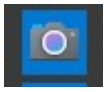
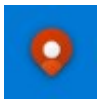
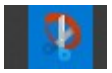
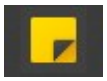
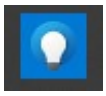
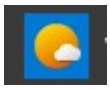
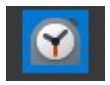
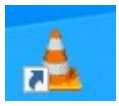
Chapter - 1

Introduction to Computer

1.1 ICONS IN COMPUTER

 Recycle Bin	 My Computer	 Control Panel
 Adobe Reader XI	 Word	 Notepad
 Paint	 PowerPoint	 Calculator
 Mail	 Folder	 Google
 Start	 Search	 Settings
 Command Prompt	 Microsoft Store	 Microsoft Edge

 Camera	 Calendar	 Photos
 Groove music	 Maps	 Snip & Sketch
 Sticky Notes	 Tips	 Video Editer
 Voice Recorder	 Weather	 Alarms & Clocks
 Local Disk	 DVD Drive	 Downloads
 Network	 Firefox	 VLC media player

1.2 What is Computer?

COMPUTER stands for Common Operating Machine Purposely Used for Technological and Educational Research. The word "**Computer**" comes from the word "**compute**" which means to calculate. Different definition of computer are as follows:

A computer is a machine that can be instructed to carry out sequences of arithmetic or logical operations automatically via computer programming.

A programmable electronic device designed to accept data, perform prescribed mathematical and logical operations at high speed, and display the results of these operations.

A **computer** is an electronic device that manipulates information, or data. It has the ability to store, retrieve, and process data. You may already know that you can use a **computer** to type documents, send email, play games, and browse the Web.

1.3 Why Computer?

Computers can make our jobs become easier. They can be used for communicational purposes (internet), to store and calculate data and to write up massive documents multiple times while only needing to write it up once.

Computers are also used for entertainment value; to play games, watch movies and play music etc.

- Increase your productivity.
- Connects you to the Internet.
- Can store vast amounts of information and reduce waste.
- Helps sort, organize, and search through information.
- Get a better understanding of data.
- Keeps you connected

1.4 Computer Applications

Figure1.1: Applications of computer

1.5 History of Computer

1	**First Generation** The period of first generation: 1946-1959. Vacuum tube based.
2	**Second Generation** The period of second generation: 1959-1965. Transistor based.
3	**Third Generation** The period of third generation: 1965-1971. Integrated Circuit based.
4	**Fourth Generation** The period of fourth generation: 1971-1980. VLSI microprocessor based.
5	**Fifth Generation** The period of fifth generation: 1980-onwards. ULSI microprocessor based.

1. First Generation Computers :-

- The period of first generation was from 1946-1959.
- The computers of first generation used vacuum tubes as the basic components for memory and circuitry for CPU (Central Processing Unit).
- These tubes are like electric bulbs and produces a lot of heat.
- They were very expensive and only large organizations were able to afford it.
- It speed was very low.

The main features of the first generation are −

- Vacuum tube technology
- Unreliable
- Supported machine language only
- Very costly
- Generated a lot of heat
- Slow input and output devices
- Huge size
- Need of AC
- Non-portable
- Consumed a lot of electricity

2. Second Generation Computers :-

- The period of second generation was from 1959-1965.
- In this generation, transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines.
- In this generation, magnetic cores were used as the primary memory and magnetic tape and magnetic disks as secondary storage devices.
- In this generation, assembly language and high-level programming languages like FORTRAN, COBOL were used.

The main features of second generation are −

- Use of transistors
- Reliable in comparison to first generation computers
- Smaller size as compared to first generation computers
- Generated less heat as compared to first generation computers
- Consumed less electricity as compared to first generation computers
- Faster than first generation computers
- Still very costly
- AC required
- Supported machine and assembly languages

3. Third Generation Computers :-

- The period of third generation was from 1965-1971.
- The computers of third generation used Integrated Circuits (ICs) in place of transistors.
- A single IC has many transistors, resistors, and capacitors along with the associated circuitry.

The main features of third generation are −

- IC used
- More reliable in comparison to previous two generations
- Smaller size
- Generated less heat
- Faster
- Lesser maintenance
- Costly
- AC required
- Consumed lesser electricity
- Supported high-level language

4. Fourth Generation Computers :-

- The period of fourth generation was from 1971-1980.
- Computers of fourth generation used Very Large Scale Integrated (VLSI) circuits.
- VLSI circuits having about 5000 transistors and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generation.

The main features of fourth generation are −

- VLSI technology used
- Very cheap
- Portable and reliable
- Use of PCs
- Very small size
- Pipeline processing
- No AC required
- Concept of internet was introduced
- Great developments in the fields of networks
- Computers became easily available

5. Fifth Generation Computer :-

- The period of fifth generation is 1980-till date.
- In the fifth generation, VLSI technology became ULSI (Ultra Large Scale Integration) technology, resulting in the production of microprocessor chips having ten million electronic components.
- This generation is based on parallel processing hardware and AI (Artificial Intelligence) software.
- AI is an emerging branch in computer science, which interprets the means and method of making computers think like human beings.
- All the high-level languages like C and C++, Java, .Net etc., are used in this generation.

1.6 Some computer types of this generation

- Desktop
- Laptop
- NoteBook
- UltraBook
- ChromeBook

1.7 Different parts of Computer

1. **Hardware**: - Hardware is basically anything which you can touch with your finger.
2. **Software**: - For computer hardware to work it must follow a set of instructions that is supplied to it as software.

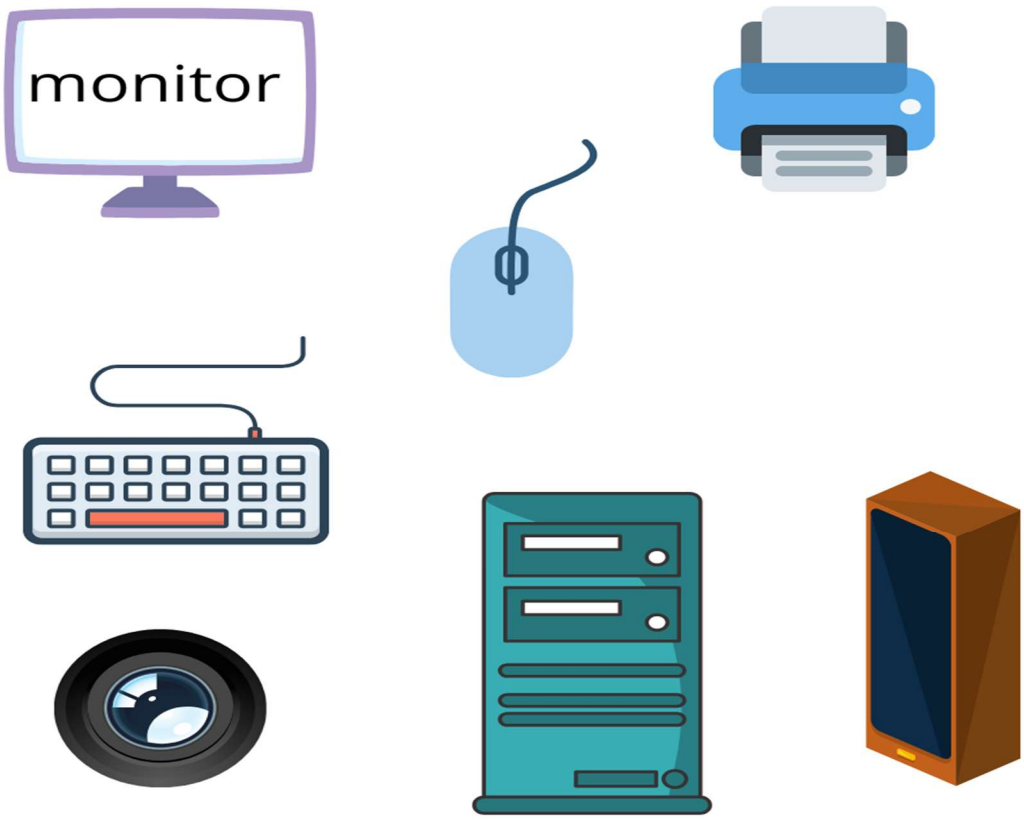


Figure1.2: Hardware Components of Computer

Figure1.3: Software Components of Computer

1.8 Bit and Byte Concept

- Bit is one digit, either 0 or 1. (binary digits)
- Byte is any combination of 0 or 1.
- A **byte** consists of 8 adjacent binary digits (bits), each of which consists of a 0 or 1.
- Computer only understand 0 or 1.

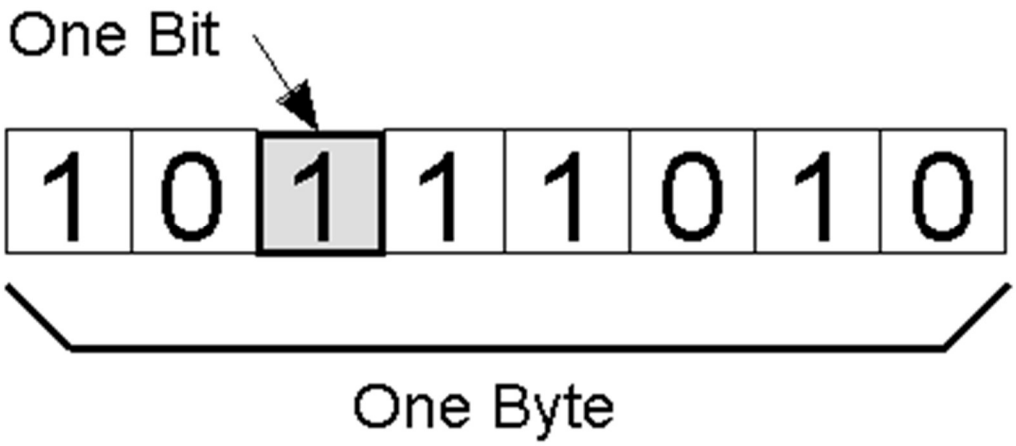


Figure1.4: Bit and Byte Concept

Chapter - 2

Keyboard

2.1 Introduction to Keyboard

A computer keyboard is an input device used to enter characters and functions into the computer system by pressing buttons or keys of keyboard. It is the primary device used to enter text. A keyboard typically contains keys for individual letters, numbers and special characters as well as keys for specific functions. A keyboard is connected to a computer system using a cable or a wireless connection.

Keyboard keys (buttons) typically have a set of characters engraved or printed on them and each press of a key typically corresponds to a single written symbol. However, producing some symbols may require pressing and holding several keys simultaneously or in sequence. While most keyboard keys produce letters, numbers or symbols (characters), other keys or simultaneous key presses can prompt the computer to execute system commands. Whether you're writing a letter or calculating numerical data, your keyboard is the main way to enter the information into your computer.

The keys on your keyboard can be divided into several groups based on their function:-

- Typing (alphanumeric) keys: - These keys include the same letter, number, punctuation, and symbol keys found on a traditional typewriter.
- Control keys: - These keys are used alone or in combination with other keys to perform certain actions. The most frequently used control keys are Ctrl, Alt, the Windows logo key Picture of the Windows logo key, and Esc.
- Function keys: - The function keys are used to perform specific tasks. They are labelled as F1, F2, F3, and so on, up to F12. The functionality of these keys differs from program to program.
- Navigation keys: - These keys are used for moving around in documents or webpages and editing text. They include the arrow keys, Home, End, Page Up, Page Down, Delete, and Insert.
- Numeric keypad: - The numeric keypad is handy for entering numbers quickly. The keys are grouped together in a block like a conventional calculator or adding machine.

The following figure shows how these keys are arranged on a typical keyboard

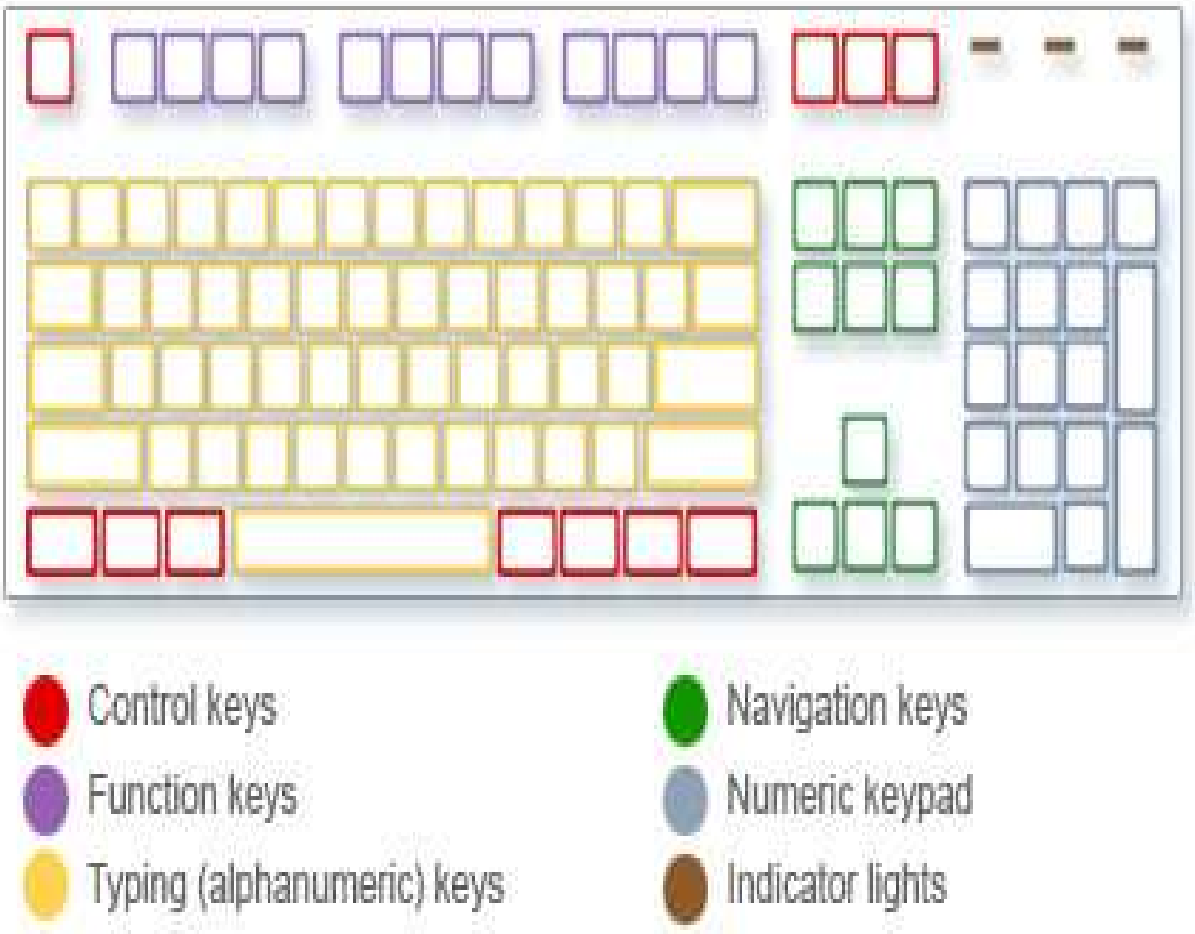


Figure2.1: Picture of keyboard showing types of keys

In addition to letters, numerals, punctuation marks, and symbols, the typing keys also include:-

- Shift.
- Caps Lock.
- Tab.
- Enter.
- Spacebar.
- Backspace.

Key name	How to use it
Shift	Press Shift in combination with a letter to type an uppercase letter. Press Shift in combination with another key to type the symbol shown on the upper part of that key.
Caps Lock	Press Caps Lock once to type all letters as uppercase. Press Caps Lock again to turn this function off. Your keyboard might have a light indicating whether Caps Lock is on.
Tab	Press Tab to move the cursor several spaces forward. You can also press Tab to move to the next text box on a form.
Enter	Press Enter to move the cursor to the beginning of the next line. In a dialog box, press Enter to select the highlighted button.
Spacebar	Press the Spacebar to move the cursor one space forward.
Backspace	Press Backspace to delete the character before the cursor, or the selected text.

2.2 Using Keyboard shortcuts

Keyboard shortcuts are ways to perform actions by using your keyboard. They're called shortcuts because they help you work faster. In fact, almost any action or command you can perform with a mouse can be performed faster using one or more keys on your keyboard.

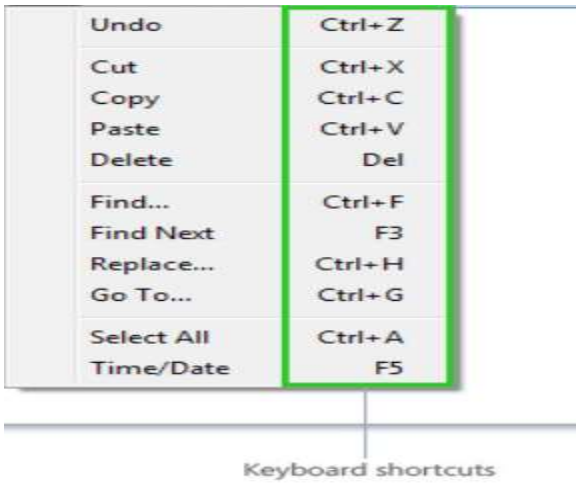


Figure2.2: Keyboard Shortcuts

2.2.1 Useful shortcuts

The following table lists some of the most useful keyboard shortcuts:-

Press this	To do this
Windows logo key	Open the Start menu
Alt + Tab	Switch between open programs or windows
Alt + F4	Close the active item, or exit the active program
Ctrl + S	Save the current file or document (works in most programs)
Ctrl + C	Copy the selected item
Ctrl + X	Cut the selected item
Ctrl + V	Paste the selected item
Ctrl + Z	Undo an action
Ctrl + A	Select all items in a document or window
F1	Display Help for a program or Windows
Windows logo key + F1	Display Windows Help and Support
Esc	Cancel the current task
Application key	Open a menu of commands related to a selection in a program. Equivalent to right-clicking the selection.

2.2.2 Using navigation keys

The navigation keys allow you to move the cursor, move around in documents and webpages, and edit text. The following table lists some common functions of these keys:-

Press this	To do this
Left Arrow, Right Arrow, Up Arrow, or Down Arrow	Move the cursor or selection one space or line in the direction of the arrow, or scroll a webpage in the direction of the arrow
Home	Move the cursor to the end of a line or move to the top of a webpage
End	Move the cursor to the end of a line or move to the bottom of a webpage
Ctrl + Home	Move to the top of a document
Ctrl + End	Move to the bottom of a document
Page Up	Move the cursor or page up one screen
Page Down	Move the cursor or page down one screen
Delete	Delete the character after the cursor, or the selected text; in Windows, delete the selected item and move it to the Recycle Bin
Insert	Turn Insert mode off or on. When Insert mode is on, text that you type is inserted at the cursor. When Insert mode is off, text that you type replaces existing characters.

2.2.3 Using the numeric keypad

The numeric keypad arranges the numerals 0 to 9, the arithmetic operators + (addition), - (subtraction), * (multiplication), and / (division), and the decimal point as they would appear on a calculator or adding machine.

These characters are duplicated elsewhere on the keyboard, of course, but the keypad arrangement allows you to rapidly enter numerical data or mathematical operations with one hand.

Figure2.3: Numerical Keyboard

To use the numeric keypad to enter numbers, press Num Lock. Most keyboards have a light that indicates whether Num Lock is on or off. When Num Lock is off, the numeric keypad functions as a second set of navigation keys (these functions are printed on the keys next to the numerals or symbols).

PrtScn (or Print Screen):- PrtScn captures an image of your entire screen (a "screen shot") and copies it to the Clipboard in your computer's memory. From there you can paste it (Ctrl + V) into Microsoft Paint or another program and, if you want, print it from that program.

ScrLk (or Scroll Lock):- In most programs, pressing Scroll Lock has no effect. In a few programs, pressing Scroll Lock changes the behaviour of the arrow keys and the Page Up and Page Down keys; pressing these keys causes the document to scroll without changing the position of the cursor or selection. Your keyboard might have a light indicating whether Scroll Lock is on.

Pause/Break: - This key is rarely used. In some older programs, pressing this key pauses the program or, in combination with Ctrl, stops it from running.

