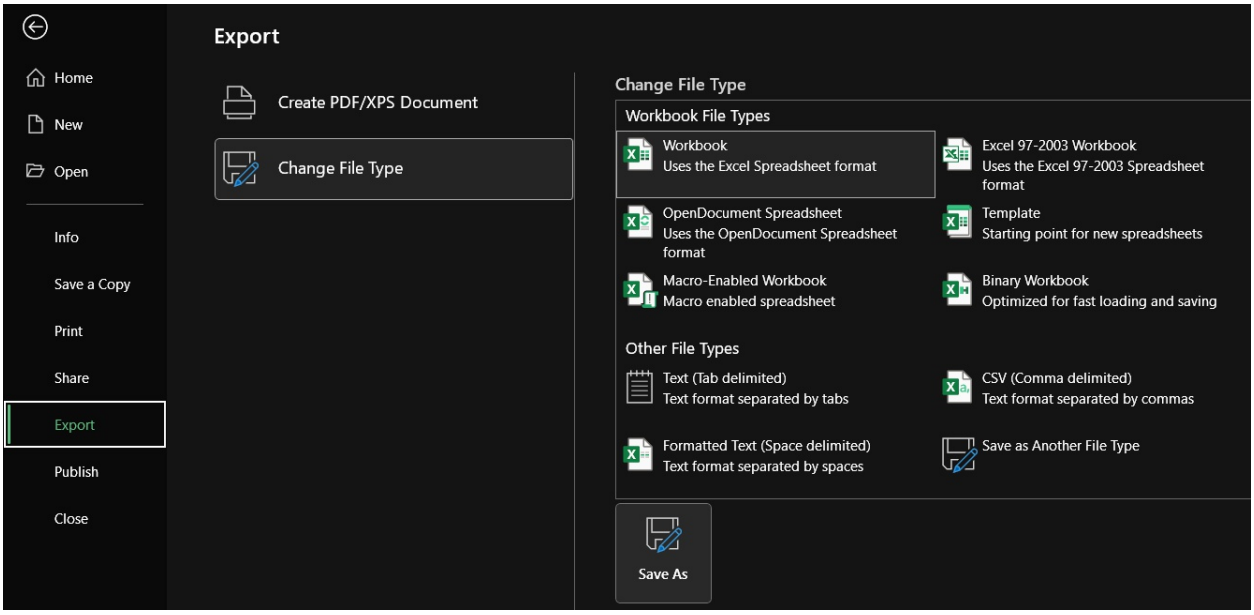


Figure 5.4.1: Excel's document exporting menu.

To export a workbook as a different file format, go under the File header, then click "Export" on the left menu. This will open the workbook export menu.

The first options allow you to save the workbook as an XPS or PDF document, in essentially the same manner as in the "Print" menu.

The option below - "Change File Format" - allows you to export workbooks into many different file formats. Click one of the file type options, then click "Save As" to choose the name of the exported file, and its file location.

There are many additional file formats to choose from that are not listed on the "Change File Format" menu. To access these other file formats, choose "Save as Another File Type", then click "Save As". This will open a menu, similarly to the other file format options, in which you can choose the name of the exported file, as well as its location. In addition to this, you can click the "Save as type:" field (which by default is "Excel Workbook"). Clicking this field will allow you to select from a number of previously unlisted file formats, such as Unicode Text, workbook files for older versions of Excel, and text files for different Mac operating systems.

Index

Glossary

A

AutoSave: An option for saving workbooks that will cause changes to the workbook to be automatically saved, without the user having to manually save the document. This option is only available if the workbook is saved to cloud storage (OneDrive).

C

Calculation: An equation, typed into a cell, that will return the resulting value. Cells with calculations in them must have an equals sign "=" as their first character. **Functions** are more complex calculations that perform advanced processes in a single step.

Cells: The small white "boxes" that **spreadsheets** are made up of. Cells are the general units of data entry in Excel. Cells can contain many different forms of data, such as calculations, text, or numbers.

Cell data format: The type of data that Excel considers a cell to contain, and formats as such. For example, a cell with a date data format may organize its data as MM/DD/YYYY.

Cell ID: The cell's location in the spreadsheet (in the format of [column][row]. A cell's ID can be input into another cell, and as a result the value of the cell will be returned. This is very useful for calculations because it can allow calculations to automatically update their results if input cells are modified.

Chart: An object in an Excel spreadsheet that displays input data in a visual manner.

Column: A complete vertical "line" of cells in Excel. The columns are named with letter values, which can be seen at the top of the spreadsheet editor.

E

Export: To save a workbook as a file. There are many different file formats that Excel workbooks can be saved as.

F

Font: The style and format of text. Some elements of font that can be changed are its type, size, and color.

Function: An advanced calculation process that is performed in a single step. Each function has a name and a type of data that it accepts. For example, the function "=AVERAGE(range)" returns the average of all of the values that were sent to it.

Glossary, cont'd

H

Header menu: The line of menu options that can be selected from at the top of the Excel workbook editor (File, Home, Insert, Page Layout, and so on). Each header menu contains its own important features that can be used to modify cells, spreadsheets, and/or workbooks.

O

OneDrive: Microsoft's cloud storage system. Each Microsoft account has a certain amount of storage available on its OneDrive. Since this is cloud storage, its contents can be accessed anywhere as long as you have a device with an Internet connection. Saving a document to OneDrive allows you to share it with other users and use the AutoSave feature.

R

Row: A complete horizontal "line" of cells in Excel. The rows are named with number values, which can be seen at the left side of the spreadsheet editor.

S

Spreadsheet: A "page" in Microsoft Excel. Each spreadsheet is comprised of a grid of **cells**, and each **workbook** is comprised of one or more spreadsheets. While cells are used to store text and numerical data, workbooks can store images, charts and other objects.

T

Text: Character data entered in Excel. All words, numbers, and characters count as text, and as such their font and text format can be modified.

W

Workbook: A Microsoft Excel document comprised of one or more **spreadsheets**. Workbooks can be **exported** as files, printed, or shared with others.