Chapter - 3

Notepad

Notepad is a generic text editor included with all versions of Microsoft Windows that allows you to create, open, and read plaintext files. If the file contains special formatting or is not a plaintext file, it cannot be read in Microsoft Notepad. The image is a small example of what the Microsoft Notepad may look like while running.

3.1 How to open Windows Notepad?

Users who are using Microsoft Windows can run Microsoft Notepad (notepad.exe) by following the steps below.

- **Windows 10**

1. On the Windows desktop, find the Windows Search Box.
2. In the search box, type notepad.
3. Click the Notepad option in the search results.

- **Windows 8**

1. Go to the Windows Start Screen.
2. Type notepad and in the search results, click the Notepad option.

- **Windows 7 and earlier**

1. Click Start
2. In the Run box, type notepad and press Enter or Click the Start.
3. In the Start menu, click Programs or All Programs, then click the Accessories folder.
4. Click the Notepad icon.

3.2 How to create a text file using Notepad

Open Notepad and type the text you want in the file. Once done, save the file by clicking File and then Save. When saving the file, make sure the file is saved with a ".txt" extension.

Or

On the Windows desktop or in any folder, right-click an empty spot. In the pop-up menu, select New and then Text Document. After this is done, a file should appear named "New Text Document". Double-click this file to open the text document, or rename the file to the name of your choice and then open the file.

3.3 Can you insert a picture in Notepad?

No. Notepad is a plaintext editor and does not support pictures. If you want to insert pictures, consider using WordPad instead of Notepad. Keep in mind that if a WordPad document contains pictures, it must be saved as an .RTF (rich text file) and not a .TXT (plain text file).

3.4 Can you center text in Notepad?

No. Notepad is a plaintext editor and does not support the ability to center text, alignment, or other formatting.

3.5 Where is Notepad on my Apple Mac?

The Apple macOS does not include Notepad. Use the TextEdit program instead.

3.6 Notepad Alternatives

- Trying to create anything else other than a basic plain text file can be difficult in Notepad. If you are looking for a free alternative to Notepad, we highly recommend Notepad++, which is an excellent free and open source alternative. Notepad++ supports syntax highlighting, regular expressions, autocomplete, and much more.
- If you're using Microsoft Windows and looking for a rich text editor that offers text formatting, alignment, fonts, and images consider WordPad. WordPad is also included in all versions of Microsoft Windows.

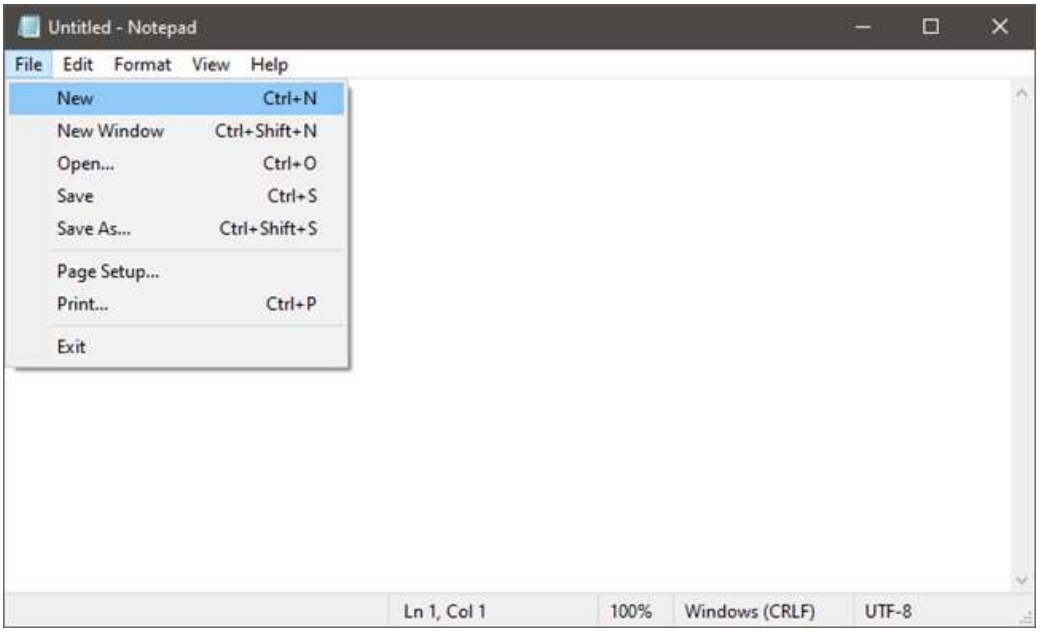


Figure3.1: The File menu from Notepad

1. Create, open, and save text files with Notepad

The choices you have in the File menu are New, New Windows, Open, Save, Save As, Page Setup, and Print. As you can see, many of these commands have keyboard shortcuts as well. You might already be familiar with some of them since they are the same in nearly every Windows application.

Creating and saving text documents in Notepad is simple: open Notepad, start typing, and then edit and format the text as you see fit. Once you are finished, use the Save As command to save your work. The default folder is the OneDrive folder in Windows 10, and the My Documents folder in Windows 7. You can change this quite easily: use the Save As command, browse to your preferred folder, and click Open. Notepad will remember your choice. Keep in mind that your files are saved with a .txt extension and in plain text.

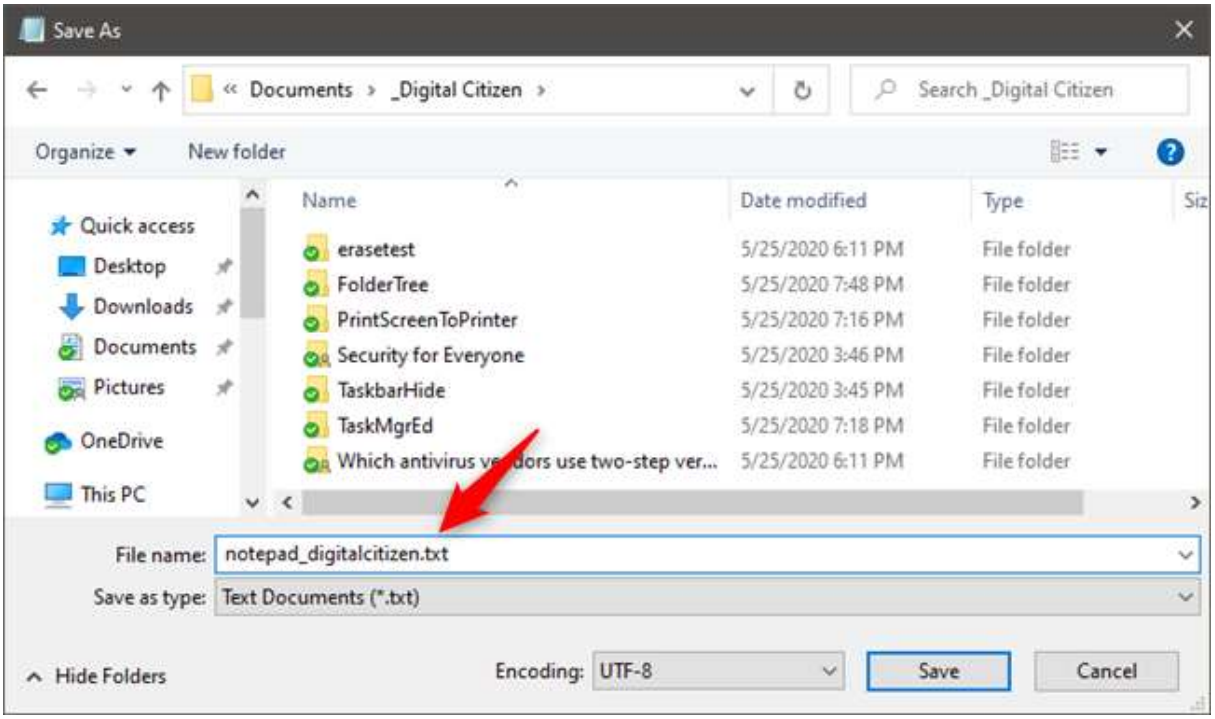


Figure3.2: Saving a document with Notepad0

2. Use Notepad to make simple text edits

The Edit menu offers a few choices, but again, everything on this menu should be familiar to anyone who has used Windows. All the Edit choices have associated keyboard shortcuts. Note that most of the commands are greyed out until there is text selected in the Notepad window.

The first item on the Edit menu is Undo/Redo, which can be useful when you are editing the document. What appears in this place depends on what you have been doing. If you have just used the Undo command or pressed Ctrl + Z, you should see the Redo command at the top of the list (and its keyboard shortcut, Ctrl + Y).

The rest of the menu – Cut, Copy, Paste, Delete, Find, Find Next, Replace, Go To, Select All, and Time/Date, are standard in nearly all Windows programs that deal with documents.

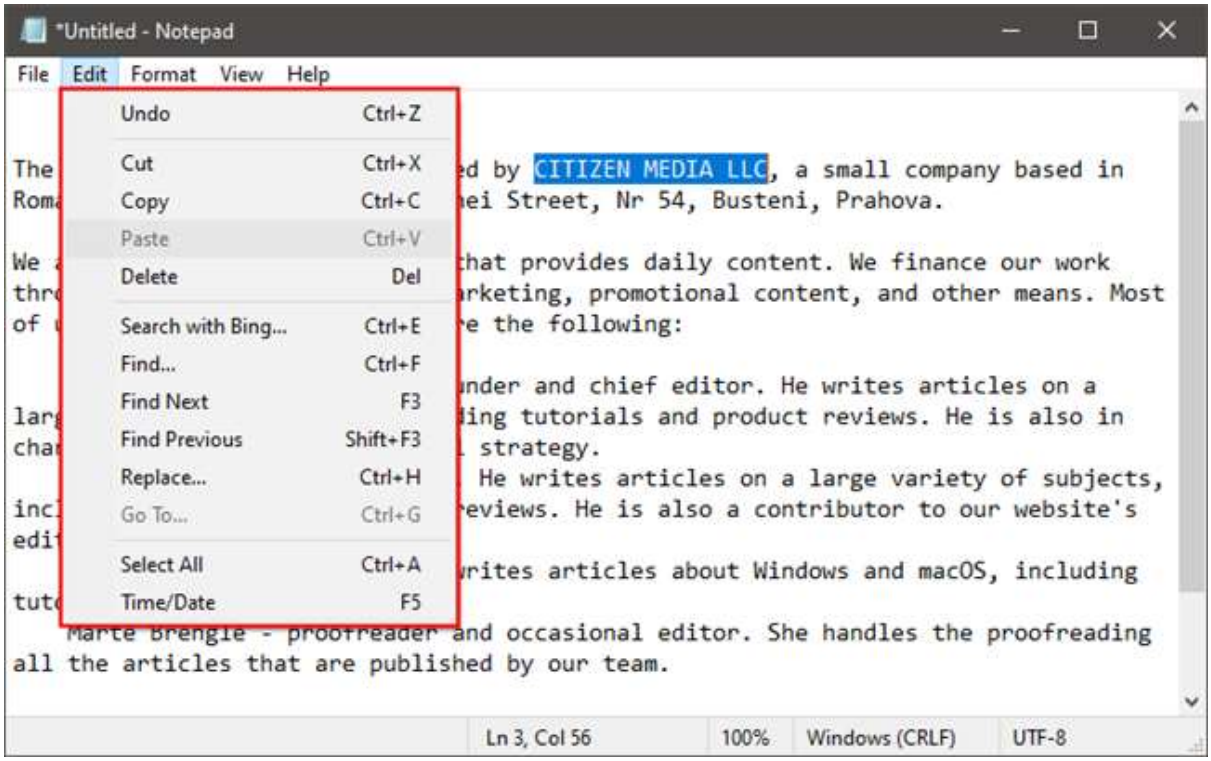


Figure3.3: Notepad's Edit menu

3. Search and replace text in Notepad documents

Find, Find Next, and Replace are used to search and replace text in the document, while Go To can be used to navigate through it. To search for or replace a piece of text, select the Find option (keyboard shortcut Ctrl + F) or the Replace (Ctrl + H) option, depending on what you want. That makes Notepad open a box where you can type the text you're looking for in the "Find what" field. If you want to replace text, the Replace window also gives you a "Replace with" field. Either way, both Find and Replace include the same few search options:

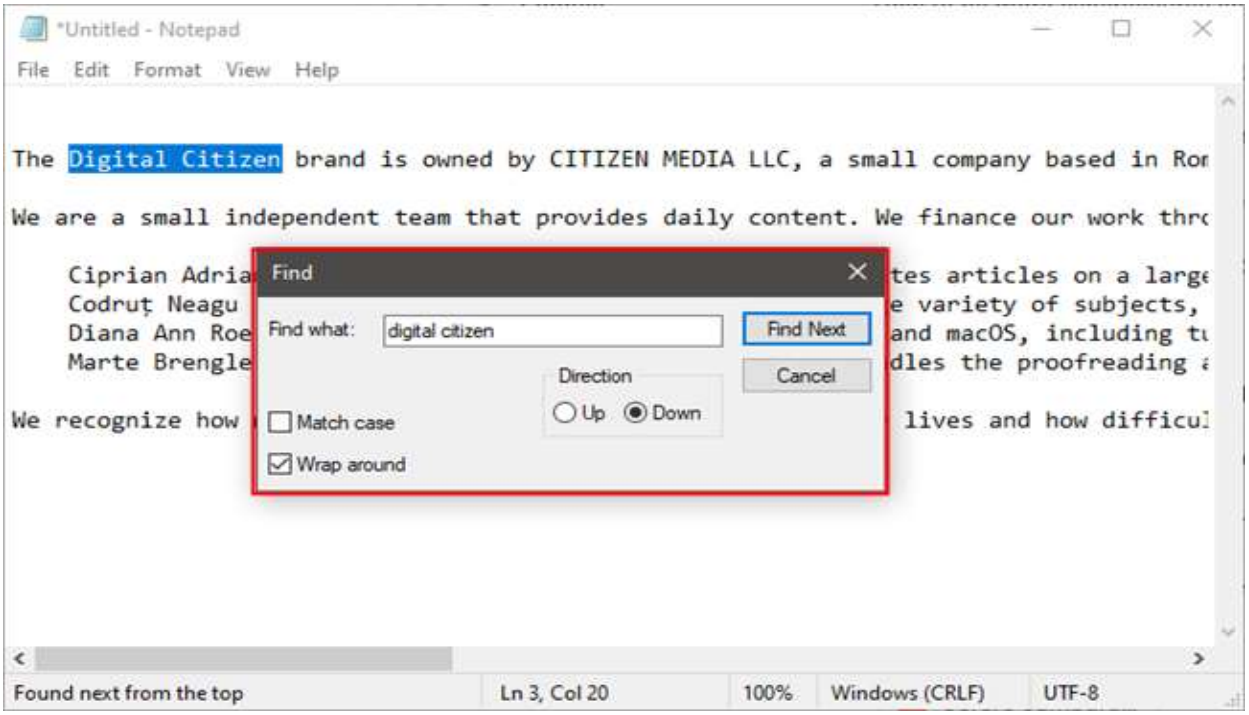


Figure3.4: Using Notepad to find text in a document

You can decide whether the search should “Match case” the text and choose the Direction to be either Down or Up. Down means that the search is made starting from where your cursor is inside the text document until the end of the document. Up, on the other hand, performs the search from the cursor’s position upwards, up to the beginning of the document. Unfortunately, neither option ensures that a search is done on the entire document unless you’ve placed the cursor at either the start or the end of the document.

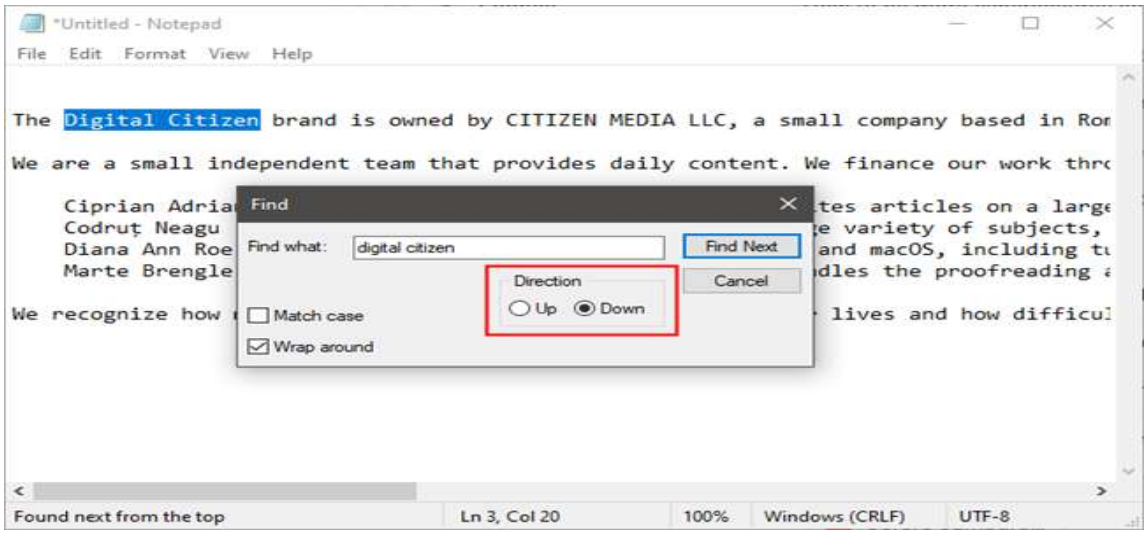


Figure3.5: Choosing the search direction in Notepad

Fortunately, you can ensure that your searches are performed on the entire document, from beginning to the end, by selecting the "Wrap around" setting. When Wrap around is on, Notepad uses your other search options too. However, if the Direction is set to Down, when it reaches the end of the document, Notepad automatically continues the search from the beginning and never stops. Similarly, if you set the Direction to Up, when the search reaches the beginning of the document, Wrap around automatically continues the search from the end of the document.

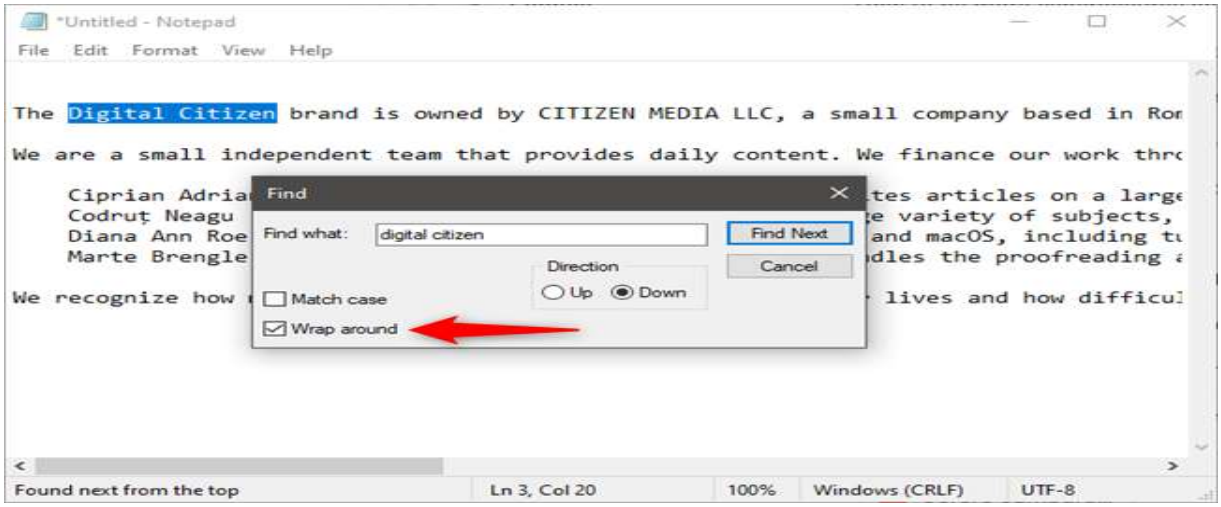


Figure3.6: The Wrap around setting from Windows 10's Notepad

Go To is a less familiar command. You use Go To for jumping to a particular numbered line in the document. Go To only works if Word Wrap is turned off. If Word Wrap is on*, Go To* is greyed out.

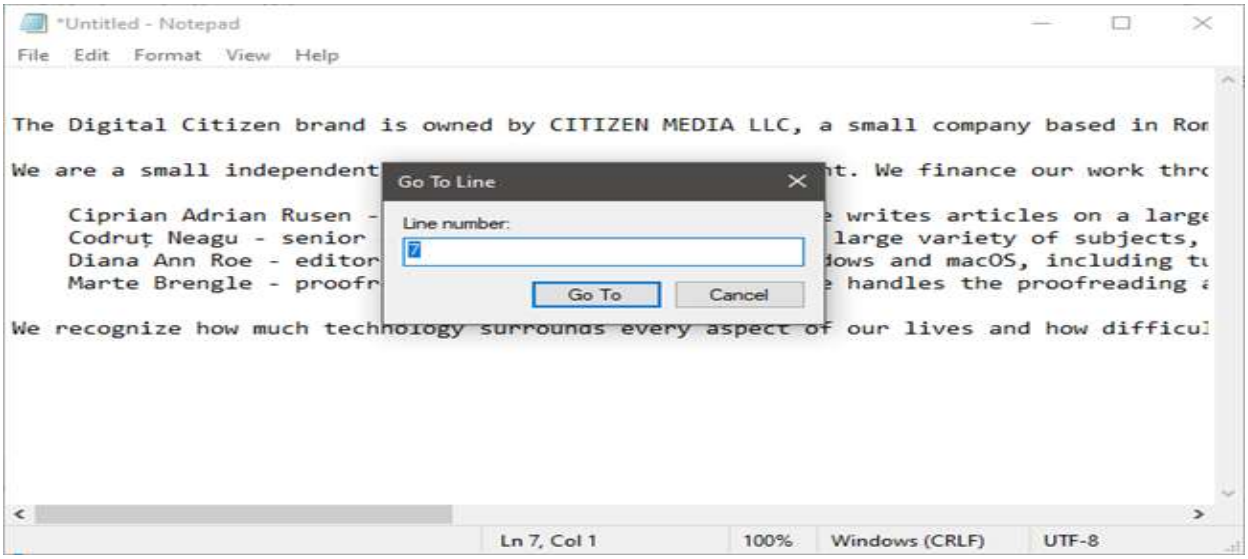


Figure3.7: The Go To function from Notepad

4. Turn Word Wrap on or off

The Format menu offers you only two choices: Word Wrap and Font. For some unknown reason, Notepad has always come with Word Wrap turned off. This means everything you type ends up on one long line until you press Enter, which starts another long line.

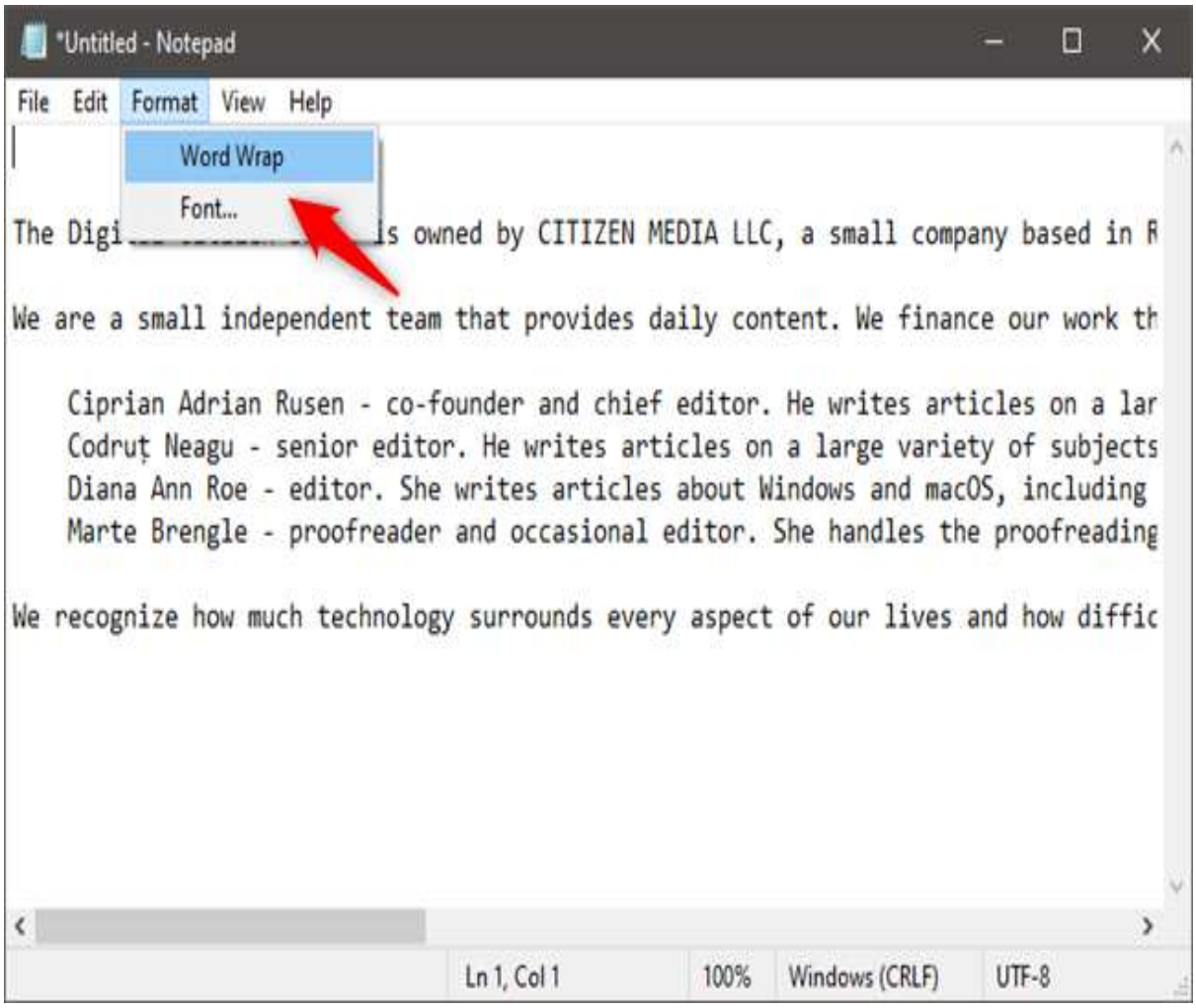


Figure3.8: Word Wrap in Notepad

You have the option of pressing Enter when your typing approaches the right margin of the Notepad window, but that makes the lines some arbitrary length depending on the size of your window. If you would like to see what you are typing without having to scroll all the way to the right, turn Word Wrap on. Then Notepad should behave just like any other word processing program and automatically wrap the text to the next line as you approach the right margin of your window.

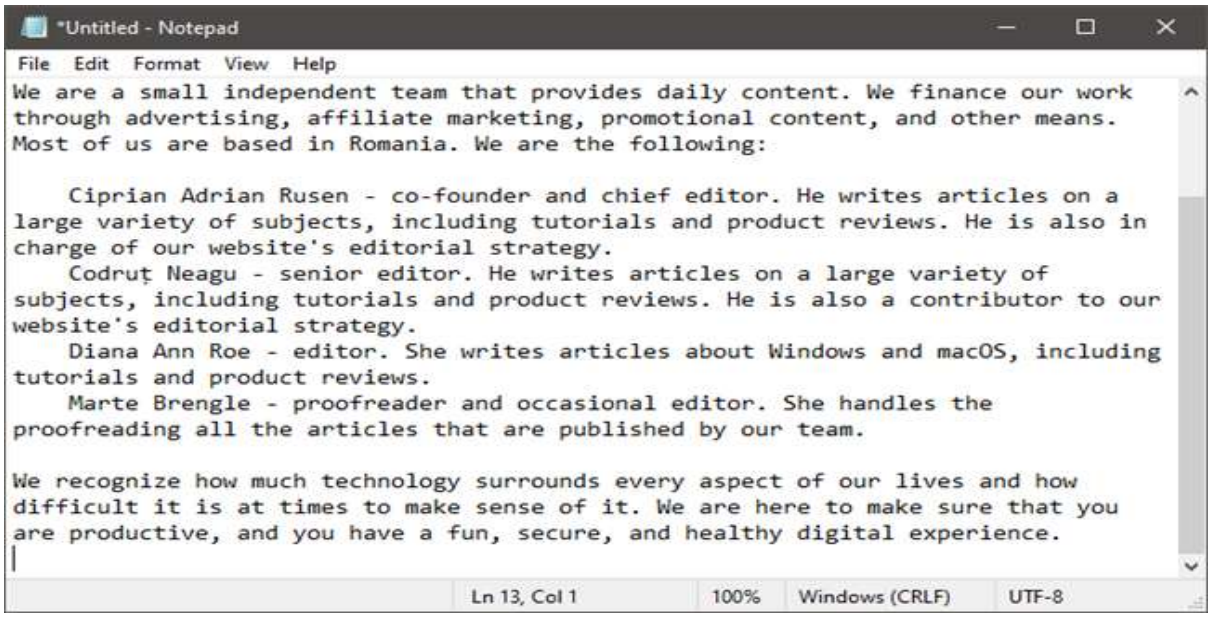


Figure3.9: A document in Notepad displayed with Word Wrap

In Windows 7, the Status Bar (which you can enable or disable from the View menu) is also linked with Word Wrap. If Word Wrap is off, you can see a notification on the lower border of your window, showing you where the cursor is currently located in a document that is not word-wrapped. If Word Wrap is on, the lower border is blank. In Windows 10, the Status Bar is on by default and shows line and column numbers regardless of whether you're using Word Wrap or not.

Figure3.10: Line and column numbers are shown in the Status Bar from Notepad

5. Zoom in and zoom out in Notepad (only in Windows 10)

If you're using Windows 10 with May 2020 Update or newer, Notepad also has another nifty feature: text zooming. You can use this feature to increase or decrease the size of the text so that it's easier to see on your screen.

To zoom text, open the View menu from the top of the Notepad window, select Zoom, and click or tap on Zoom In or Zoom Out. Repeat the same steps to further increase or decrease the zoom level. To go back to the normal zoom level, select "Restore Default Zoom" from the same menu.

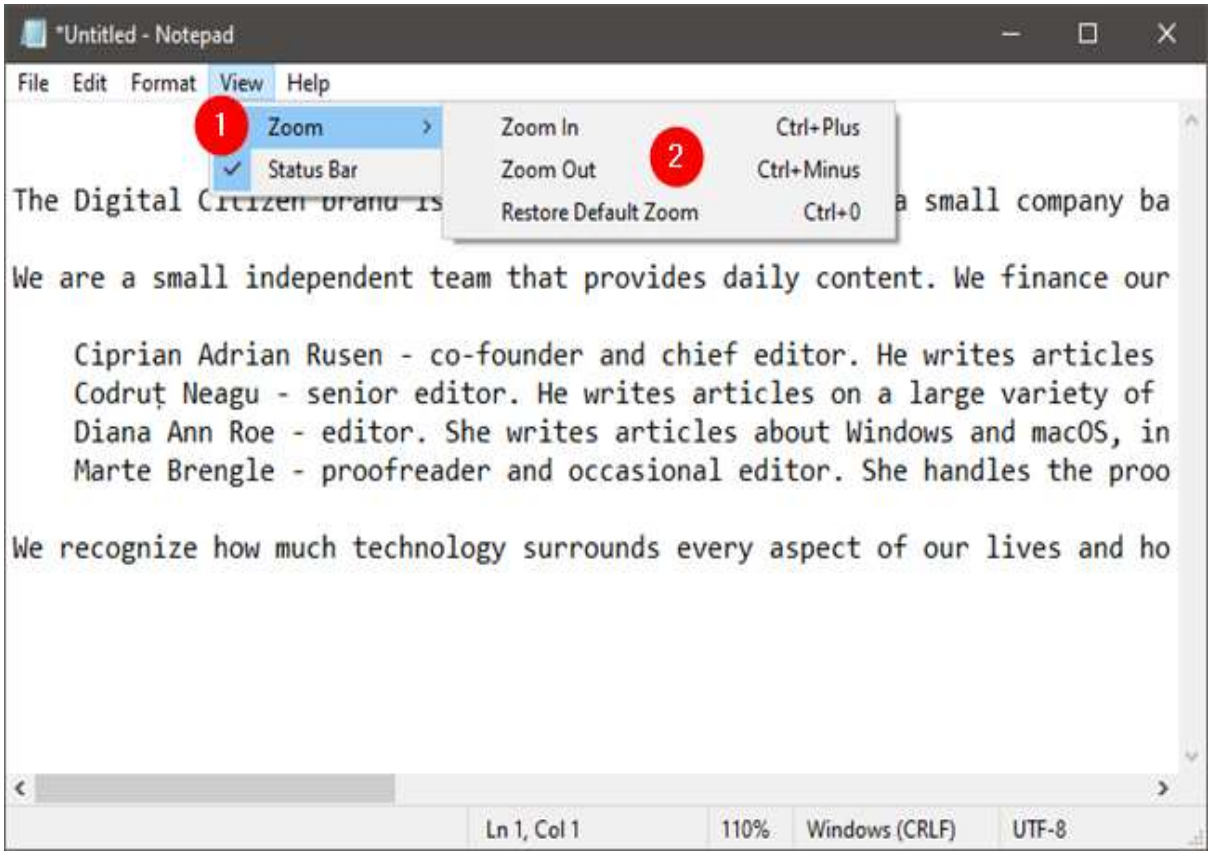


Figure3.11: Zoom settings in Notepad for Windows 10

Also, for a faster experience, you might want to remember that you can also use these keyboard shortcuts for adjusting the zoom level in Notepad:

- Zoom In – Ctrl + Plus
- Zoom Out – Ctrl + Minus
- Restore Default Zoom – Ctrl + 0

6. Change the font of the text document

The Font choice is self-explanatory: it offers you a list of all your installed fonts and the option to use bold, italic, and the like. However, unlike the way it works in programs like Microsoft Word, a change of font immediately affects the entire document. You cannot use one font in one part of the document and another font somewhere else. It is all or nothing.

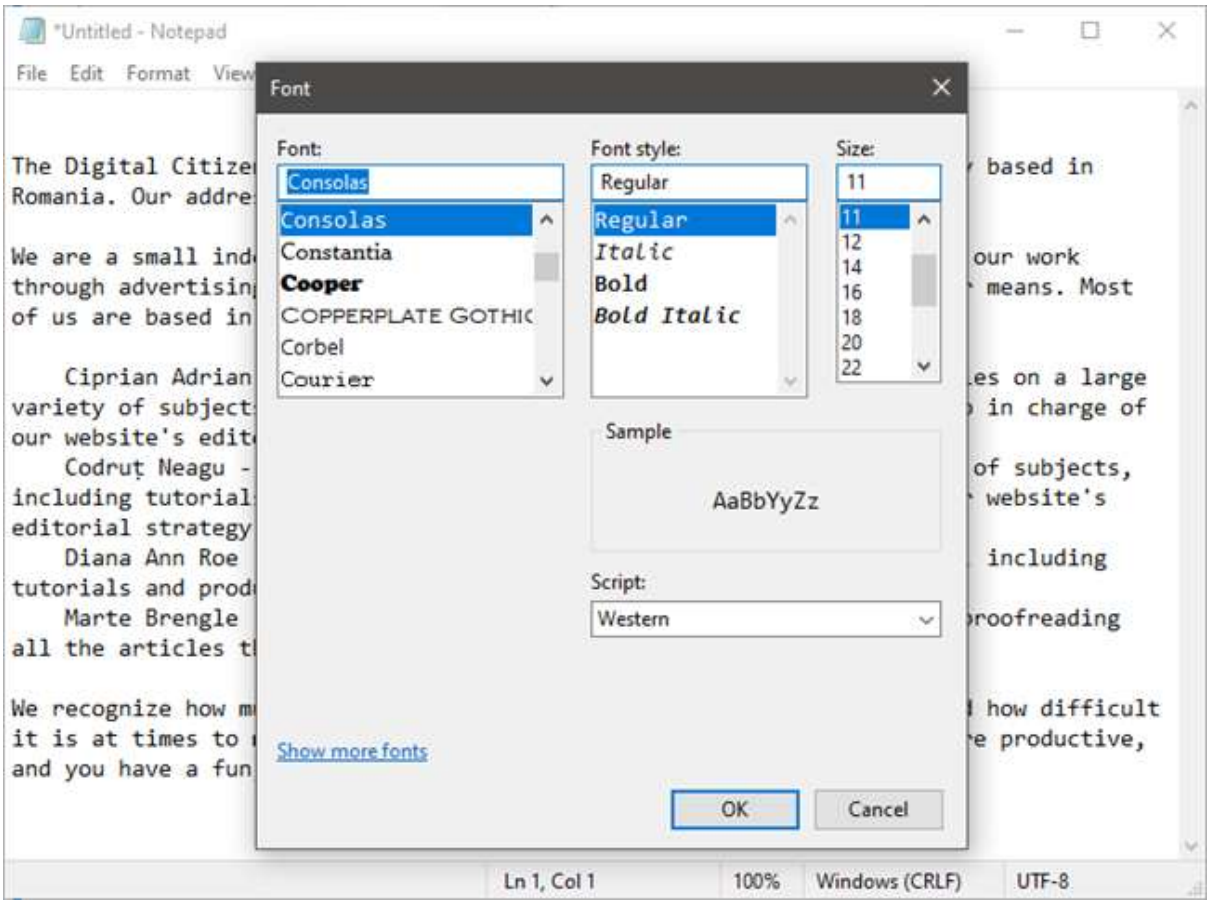


Figure3.12: Font options in Notepad

In the Font menu, there is a less familiar option available, the drop-down menu labeled Script. This lets you choose characters that are not available in the standard “Western” style fonts. The choices are Western, Greek, Turkish, Baltic (not available in Windows 7), Central European, Cyrillic, and Vietnamese (not available in Windows 7). Choose a set, and you should see some representative characters above it. The Western set is selected by default, and you need to change it to another one if necessary.

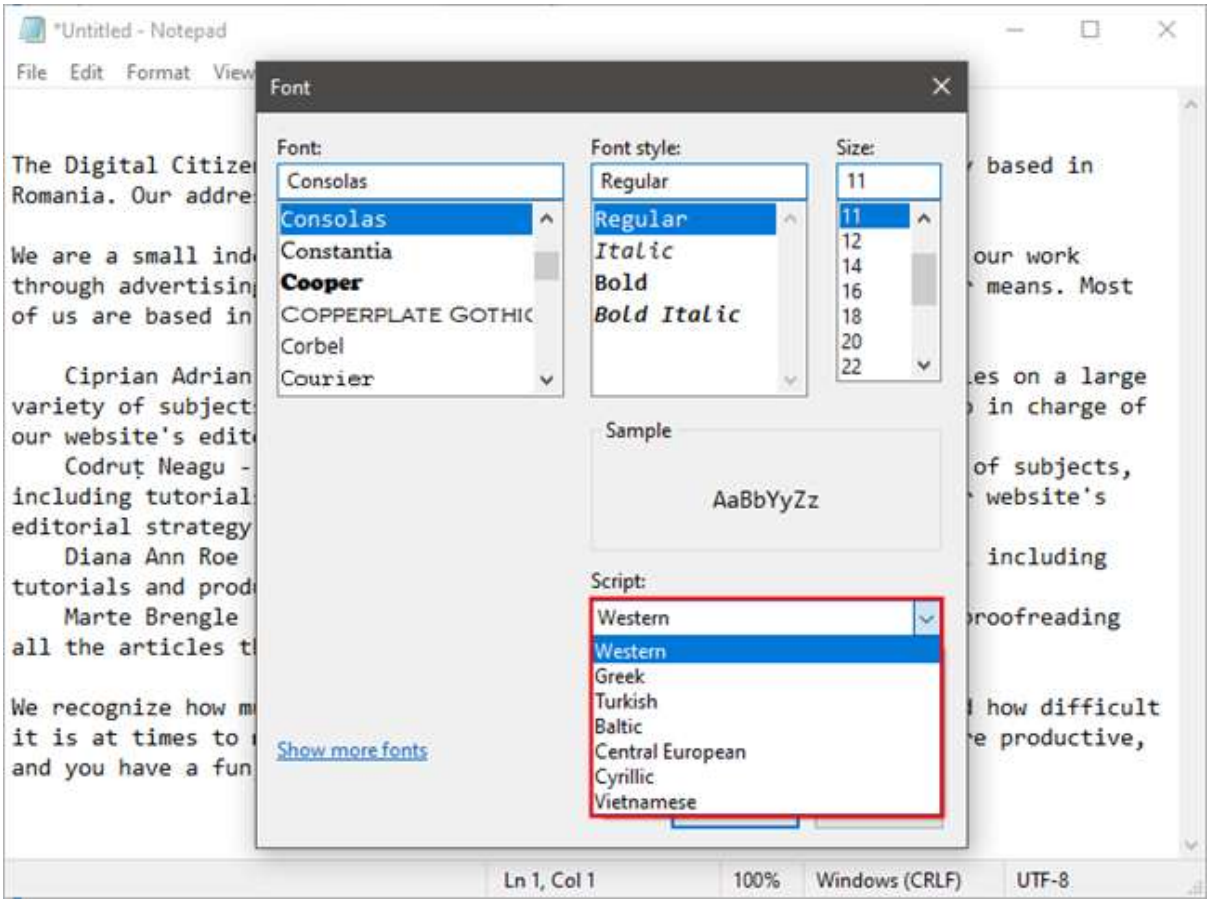


Figure3.13: Font Script options in Notepad

7. Print text files with Notepad

If there is nothing else that you want to customize in the document that you're printing, open the File menu, and click or tap Print. If you do want to customize the print, first click or tap on Page Setup in the File menu.

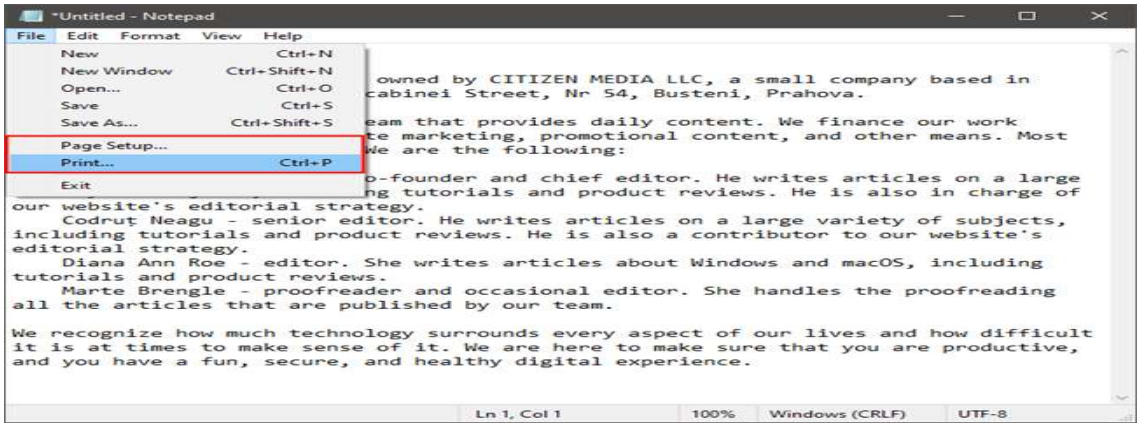


Figure3.14: Page Setup and Print in Notepad

In more sophisticated programs, Page Setup offers a long list of options. In Notepad, though, your choices are simple. You can choose the paper size and where your printer keeps the paper, the page orientation, and whether to have a header and footer (and the text to include in each).

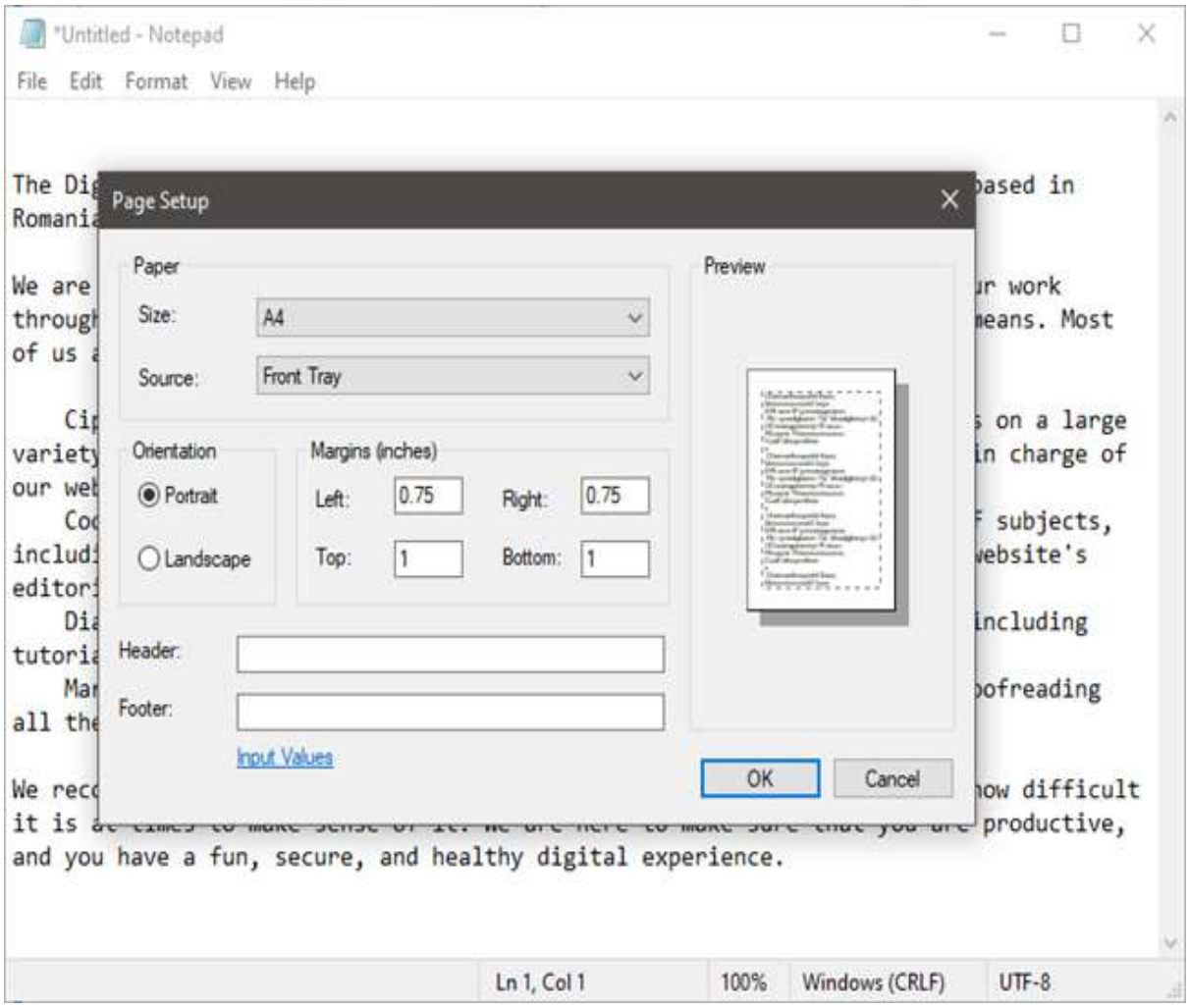


Figure3.15: Page Setup settings available in Notepad

By default, in Windows 10, there's no header or footer printed. In Windows 7, the text in the header is the name of the document and the date it was printed, and the text in the footer is the page number. If you want to customize the header and footer, type the texts you want to use for them. Note that you can also use some codes for printing the current date, time, name of the document, or page numbers. To see all the codes, click or tap on the Input Values link from the Page Setup window, or visit this page: Changing Header and Footer Commands in Notepad.

8. Save text files using different encodings

You can also use Save As to change the encoding of your file to match a particular character set. Here, a bit of text from our Romanian site digitalcitizen.ro has been cut and pasted into Notepad.

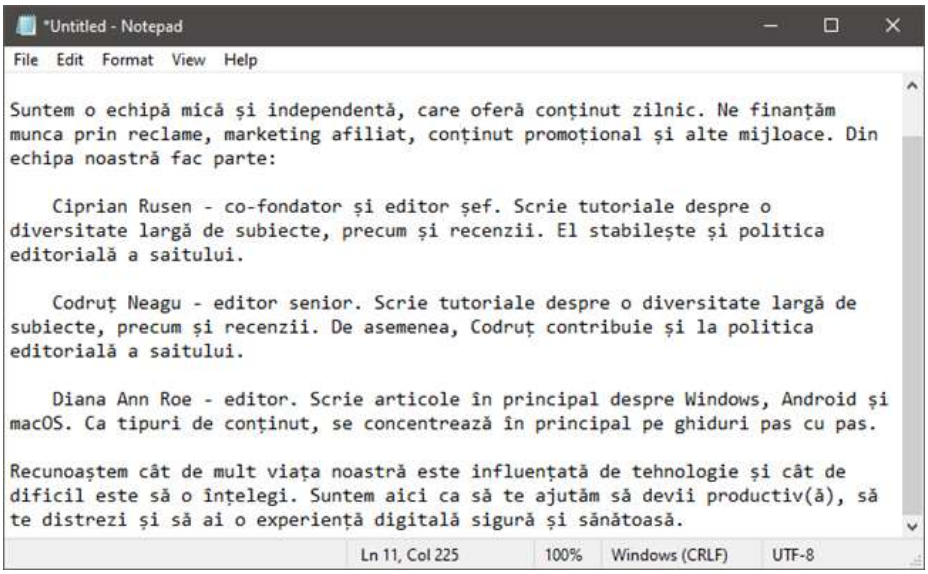


Figure3.16: A document with Central European characters, created in Notepad

If you were to try to save this in ANSI encoding, which is the default option in the Notepad from Windows 7 and old versions of Windows 10, you would get a message that if you save it as plain text, all the formatting would be lost.

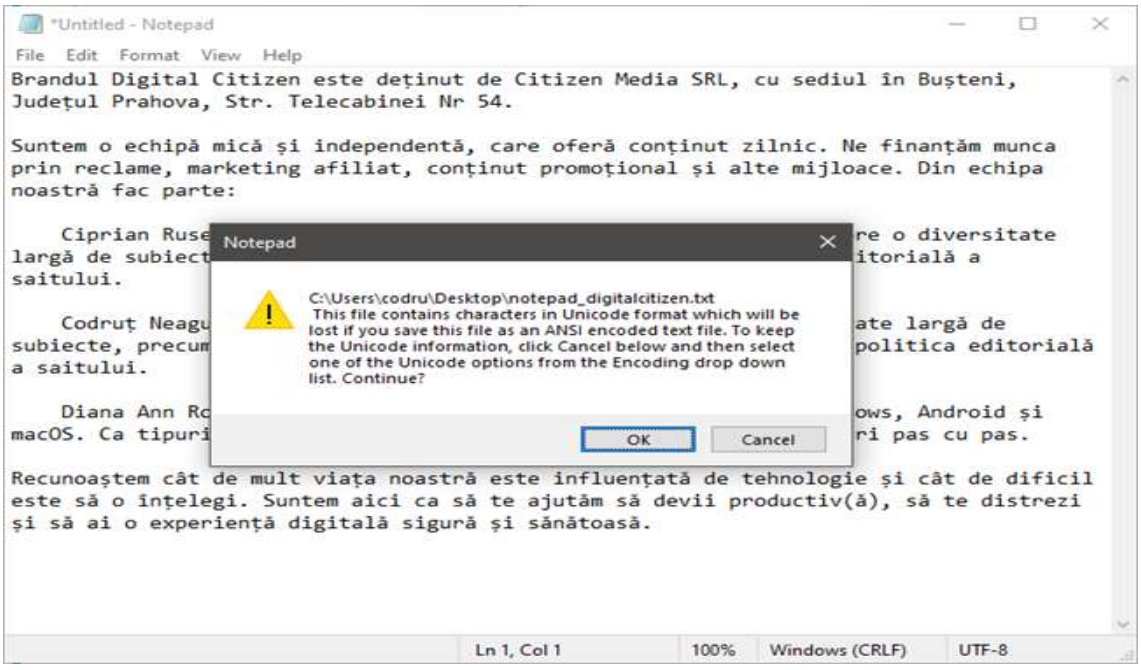


Figure3.17: Saving a document in ANSI encoding can lose characters

You have to choose the appropriate encoding from the drop-down list. This might take a little experimentation to get right, depending on the types of characters in the file, but starting with Unicode is a good bet. If you are not familiar with encoding, the first section of this tutorial should help explain it: Make Windows correctly display characters from languages other than English (set non-Unicode programs).

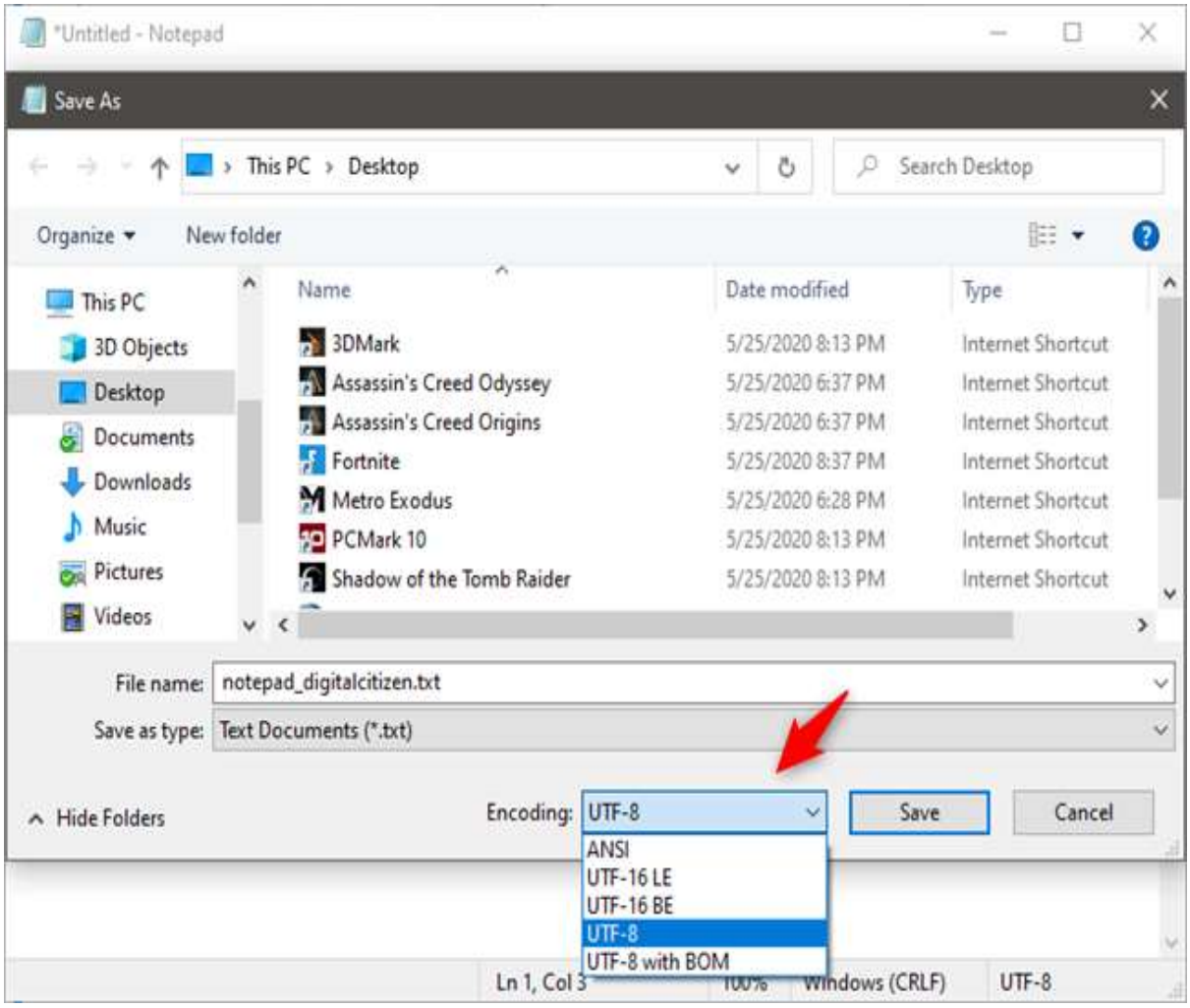


Figure3.18: Choosing UTF-8 encoding for a document saved with Notepad

9. Save documents as HTML files

You can also use Notepad to create HTML files. Make sure that Word Wrap is turned on and type your HTML code the way you would type plain text. When it comes time to save your work, choose Save As, and select All Files from the list of choices. Then save your file with the .htm or .html extension.

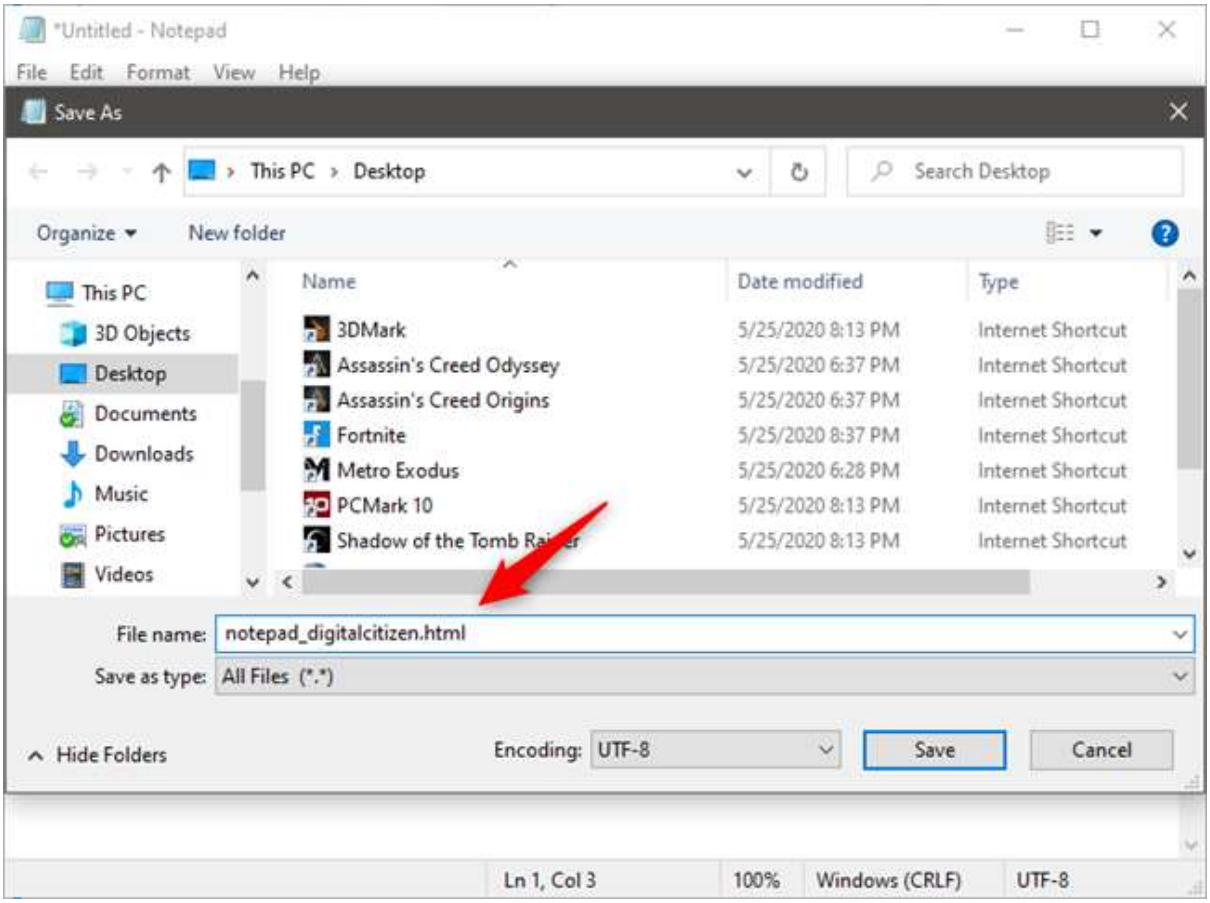


Figure3.19: Saving a document as an HTML file with Notepad

3.7 Do you use Notepad for (light) text editing?

Notepad has been around for a long time and continues to be a useful desktop app for writing simple text and HTML. Sometimes, that is all you need. If you require more than just the basics, WordPad might be a better choice. It is built into all versions of Windows, too! Do you use Notepad regularly? If you do, please tell us how you find it useful in the comments below.

Chapter - 4

Microsoft Paint

4.1 Introduction of MS Paint

Microsoft Paint or '**MS Paint**' is a basic graphics/**painting** utility that is included in all the **Microsoft** Windows versions. **MS Paint** can be used to draw, colour and edit pictures, including imported pictures from a digital camera for example.

Paint is a drawing tool you can use to create simple or elaborate drawings. These drawings can be either black-and- white or colour, and can be saved as bitmap files. You can print your drawing, use it for your desktop background, or paste it into another document. You can even use Paint to view and edit scanned photos. You can also use Paint to work with pictures, such as .jpg, .gif, or .bmp files. You can paste a Paint picture into another document you've created, or use it as your desktop background.

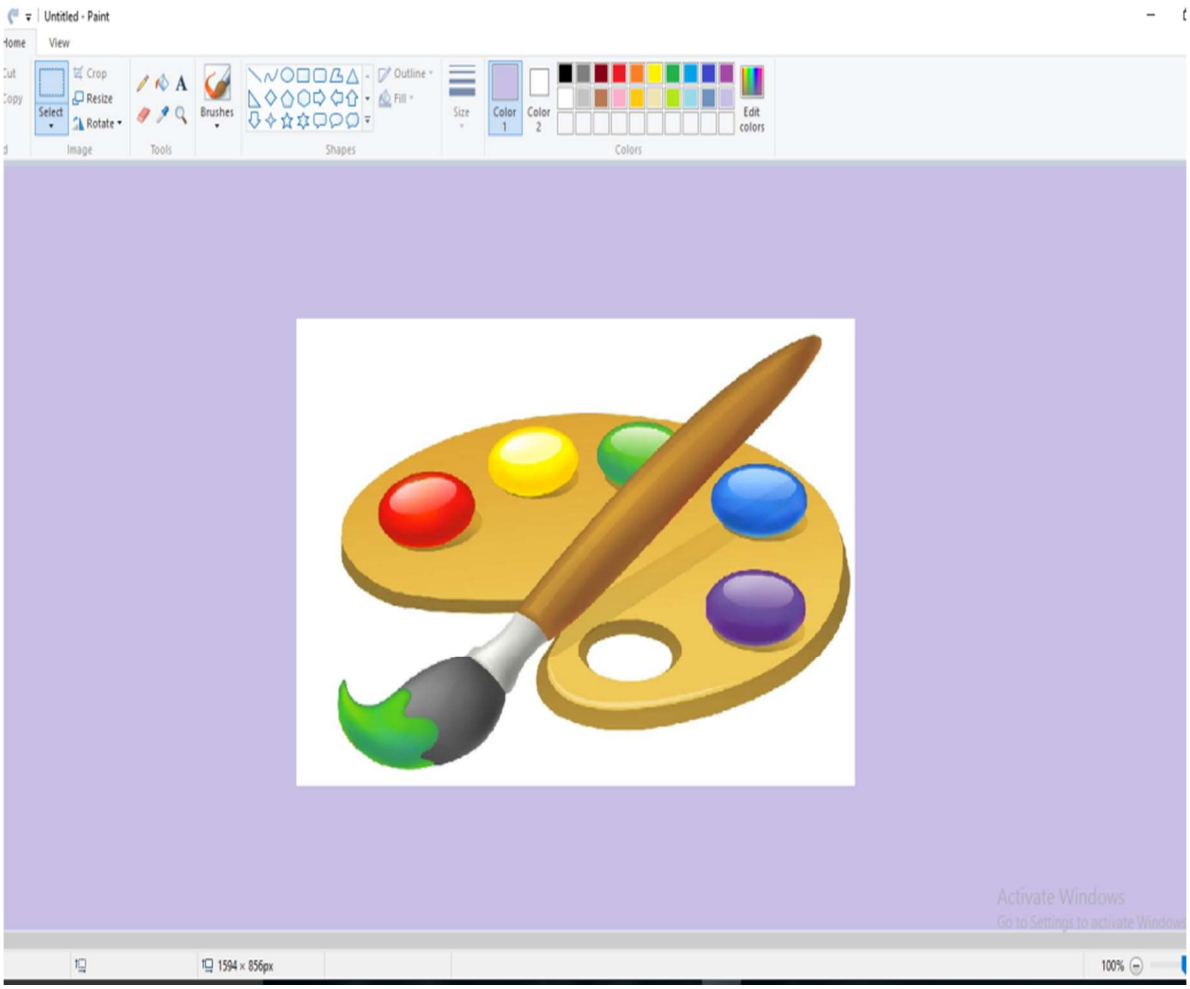


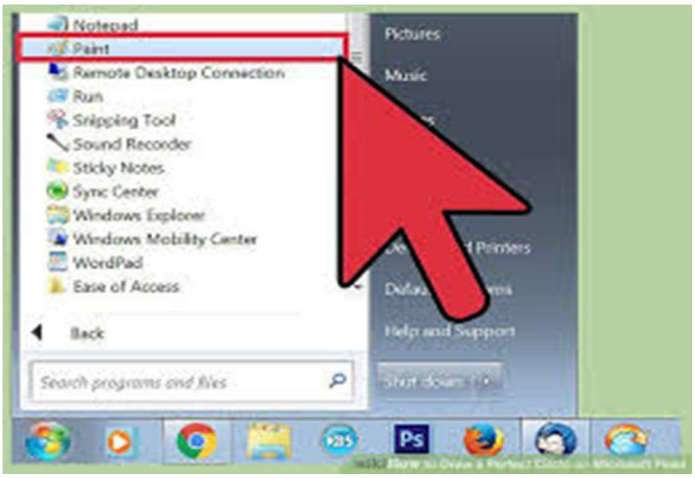
Figure4.1: Paint Window

Microsoft Paint, first introduced with Windows 95, has over the last few years evolved into a quality image editing programme which has great versatility and is useful for both beginners and professional graphic artists alike. MS Paint can be used to draw, colour and edit pictures, including imported pictures from a digital camera for example. MS Paint is found in the Windows Start menu within the Accessories Folder. In MS paint you can use a text tool, bucket tool, eyedropper tool, airbrush tool, brush tool, zoom tool, shapes tool, eraser tool, etc. tool are used.

4.2 How to Open MS Paint?

Step 1 − Click on the Start button.

Step 2 − Click on MS paint.



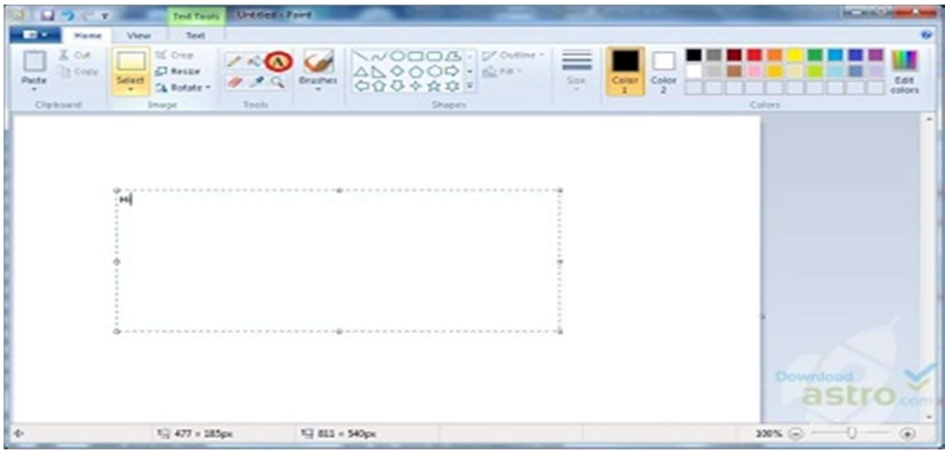
This will launch Microsoft Word application and you will see the following word window.

You will want to familiarize yourself with the look and layout of this window, as it is very similar to other paint/image manipulation programs such as Adobe Photoshop. Learning the basic features of Paint will make it easier for you to learn other, more complex programs that much more easily. First, let's maximize the Paint window by clicking the rectangular button to the left of the X button on the right side of the Paint window's **Title Bar.** The Paint window should now fill out the entire screen. (If you're very new to using Windows, click on the Title Bar link to learn more about how the Title Bar works.)

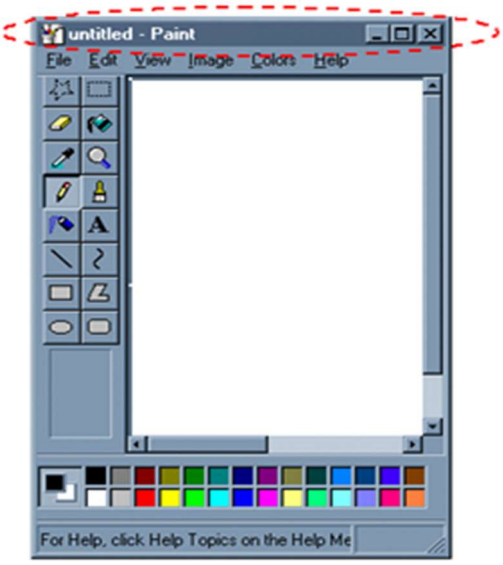
You don't really use the Title Bar for anything, but it's good to know about it. Now that you do, you should be ready to learn about using the tools of MS Paint after now.

4.2 Tabs of MS Paint:

Following is the basic window which you get when you start a word application. Let us understand various important parts of this window.



4.2.1 TITLE BAR



Understanding how to read the title bar is a basic skill in Windows. The Title Bar is indicated by the red circle in the illustration at left. The Icon (at far left) gives you a clue as to what program the window belongs to. In this case, the Icon shows that the window belongs to Microsoft Paint. To the right of the title bar, you'll see some text. The first bit of text is the name of the file that is currently open in this program. Since we've just launched Paint, we see a new (blank) document, which is named "untitled" by default. The next bit of text tells us again that this window is a Paint window, just like the Icon did. It's redundant, but redundancy is common to the Windows interface.

At the right side of the tool bar, you'll see three buttons: From left to right, they are: Minimize, Maximize/Restore, and Close. If you click on Minimize, the window will shrink down and disappear, leaving only the window tab on the task bar (*usually located the very bottom of the screen*) to let you know that the window is still open. Click tab to bring the window back to its previous size. Maximize/Restore will switch the window between taking up the full size of the screen and some smaller portion of it. When restored, you can resize the window by clicking along the edge of the window and dragging it to the desired size. You can also move the window about by clicking and holding the Title Bar and dragging the mouse around. When Maximized, the window takes up the entire screen and can't be moved around or re-sized. Clicking on the Close button will shut the program down completely.

4.2.2 THE TOOLS

Microsoft Paint has an assortment of painting Tools that you can use for drawing shapes and applying colour to areas of your image in various ways. You switch between tools by clicking on the appropriate Icon on the Toolbar, which is located on the left side of the Paint window. The Toolbar looks like this:

1. The top row of Icons is the Selection Tools.
2. The next row has the Eraser tool and the Fill tool Icons.
3. The third row has the Eye Dropper tool and the Magnifying Glass tool Icons.
4. The fourth row has the Pencil tool and the Paint Brush tool Icons.
5. The fifth row has the Airbrush tool and the Text tool Icons.
6. The sixth row has the Line tool and the Curve tool Icons.
7. The seventh row has the Rectangle Drawing tool and the Polygon Drawing tool Icons.
8. The Eighth row has the Oval Drawing Tool and the Rounded Rectangle Drawing Tool Icons.
9. The bottom portion of the Toolbar changes when you select a tool to reveal additional options or settings for that tool.

Most of the Tools are used to apply colour in some way to a portion of the image. In order to use these tools, you'll first want to make sure that you have selected the correct colour in the Colour Palette. If this is your first time of using Paint, I suggest that you start out with learning about the Pencil Tool.

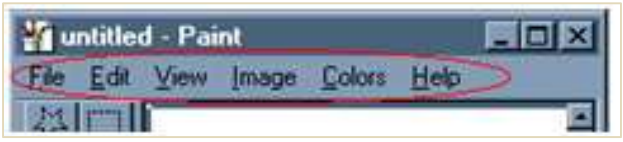
In addition to the various Tools that Paint places at your disposal, you'll also have a number of useful commands that can be accessed through the Menus. After you scroll down to view the use and features of the tools in full. By then, you should get yourself set to do some graphic work.

4.2.3 THE MENUS

Knowing how to use menu commands is a basic Windows skill. But just in case you're a real beginner, we'll do a quick recap.

Overview

The Menus appear directly beneath the Title Bar in the window. There are six menus in the Paint window, which I've circled in red to emphasize.



We call them "Menus" because they work like a menu at a fast food restaurant. When you want to place an order at a restaurant, you look up on the wall for what you want, and if you see it, then you select it. The computer works the same way. You just look in the menu, then select the item that you want. Because a complete list of all the items on the menu would take up a lot of screen space that could be better used for other things, the menu items "hide" most of the time. To bring up a menu in its entirety, just click on the Menu's heading, and the rest of the menu will "pull down".

Here we see the File menu, which we've pulled down (by clicking on the word File, naturally). Now we can see the entire contents of the file menu. Let's take a look at the anatomy of this menu in greater detail. If you prefer to use the keyboard over the mouse, you'll want to take notice of the shortcut features. To the right of some of the commands you'll see a keystroke command shortcut to the right. For instance, to create a New file, you could click on File to pull down the File Menu, then click on New. Or, you could just press Ctrl + N on the keyboard. Since your hands remain on the keyboard, this can save you a few seconds, which may not seem like much but it adds up. This time-saver is of less vital importance in a program like Paint, where you'll be using the mouse a great deal, but it's still good to know about.

You can also execute menu commands by using the keyboard in a different way. Notice how each menu command has a letter underlined somewhere in it? These are clues to understanding the other keyboard shortcut method. To use this method, all you need to do is press the Alt key, then the letter that is underlined in the command that you want to use. For instance, to look at the Print Preview, you can click on File to pull down the File Menu, then click on "Print Preview". Or, you could press Alt-F, then V.

Just like at most fast food places, if what you want is not on the menu, then you can't get it. Also, some menu items may not be available to you at all times. When this is the case, that item will appear" grayed out". For example, you'll notice that the commands "Set as Wallpaper (Tiled)" and "Set as Wallpaper (Centered)" were not available in the menu above. But they remain listed so you know where they'll be when you're at the point in using the program where those options can be used.

4.2.4 THE HELP MENU

Help menus are funny things. They are frequently the most complicated menu in a program, yet they are probably the first menu that a new user is likely to need to use. Because they are complicated, most new users don't use the help menu. Either they can't figure out how to use it, or they get intimidated by it. That's why classes like this are necessary. But if you can learn how to use the Help Menu, you can teach yourself a lot more than what you can learn in any beginner's class.

Fortunately, as the computer software industry has advanced and matured, they've gradually improved the Help menu's functionality. Today, the Help menu is usually relatively simple to use. The Help menu only has two sections in Microsoft Paint, which helps eliminate some of the complexity. And, really, only one of these is of any real interest to us. "About Paint" just tells you about the copyright and licensing information… so it's not particularly "helpful."

"Help Topics" on the other hand, is the where the real show begins. Just click on "Help Topics" to launch the Help Window for Paint.

The Help Topics Window can be displayed side by side with the regular Paint window so that you can refer to it while you're doing your work. As you can see, the Help Window is divided into two "window panes" or "frames." The frame on the left side is your Help Topics index; the right frame is where the actual Help information is displayed when you open up one of the Topics and click the Display button. The Help Topics list can be searched in three different ways: through the Table of Contents, through the Index, or through Searching. I'll leave it up to you to decide which method you prefer, but I think that the Index method is probably the most useful.

The Help Window works a lot like a web page. If you're already familiar with using Netscape Navigator here at the library, you should find it easy to navigate the Help Window. Just find the topic you need information about in the Topics list, click on it, and then click the Display button. The help pages related to your topic will then be displayed in the right-side frame. Click on one to get to the information. If you click on the wrong one, or don't find the information you want, just click on the Back button (at the top of the Help Window) to go back a step and go into one of the other help pages, or do another search.

Chances are, most any question you may have about using Paint can be answered through this Help Window. You can even print out pages from the Help menu and keep them for later reference. To do this, just click on the Options button at the top of the Help window, and select the Print command.

One thing I should caution you about is the "Web Help" option. Don't bother with this one. Some Microsoft products offer additional technical support through this command, but Paint is such a simple program that this wasn't necessary. So you won't find anything through Web Help; you'll just waste your time looking.

Even if you think you know everything, you might be surprised to learn even more on some aspect of using Paint by browsing the Help Topics. The more you do this, the more familiar you'll be, and the more self-sufficient you'll become. Before too long, you might become knowledgeable enough to teach someone yourself.

4.2.5 THE FILE MENU

The File Menu is where you'll find commands that affect the file you're working on in its most basic aspects. This is where you'd go to create a new file, open a file, save a file, or print a file. In fact, most basic phrases that end with "file" will be found… guess where? In the File Menu. We've already looked at the File Menu in our overview of using menus, so let's get right to it:

When talking about a specific command, we use the arrow notation. For instance, if we wanted to tell you how to open a new file, we might say, "Create a new file." But if we wanted to give more explicit instructions, we'd say something like, "Go to File ® Open."

1. New – Creates a new, blank (white) image file.
2. Open – Initiates the Open dialog box to open (view) an existing image file. Note that in Paint only one image file can be open at one time. If you try to open a second file, the first file will be closed automatically.
3. Save – Saves changes to the current file.
4. Save As – Saves changes to the current file, and allows you to pick a new or different filename for the file.
5. Print Preview – Displays the image on screen as it will appear when it is printed out on paper. This lets you get a sense, among other things, of how big the image will be when you print it to the page.
6. Page Setup – Displays options for setting up how Paint will print your file. Note that these settings will not be saved with the image if you use the Save command later.
7. Print – Displays the Print dialog box, where you can print out the current image file.
8. Send (Not Necessary)
9. 1, 2, 3 – Opens the 1st, 2nd, or 3rd previous files opened with Paint.
10. Exit – Shuts down Paint.

4.2.6 THE EDIT MENU

The Edit Menu is where you'll find most of your commands that are useful for working within your file to make changes of one kind or another. As far as useful commands go, the Edit Menu is another "heavy hitter." You'll definitely want to learn the shortcut keys for the commands on this menu.

1. **Undo** – This is probably the most important single command to remember. Undo will remove the last change you made to the file. For instance, if the last thing you did was to draw a line with the Line Tool, selecting Edit ® Undo would remove the line. This is great when you screw up and want to call a "do-over." You'll use Undo over and over again, I'm sure, as you're learning how to place Ovals with precision using the Oval Shape tool, or make the Curve tool work how you want it to. But be careful! Paint's Undo feature only goes back one step. Everything else you did prior to the last step is set in stone. For example, if you just drew that line, and then accidentally clicked the mouse, creating another line, you'd only be able to use Undo to get rid of the last one. The only way to "back up" more than one step in Paint is to Exit without Saving, and then Open the file again. But if you do this, you'll lose ALL the changes you made after the last time you saved. Therefore, smart Paint users will use Save frequently when working with their files, to preserve changes they're sure they want to keep. Very smart Paint users will save multiple copies of their file with File ® Save As. As they work on it, if they change their mind, they can go back a few steps and not have to re-do a lot of repetitive work. And if you're not particularly smart, don't worry; the lessons will get drilled into you the first time you lose a lot of work as a result of not following the recommended procedures.

   One thing to be aware of: Undo can't Undo everything. It works for the tool commands, but you can't use Undo to undo a Save or Save As.

2. **Repeat** – Repeat is like the reverse of Undo. It will reapply the last change that you made to the file you're working on. It doesn't seem to be a useable option most of the time, however. You'll find that it's grayed out most of the time, and not a particularly useful feature.

3. **Cut, Copy, Paste** – Cut, along with Copy, and Paste are some of the most useful commands in Paint. These are used in conjunction with the Selection tools. First, use either the rectangular or freeform Selection tool to select a portion of the image. The Cut command will remove the selection from the image, just as though you cut it out with a pair of scissors or an x-acto knife. The Cut portion of the image is not gone, however. It is stored in the computer's copy buffer, where it can be retained temporarily. Copy works much like Cut, in that it places the selected portion of the image into the copy buffer, but it does not remove the selection from where it originally appears in the image. Paste is how you get stuff out of the copy buffer and back onto the image; it "pastes" the contents of the copy buffer back into the image, where you can move it around before deselecting it. Cut and Paste are good for moving bits of an image around. Copy and Paste are good for duplicating portions of an image to create a motif or pattern or collage-like effect.

    - **Clear Selection** – Clear Selection is also used in conjunction with the Selection tools. When you use Clear Selection, whatever is in the selection will be deleted. It's a little trickier than simply using the eraser and zoom, and less precise, but it's quicker.

    - **Select All** – This command automatically selects the entire image. You can then use Cut, Copy, Paste, or Clear Selection.

    - **Copy To, Paste From** – These commands work with an outside file instead of the copy buffer. The copy buffer is like an invisible file that is associated with the Paint Program itself. This is useful, but limited, because only one thing can be in the copy buffer at a time, and when Paint is shut down the contents of the copy buffer may be lost. Or, if you are working with two programs, such as Paint and Microsoft Word, using the Copy command in one program may overwrite the contents of the copy buffer in the other program. When you're working with copying and pasting a lot, you may find that you wish that you could keep more than one object in the copy buffer at a time. This is what Copy To/Paste From are for. You must have something selected in order to Copy To. Whatever you've selected gets saved as a separate file. Paste To works in a complimentary fashion, by pasting the contents of some separate file into your active Paint file.

These are useful features, but they require the added step of using a dialog box to save or open a file, and are thus slower than the regular Copy/Paste commands. Only use these if you know you'll be needing a selection frequently as you do your work.

4.2.7 THE IMAGE MENU

Next to the File and Edit menus, the Image Menu is probably the menu where you'll find the most useful features. You won't use these as often as the File and Edit menu commands, but you can think of the commands in the Image Menu as being your Paint "power tools". You can use these tools to alter your image or selection in a number of interesting and useful ways.

1. Flip/Rotate – Flip will allow you to "flip" the selection over like a pancake. You can choose between horizontal or vertical for the direction of your flip. This is good if you need to create a "mirror image" of a selection. Rotate will rotate the selection. The Rotate command in Paint is not extremely flexible, so you're limited to right-angle rotations (that is, 90, 180, and 270 degrees of rotation.)

2. Stretch/Skew – Stretch will let you change the proportions of the selection, making them narrower, wider, shorter, or taller. The ratio of the selection's height and width will change, and will result in some distortion of the image. Skew is similar to stretch, but it affects opposing edges oppositely. For example, a horizontal skew might shift the top of the image to the right while the bottom of the image stretches to the left. This results in an effect that can be used in making an illusion of 3-d Perspective.

3. Invert Colours – You'll get an effect similar to a photographic negative.

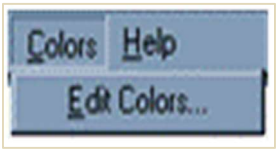
4. Attributes – Here is where you can change the basic image attributes such as height and width (which can be measured in pixels, inches, or centimeters), colours (switch between black or white and colour), and transparency (may not be available for all file types.)

5. Clear Image – Self-explanatory; this wipes out the image, leaving you with a blank file with the same image dimensions.

6. Draw Opaque – Works with the selection. If unchecked, any background colour (the default is white) in your selection will be treated as transparent. This transparency can be observed by moving the selection around – as the transparent portions of the image move over other areas of the image; you should be able to see those areas peeking through the selection. If unchecked, the background colour will remain opaque when the selection is moved about in the image.

4.2.8 THE COLOURS MENU

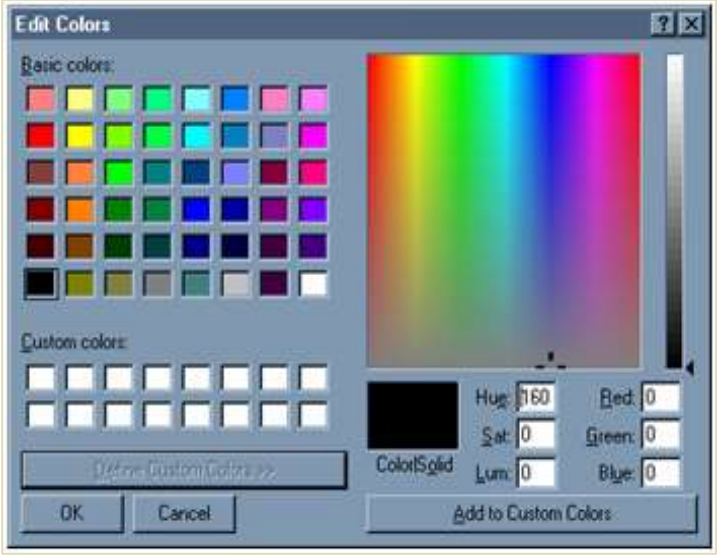
The colours menu only has one command in it, Edit Colours.



The interface for this command is a bit complicated compared to what we've looked at thus far. This is the basic Edit Colours window. This will open up on top of the regular Paint window when you select Edit Colours from the Colours Menu.

From here, you can customize your colour palette. The Colour Palette is the portion of the Paint window from which you can select which colour you want to use to paint or draw with. Since there are only a relatively small number of colours available through the basic Colour Palette, you'll probably want to pick custom colours at some point if you're doing a lot of actual drawing with the drawing Tools. To do this, click on "Define Custom Colours". This button will cause the Edit Colours window to expand, and you'll be able to select new colours from the Colour Picker.

As you can see here, the colour picker allows you to pick from a wide variety of shades in the RGB colour gamut. RGB colour is the colour scheme used by mixing the primary colours of light, Red, Green, and Blue, and is the basis for all colour computer graphics.

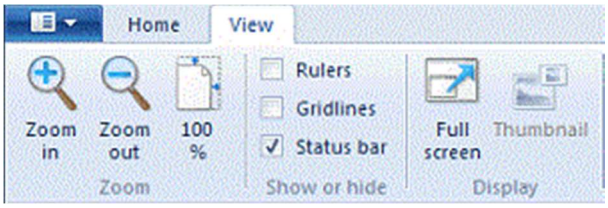


To pick a colour, you can just click on the region where your desired colour appears. You can adjust the lightness or darkness of the shade by clicking on the shading bar at right. If you know about colour theory, you could enter numbers into the Hue, Saturation, and Luminosity or Red, Green, and Blue boxes. If you don't understand it, it's probably just easier to work with the gamut box.

The colour you've currently picked will show up in the box beneath the gamut box. If you like this colour, you can add it to your colour palette by clicking on the Add to Custom Colours button. The new colour will then appear in the Custom Colours palette. When you are all done, click on OK to resume working in Paint. If you make a mistake and don't want your changes to be saved, click on Cancel.

4.2.9 THE VIEW MENU

The View Menu isn't particularly useful. You can toggle whether the Tool Box, Colour Box, or Status Bar will be displayed here. You can also set the Zoom here, but since you can do that quicker with the Zoom tool, it's hardly useful. View Bitmap will display the image at full size all by itself with none of the usual Paint window objects to get in the way.



4.3 The MS Paint Tools Features and Uses

4.3.1 The Selection Tools

These tools are used to select portions of the image you're working with. These selections can then be moved around, copied, or edited without affecting the rest of the image.

To use the Freeform Select tool:

1. Click on the Freeform Select tool Icon.
2. With the left button, click on your image wherever you want to begin the selection. Drag the mouse around to create the outline of the freeform shape of your selection. Be careful! The mouse is tricky to use. It may help to zoom in using the Magnifying Glass tool. Zoom in close so you can see what you're working with more clearly, and to control the mouse with better precision.
3. When you finish outlining your freeform selection shape, release the mouse button. You will notice that the freeform shape that you had been drawing has just mysteriously turned into a rectangle! What gives? Actually, your freeform shape is still preserved; the selection, however, is outlined in a rectangular-shaped guide box. The freeform selection is bounded within this

box. If you move the selected portion of the image around, you'll notice that it still retains the freeform shape that you drew. This may confuse you at first, but you'll get used to it before long.

To use the Rectangle Select tool:

1. Click on the Rectangle Select tool Icon.
2. With the left button, click and hold the button to begin your selection. Where you click will become one of the corners of the rectangular selection area.
3. Drag the mouse diagonally to where you want the opposite corner of the rectangular area to be.
4. Release the mouse button. The Rectangular selection will also have a rectangular shaped guide box around it.

Things you can do with the selected area:

Copy or Cut and Paste: To copy the selection, press Ctrl-C. To cut the selection from the image, press Ctrl-X. After Copying or Cutting, you can Paste the selection by pressing Ctrl-V. By Pasting multiple times, you can achieve a mosaic or collage-like effect.

Move: Left-click anywhere inside the guide box and hold down the button to "pick up" the selection, and then drag the mouse to move the selection to another area of the image. It will "float" over the rest of the image, allowing you to position it wherever you want it to be. Release the mouse button to "let go" of the selection.

Apply Effects: You can apply any of the effects from the Image Menu directly to the active selection rather than to the whole image.

De-selecting the area: To de-select the area, either activate a different tool by clicking on it in the tool bar, or make a new selection. You can't have more than one selection active at a time. Once the selection is de-selected, it becomes part of the image again, and will cover over whatever it may have been laying over.

Eraser

 The Eraser tool is simple to use. Just click on it to select it, then click on the part of the image that you want to erase. “Erasing” changes the erased part of the image back to the background colour of the image file. This is usually white, but can be changed to other colours using the colour palette. The size of the eraser can be changed by clicking on the Options portion of the Toolbar when the Eraser is active. Use a smaller eraser to go after small details, the larger eraser to wipe out larger areas of the image.

Fill Tool

 The fill tool applies colour (or “paint”) to a large area of the image. The Icon for the Fill Tool resembles a pouring jar of paint. Just like if you were pouring a liquid in real life, the Fill Tool’s “paint” will fill an area’s shape with colour. You have to be careful when using the Fill Tool for this reason: if you click in an unbounded area of the image, the colour will “spill” out and fill more of the image than you originally bargained for, possibly obliterating parts of the image that you wanted to save. Look closely before applying the Fill tool to an area to make sure it is bounded on all sides and that no “paint” can “seep out” and get where it’s not supposed to go. If this happens by accident sometime, don’t panic. Just Undo the Fill tool by pressing Ctrl-Z, find the “leak” and close it with the pencil or line tool, and then re-apply the Fill. There are no special options for the Fill Tool.

Eyedropper

 The Eyedropper tool has only one function, but it is a useful one. The eyedropper can be used to “pick up” colours that you’ve already used in an image. Say you’re working with an image with many shades of Green. You want to pick a specific shade, but there are several that are so similar that it’s difficult for your eye to distinguish between them. Just click on the eyedropper, and click on the exact portion of the image that contains the colour that you want. The active colour for your paint tools will automatically change to the colour that you picked with the eyedropper. Additionally, the Eyedropper will automatically switch over to the previously selected tool, enabling you to rapidly resuming work on the image with the colour you just selected.

Magnifying Glass Tool

 The Magnifying Glass, or Zoom tool, can be used to get a closer, more detailed view of an image. This is very useful if you're working in close with the fine details of a part of an image. When you activate the Magnifying Glass tool, you'll have an option to select between 1x, 2x, 6x, and 8x magnification. You can click on the part of the image that you want the magnification to center on. This will not affect the actual image in any way, just how it appears on your screen. Once you zoom in, the magnifying glass will automatically switch back to whatever tool you were using before.

Pencil Tool

The Pencil tool is your basic drawing tool. You can draw in different colours, but other than that there are no other options. The pencil's stroke is a single pixel wide, which makes it useful for working with fine details, but a poor choice for filling in large areas of the image with colour.

Paint Brush Tool

 The Paint Brush tool is similar to the pencil, but has more features. It too can be used in different colours, but the shape and size of the Paint Brush can also be changed. You can use square, round, and slanted shaped brushes, of various sizes, selected in the Toolbar Options.

Airbrush Tool

 The airbrush tool is a bit more complicated than the regular paintbrush. Instead of applying colour to the image evenly, it applies it gradually. The "spray" is a semi-random distribution of pixels. Gradually, as the airbrush is left hovering over the same area while it is painting, it will fill up with colour. A skillful artist can use this effect to create subtle differences in tone and variation, and even achieve the illusion that colours are mixing, all by using the airbrush. It does take some getting used to, however. The airbrush can paint at three different sizes, selected through the Options portion of the Toolbar.

Text tool

 The Text tool is used to position and enter text into your image. The text may be of any colour or font that you have active on your computer. You also have the option to set the text tool to work so that the background colour is used for the "fill space" around the text, or if the text will be applied with transparent "fill space", allowing the image to show through behind the text.

To use the Text tool, simply select it from the Toolbar, and then drag a rectangle within your image. This rectangle will be the boundaries within which the text will appear. Once you've drawn the text boundary, a floating window will appear, which will enable you to choose the font, size, and formatting (i.e. bold, italic, or underline) for your text. Unfortunately, the text formatting will be uniform. If you want to mix fonts, colours, sizes, or formats, you'll have to use the text tool several times, with different settings each time. This means you'll have to be careful in order to make sure that the different applications of text line up properly. You may need to use the selection tool quite a bit to move bits and pieces of text around, and this can be quite tedious. Remember to use the Undo command if you make a mistake, by pressing Ctrl + Z.

As long as the text tool is active, you'll see that rectangular boundary around the edge of the text area. You can move this rectangle around by clicking and dragging on the very border of it, or resize it by clicking on the tab buttons at the corners and midpoints of the edges. But be careful; if you click outside of the boundary accidentally, which is pretty easy to do, the text box will deselect, and the text tool will think you're trying to draw a new text box, and your old text will be set in place. Once the text is in place, it will no longer behave as text, but rather as pixels. The pixels just happen to be in the proper arrangement to appear to be text in some font; they can't be edited or moved as though a distinct object in the image.

Line Tool

 The Straight Line tool is pretty easy to work with. You can change the colour and width of your lines by using the Toolbar Options. All you have to do to draw a line is click on the image where you want one of the line's endpoints to be, then drag over to where you want the other endpoint to be. Then release the button. Easy! But the lines can only be straight.

Curve Tool

 The Curve tool is trickier to use than the Line tool. It can be difficult to learn how to use, and it is difficult to explain. Your best bet is to experiment with it, but be patient; because it will take a lot of getting used to before you get very good at making curved lines that are the shape that you want. Like the straight Line tool, the Curve tool can make lines in various thicknesses and colours.

Try experimenting with various techniques for making lines. Try clicking and dragging to make one kind of line, or clicking and releasing two endpoints. Click a third point to determine the curve. Try dragging an already drawn, but still active, multi-point line to distort its curve.

The Curve tool can be very frustrating, especially for beginners, especially since the Undo command can only be used to undo the last change you've made to your image. Just keep practicing!

4.3.2 Shapes

The Shapes tools are all very similar, so we'll look at them all at once.

Rectangle

 The Rectangle tool draws three types of rectangles: outline, filled with outline, and filled without outline. The interior of the outline rectangle is transparent, whereas the filled types fill the rectangle with the background colour. To draw a rectangle, click on the tool, then click a point on the image where you want one corner to be, then drag diagonally and release the mouse where you want the opposite corner to be.

Polygon

 The Polygon tool is similar to the rectangle, but works a bit differently. To create a polygon, activate the tool from the tool bar. Then, click on the image wherever you want your first vertice to be. A vertice is like a corner. Draw the edges of the shape like you would use the Straight Line tool, then simply connect the last edge to the first vertice and the shape will finish. You have to be

pretty precise, though. If you just miss by a few pixels, the shape will think that you want to continue adding sides to the polygon.

Oval

 The Oval Tool works much like the Rectangle tool. The only difference is that since there are no corners, you will need to guess where the corners would be in order to place your oval where you want it to go. Imagine that the oval you are drawing is being "hugged" by a rectangle that goes around it. Like up the top-most and left-most peaks of the oval's curve to guess where the corner of the imaginary rectangle is and click there. Then, drag down to where the bottom-most and rightmost peaks of the oval's curve would be, and click again. Your oval should be about the right size and in the right position if you estimated it correctly. It can take some practice.

Like the other shapes, you can create ovals that are just empty outlines, filled outlines, or filled with no outline.

Rounded Rectangle

 The Rounded Rectangle tool is like a cross between the Rectangle Tool and the Oval Tool. It draws rectangles, but instead of having sharp 90 degree angle corners, they'll be somewhat rounded. As always, you can create rounded rectangles with empty outlines, filled outlines, or filled with no outline.

4.4 How to Paint In MS Paint?

Opening Paint

1. Open Start. Click the Windows logo in the bottom-left corner of the screen.
2. Type in paint. This will search your computer for the Paint program.
3. Look for the Paint app icon. In the Start menu, look for the Paint app icon, which resembles a paint palette with paint on it.
4. Click Paint. It's next to the Paint app icon. Doing so will open a new Paint window.

Drawing and Erasing

1. Review the toolbar. The toolbar, which is at the top of the Paint window, is where you'll find all of the options used to interact with the Paint canvas.

2. Select a primary color. Click any color in the palette that's in the top-right side of the Paint window to apply it to the "Color 1" box. This is the color that you'll use when using the left mouse button on the canvas.

You can create a custom color by clicking Edit colors in the upper-right corner of the window, selecting a color and shade you want to use in the color wheel, and clicking OK.

3. Select a secondary color. Click the "Color 2" box to the left of the color palette, then click the color you'd like to use as your secondary color. You'll activate this color by using the right mouse button on the canvas.

4. Select a brush type. Click the Brushes option at the top of the Paint window, then click the type of brush tip you want to use. This is what affects the line size, shape, and width options. If you just want to draw a regular free-form line, click the pencil-shaped "Pencil" icon in the "Tools" section.

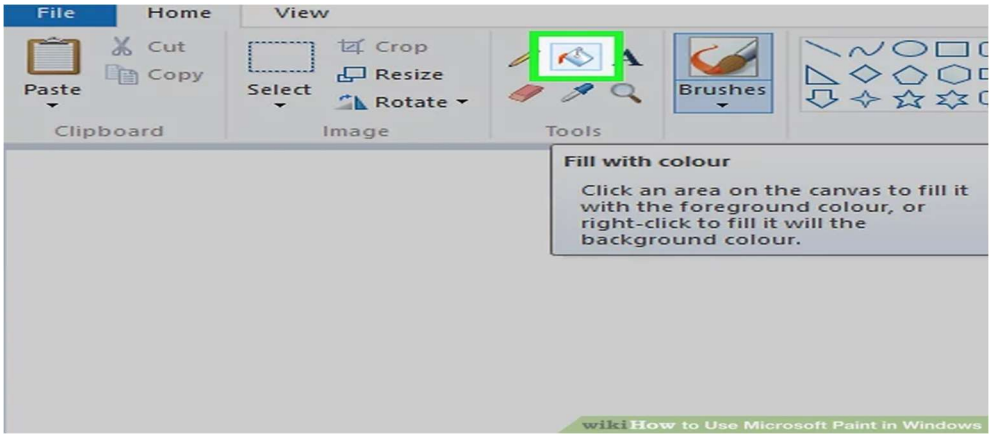
5. Select a line thickness. Click the Size option to the left of the color palette, then click the line thickness you want to use while drawing.

6. Click and drag across the canvas to draw. Holding down the left mouse button while dragging will draw your line.You can click and drag with the right mouse button to use your secondary color.

7. Fill a section with color. Click the "Fill with color" tool, which resembles a paint bucket, in the "Tools" section, then click the canvas to change an entire section of it to your primary color (you can right-click to use your secondary color instead).

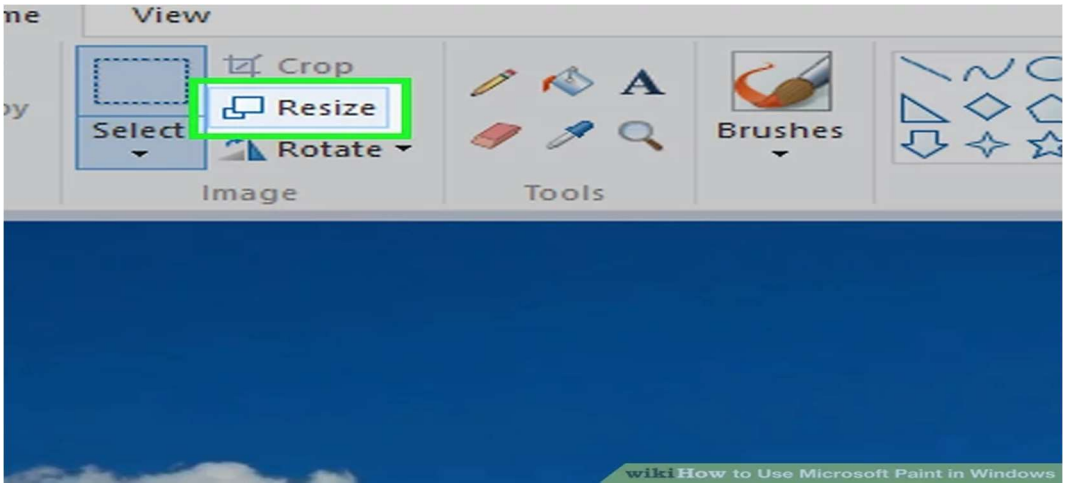
- If you have the canvas sectioned off (e.g., a line dividing the canvas in two), only the section in which you click will be filled with color.

- If your canvas is blank or contains no full sections, your whole canvas will be filled in when you use the "Fill with color" tool.



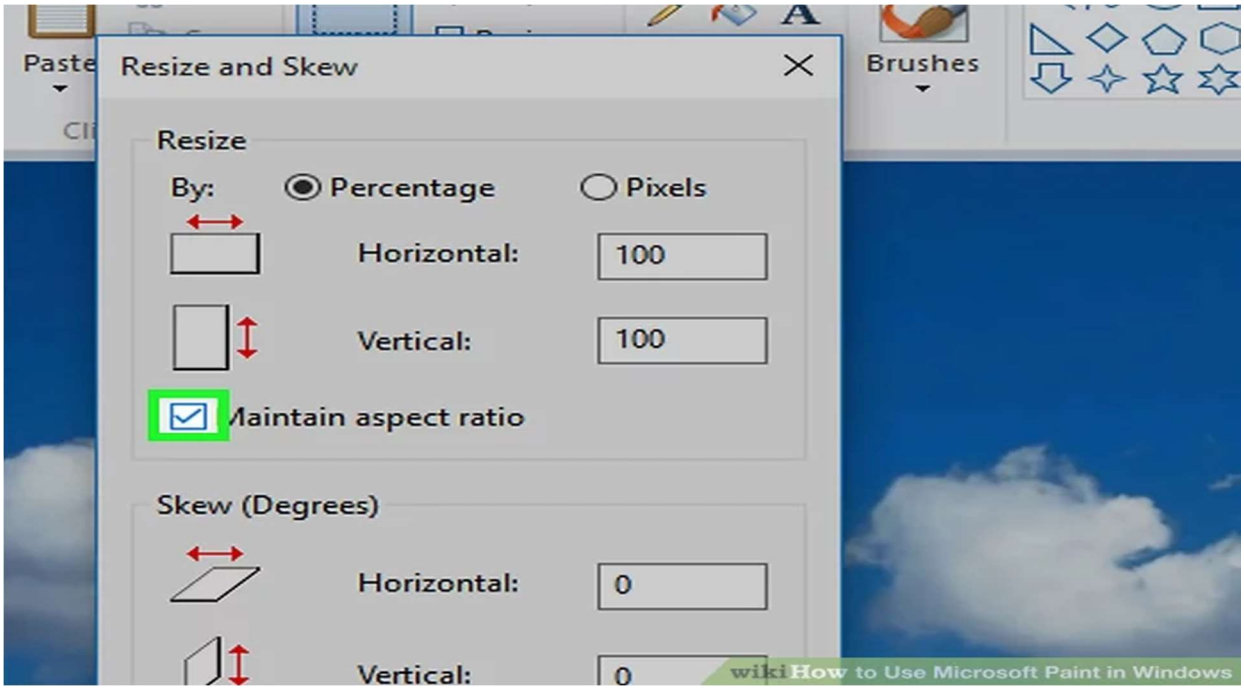
8 **Erase mistakes.** You can use the eraser function by clicking the pink "Eraser" icon in the "Tools" section and then clicking and dragging the eraser over the portion of the image you want to erase. The eraser will use your secondary color, so you may have to reset the secondary color to white (or your drawing's background color, if different) before erasing.

4.5 Resizing an Image

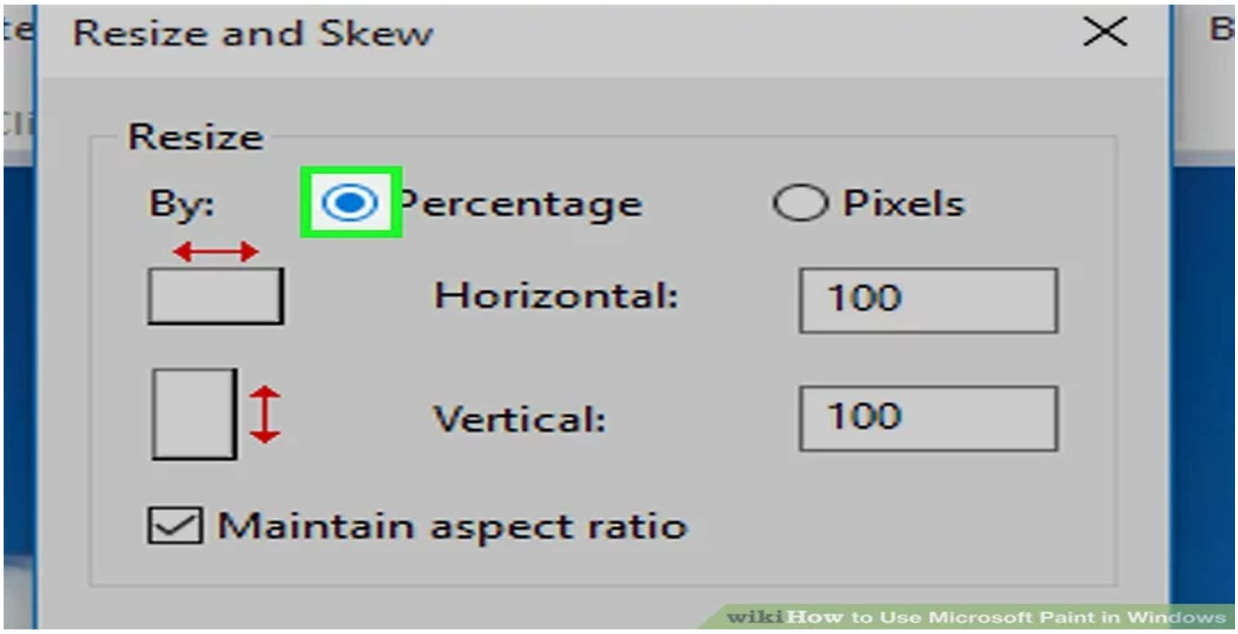


1. Click Resize. It's in the Paint toolbar. A pop-up window will appear.

2. Check the "Maintain aspect ratio" box. This option is in the middle of the window. Doing so ensures that any changes you make to either of the size values won't distort your photo.

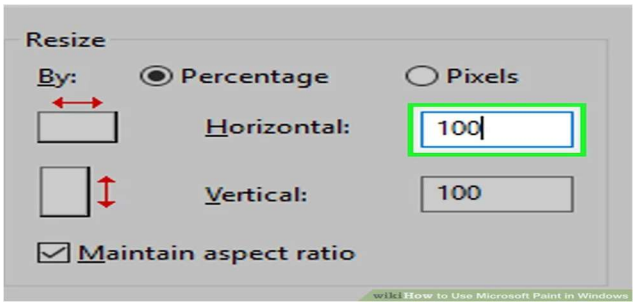


- If you want to increase your photo's height without increasing its width (or vice versa), skip this step.

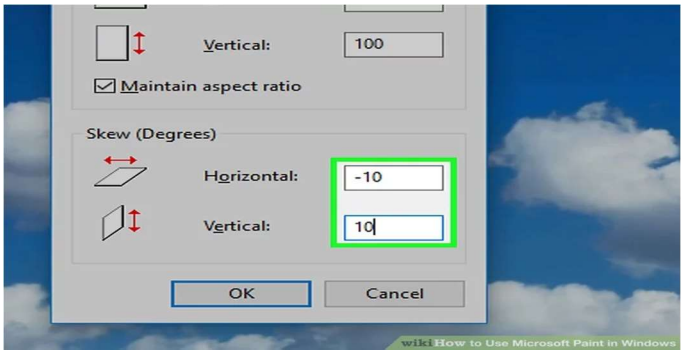


3. Check the "Percentage" box. It's at the top of the window. If you want to resize your image to a specific pixel rating, check the "Pixels" box instead.

4. Change the "Horizontal" value. In the "Horizontal" text box, type in whatever number you want to use to resize your photo (e.g., to double its size, you would type in 200). If you're using pixels instead of a percentage, you'll type the number of pixels to use into the "Horizontal" text box. If you left the "Maintain aspect ratio" box unchecked, you'll also need to change the "Vertical" text box's value.



5. Skew your photo if you like. Skewing a photo will angle it to the left or right. To skew your photo, type a number into the "Horizontal" and/or "Vertical" text fields under the "Skew (Degrees)" heading. If you want to skew the photo in the opposite direction, type in a negative value (e.g., "-10" instead of "10").



Chapter - 5

Power Point

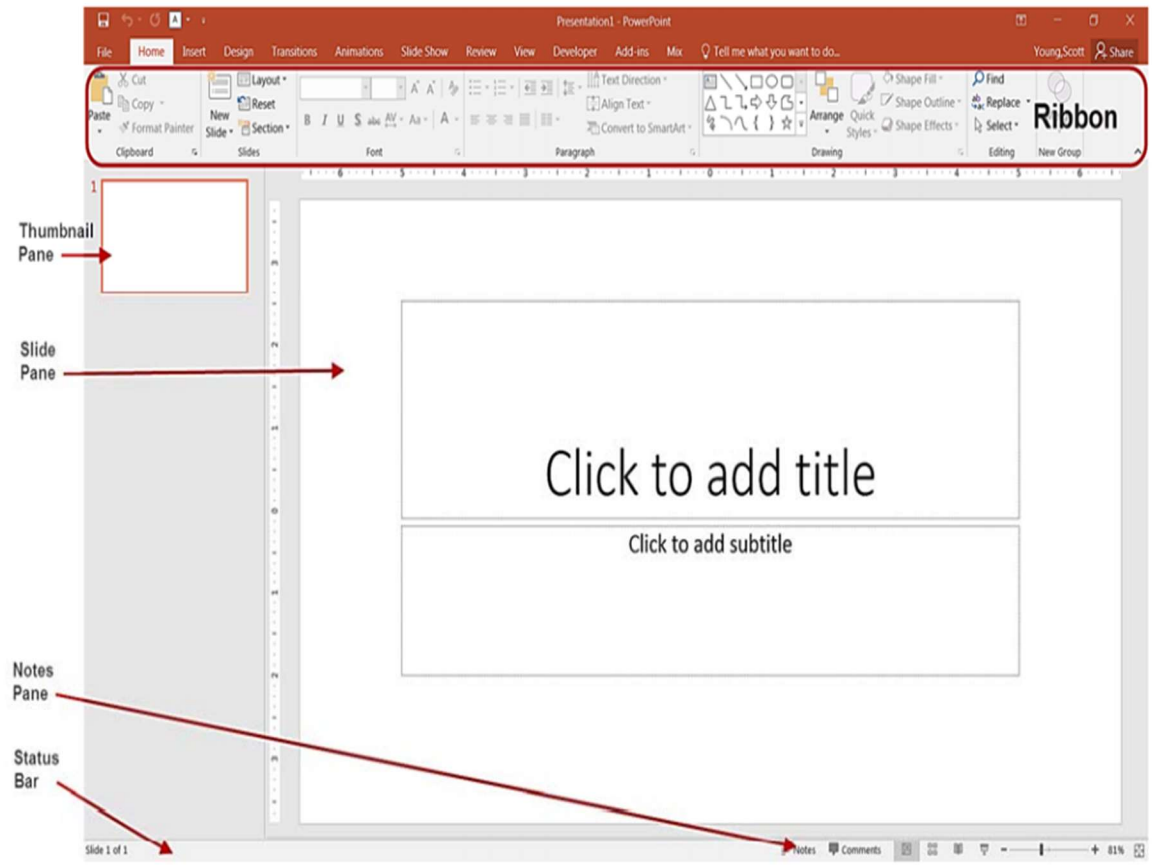
5.1 What is Power Point?

PowerPoint is a graphical presentation program used to organize and present information. PowerPoint presentations consist of a number of individual pages or "slides." Slides may contain text, graphics, sound, movies, and other objects that can be freely arranged. Presentations can be printed, displayed live on a computer, or navigated through at the command of the presenter. For larger audiences, the presentation is often projected onto a large screen. Handouts, speaker notes, or outlines can also be produced from the slides.

5.2 Power Point 2016 Editing Window (Normal View)

The Normal View in PowerPoint features several commonly used Tabs, Panes, and Tools. We'll use Normal View as we create and design our presentation

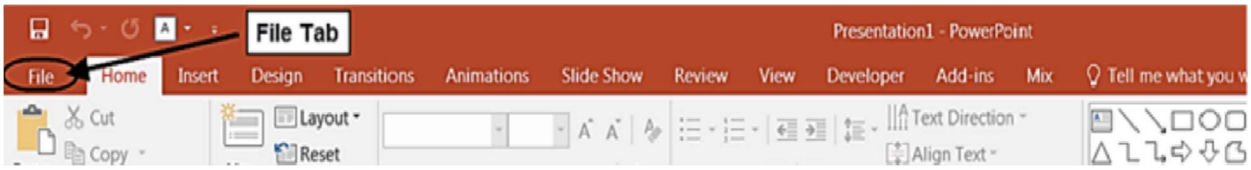
The Ribbon



The Ribbon replaces the menu bar seen in previous versions of PowerPoint. The Ribbon groups items that are most likely to be used together. There are several frequently used tabs, such as File, Home, Insert, Design and View. Clicking on each tab activates a group of relative commands, menus, and buttons. There are also contextual tabs that only show up only when needed, such as Text Box Tools, Picture Tools, Drawing Tools and Chart Tools. To activate those tools, click on the associated object.

5.3 Opening Power Point

To open a PowerPoint 2016 presentation, click on the File tab in the upper left corner.



The most common choices for opening a presentation are:

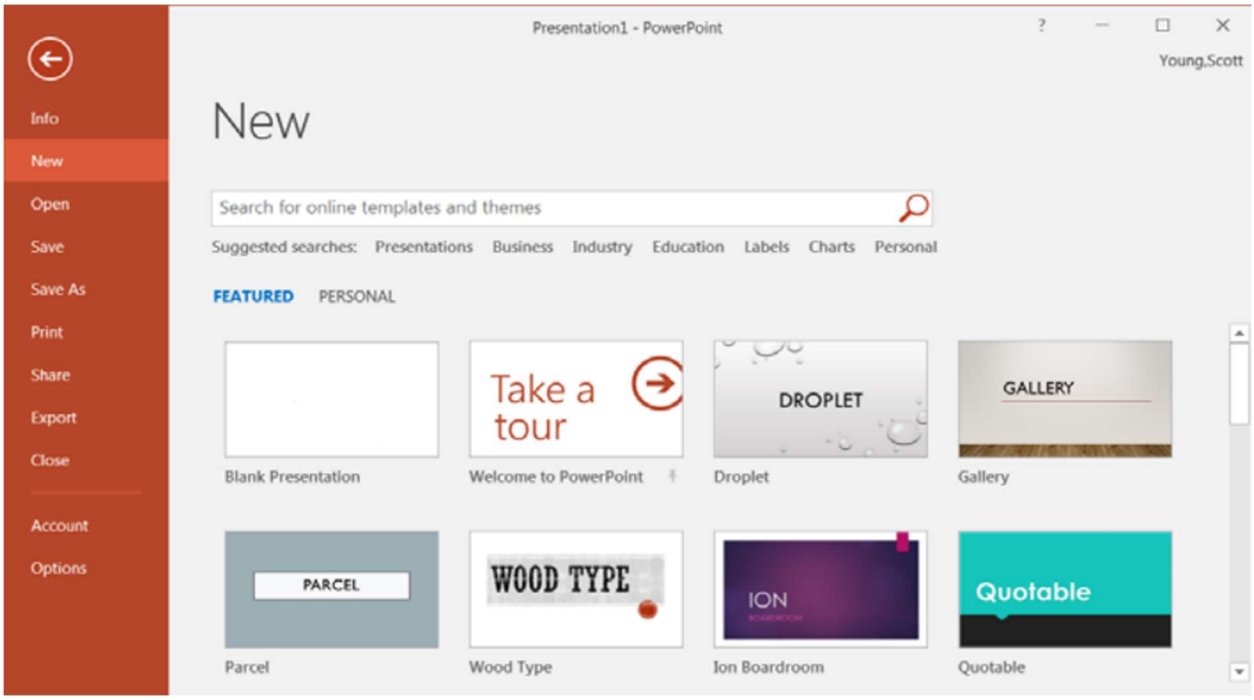
- **New** - allows you to open a Blank presentation or you may choose from a selection of templates and themes.
- **Open** - lets you navigate to an existing file to view and/or modify a presentation that has already been created.
- **Recent** - displays a list of your most recently created presentations and their file locations.

5.4 Creating New Presentations

The New selection gives you several options:

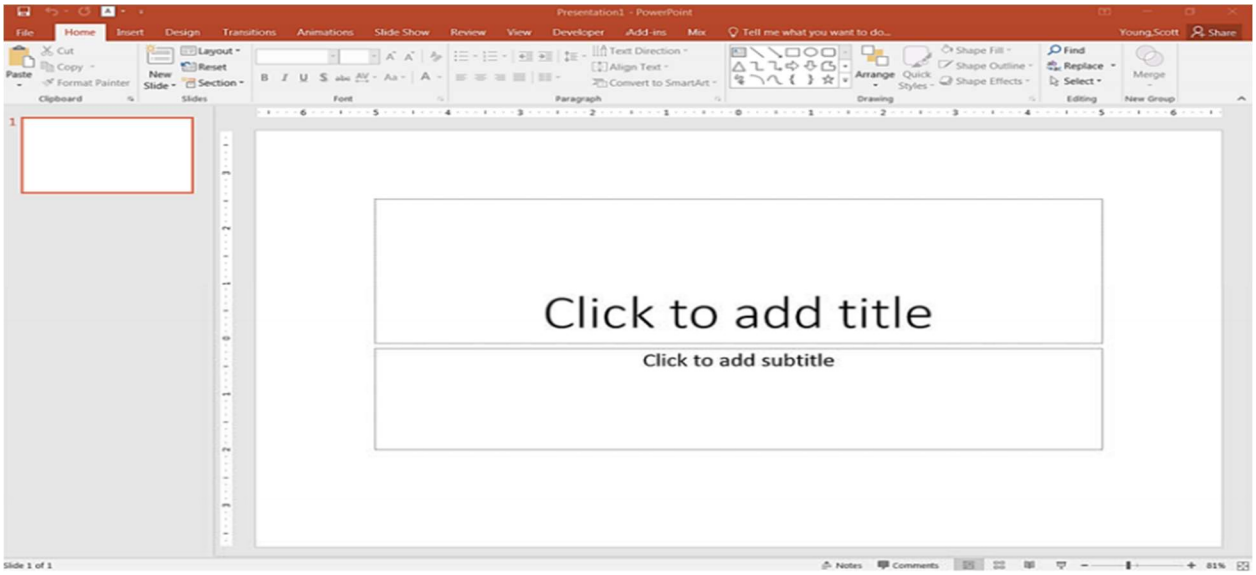
- **Blank presentation** creates a new presentation using default settings for text and color. Theses slides will not include content or design elements.
- **Templates and Themes** are used to create a new presentation based on pre-designed slide styles. These options also do not include content.
- **New from existing** will use the formatting of a previously created presentation.

For this exercise, we'll start with a Blank presentation. Select New, choose Blank presentation and click on the Create icon.

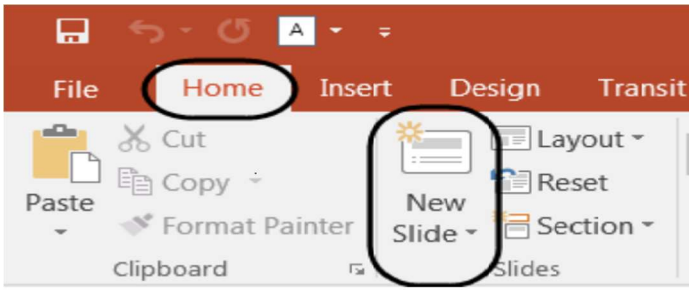


5.5 Power Point Slides

When you choose to create a blank presentation, PowerPoint will open a presentation with a Title Slide. Once the Title Slide is open, you'll see a slide with two placeholder text boxes for a title and a subtitle. Click inside the placeholder box and type to add the title. If you want a subtitle, click and type inside the smaller placeholder. If you don't want a subtitle, you can just ignore its placeholder box.



To add a New Slide, make sure you're on the Home tab. The New Slide button will add slides to your presentation.



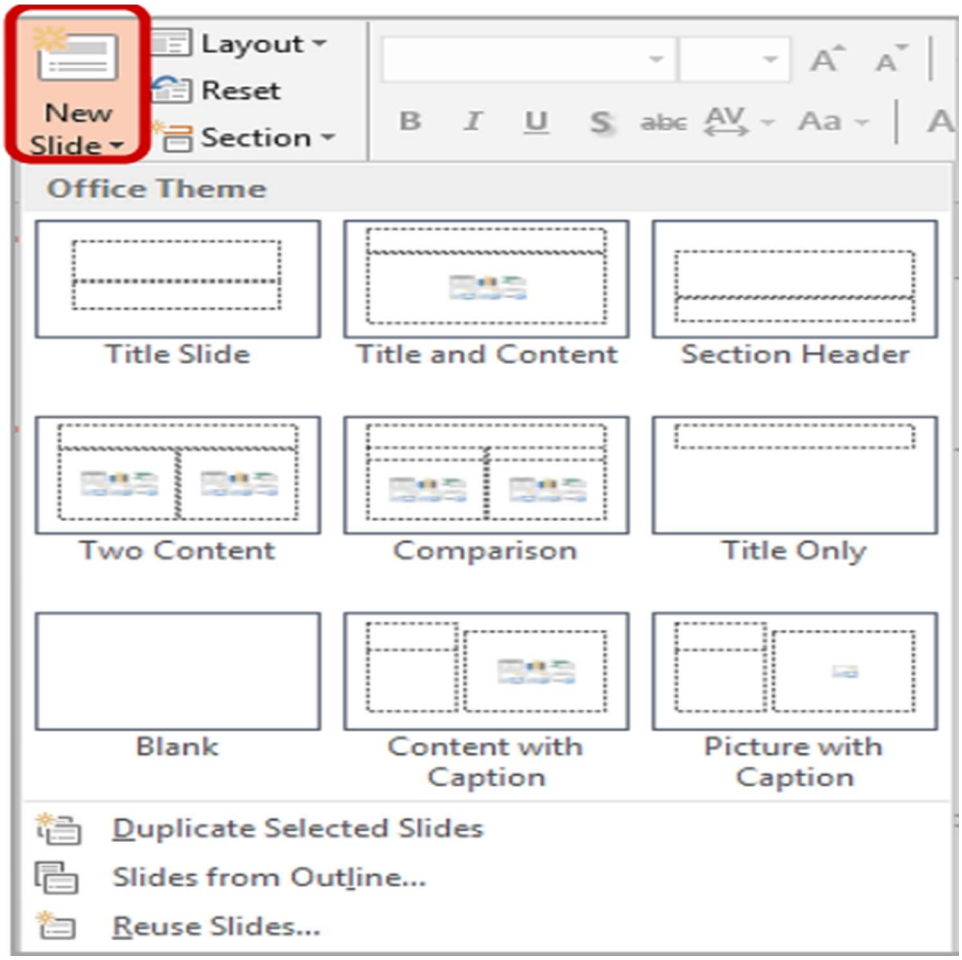
The New Slide button has two parts:

Clicking on the top part will automatically insert a new slide. If you have just reacted a Title slide, the new default layout will be a Title and Content slide (for details, see the section on slide layouts).

Clicking on the bottom will give you a choice of layouts. You can choose which layout you want for your next slide. Select a slide layout by clicking on its image in the Office Theme gallery.

5.6 Slide Layouts

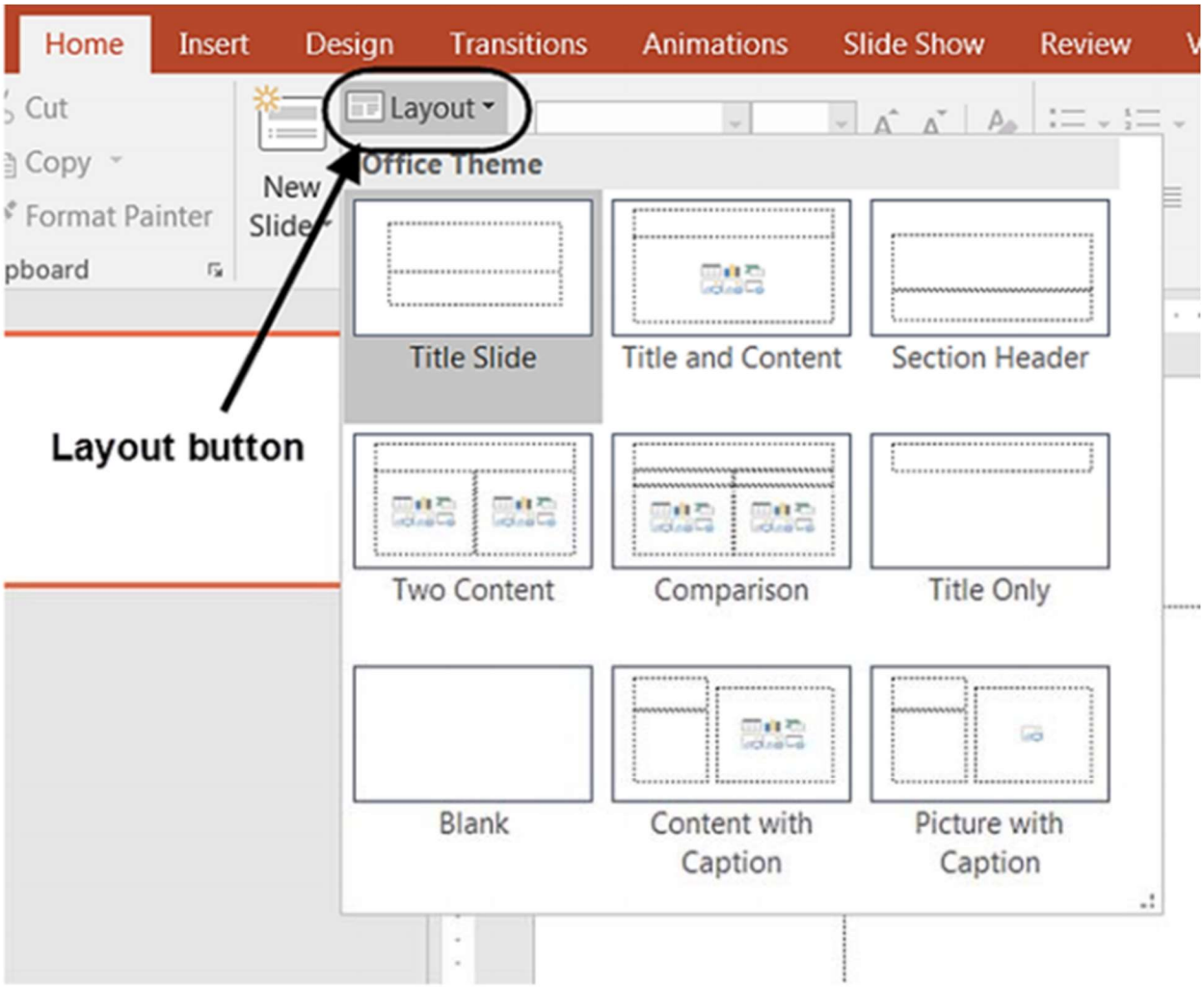
Slide by clicking on it in the There are several standard slide layouts to choose from when adding new slides. A unique layout can be chosen by clicking on the bottom half of the New Slide button in the Home tab. When the layout gallery opens, click on the style you want and a new slide with that layout will appear in your presentation. Each layout caption describes the layout type. Content can be text, tables, charts, graphics, pictures, clip art, or video. If you decide later that the layout you chose doesn't work well for a particular slide, select the Thumbnail pane. Next, click on the Layout button in the Slides group of the Home tab. Click on a new layout and it will change the layout of the slide.



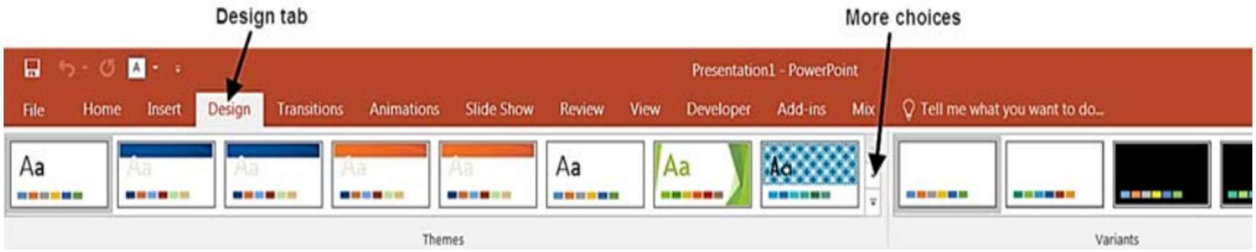
5.7 Applying a Theme

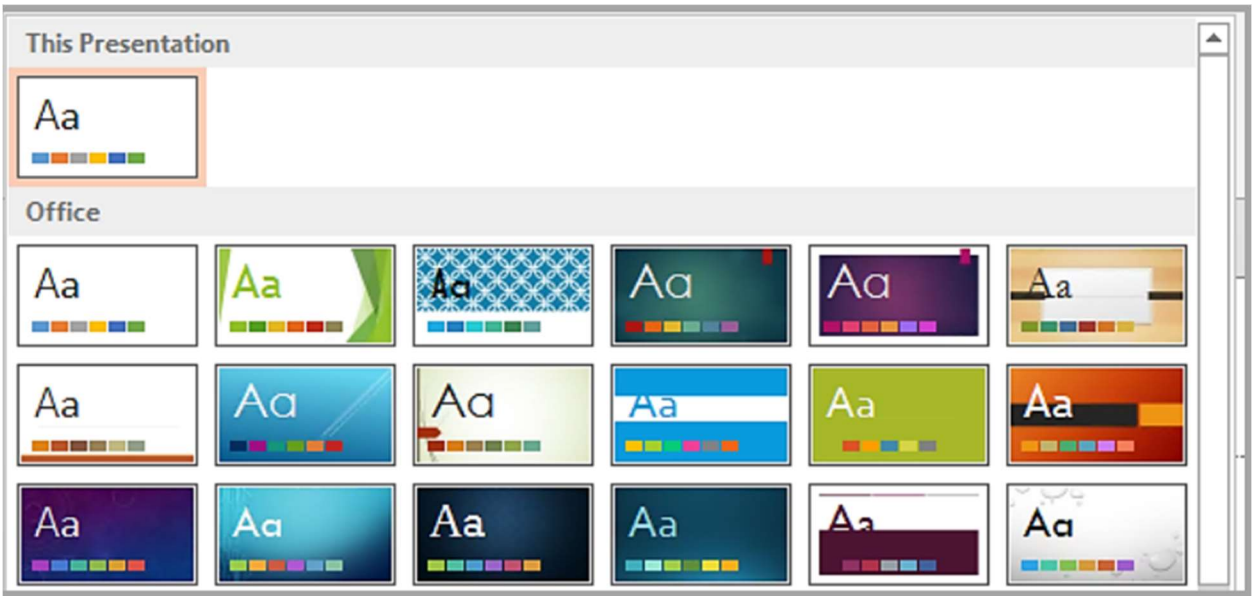
Once a new presentation has been created, a design or color scheme can be added. Remember to use color carefully to enhance your presentation, not detract from it. You will want to maintain good contrast between the background color and the text color. Consider using a light colored background and dark text (or vice versa), but avoid busy backgrounds and primary colors. Use sans serif fonts like Arial, Calibri, and Helvetica for titles and size them between 44 – 60 points. Sub-headings should be between 32 – 40 points, and body text between 18 – 32 points. Try not to use more than two fonts.

PowerPoint has many pre-set designs and themes that include complimentary colors and fonts. To add a theme to a presentation, go to the Design tab in the ribbon. There are several themes immediately available. To use one of the built-in themes, just click on its thumbnail.

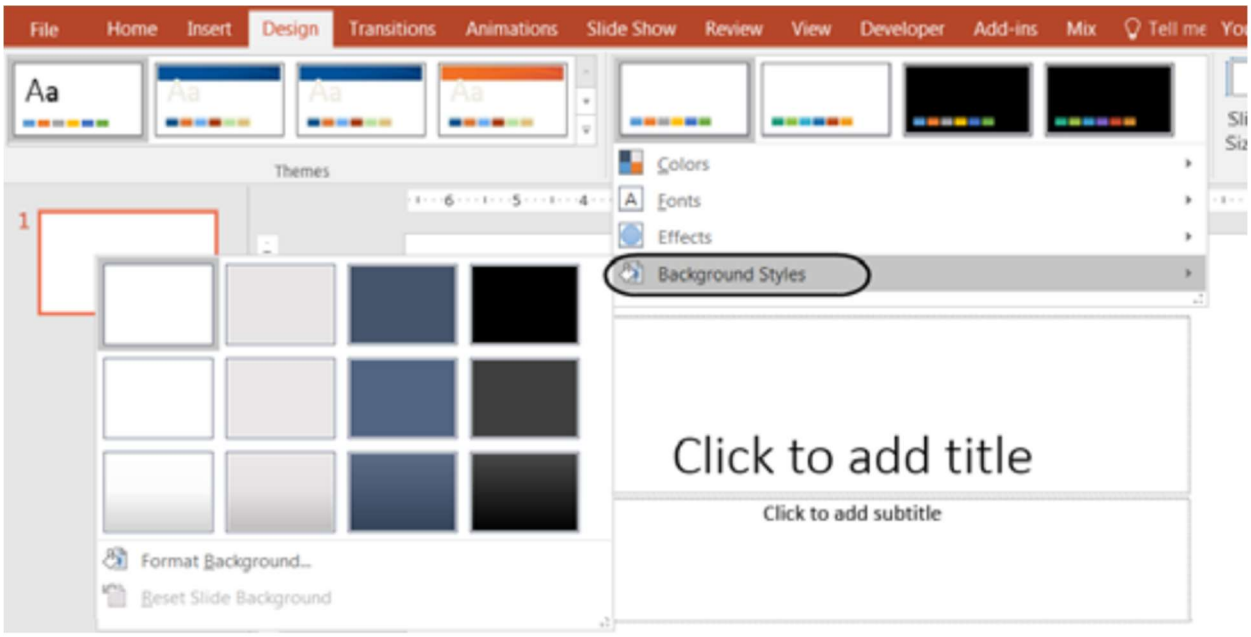


On the right side of the Theme thumbnails, there's a scroll bar and an Arrow Down button, which will offer more designs, as seen below. If you're online, you can get more themes from Microsoft Office Online. (Your office program must be a genuine Office product to get online templates).



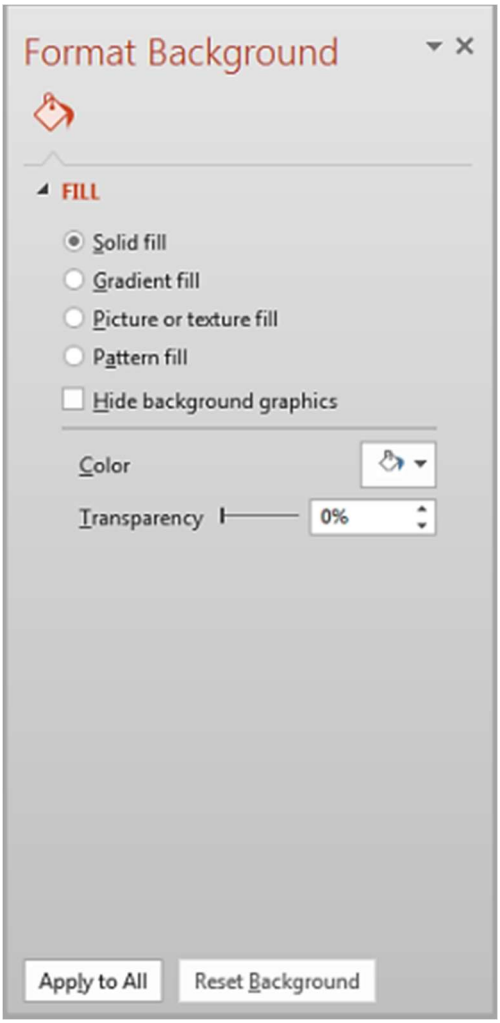


If you don't want to use a theme, you can add Background Styles. From this selection, you can add some preset background styles that change according to the colors you've chosen.



Using the Format Background feature, you can choose fill colours, gradients, transparencies, textures, or pictures for your background.

When you have the desired background fill effect, select Close to apply it to the selected slide or choose Apply to All to add the background to all of the slides in the presentation.

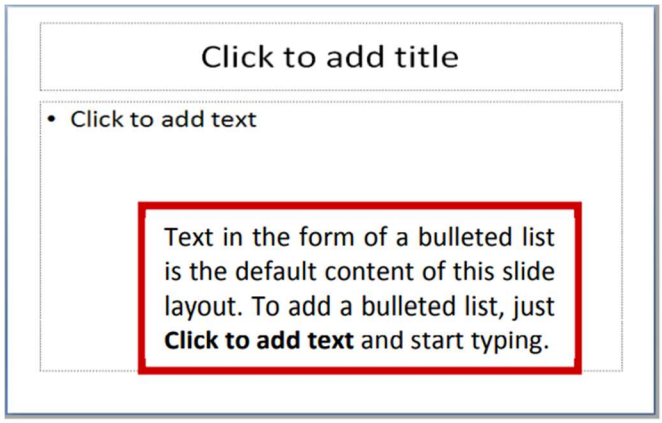


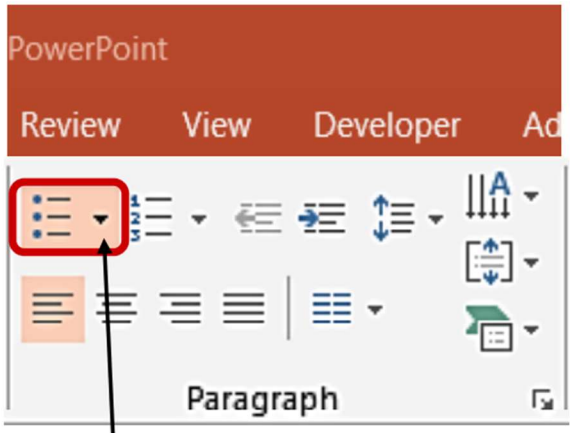
Designs can be added to all of the slides or to selected slides. To select multiple slides, click on a slide in the Thumbnail pane of the navigation bar and then hold down the control key and click on any other slides you want to apply the design to.

5.8 Text

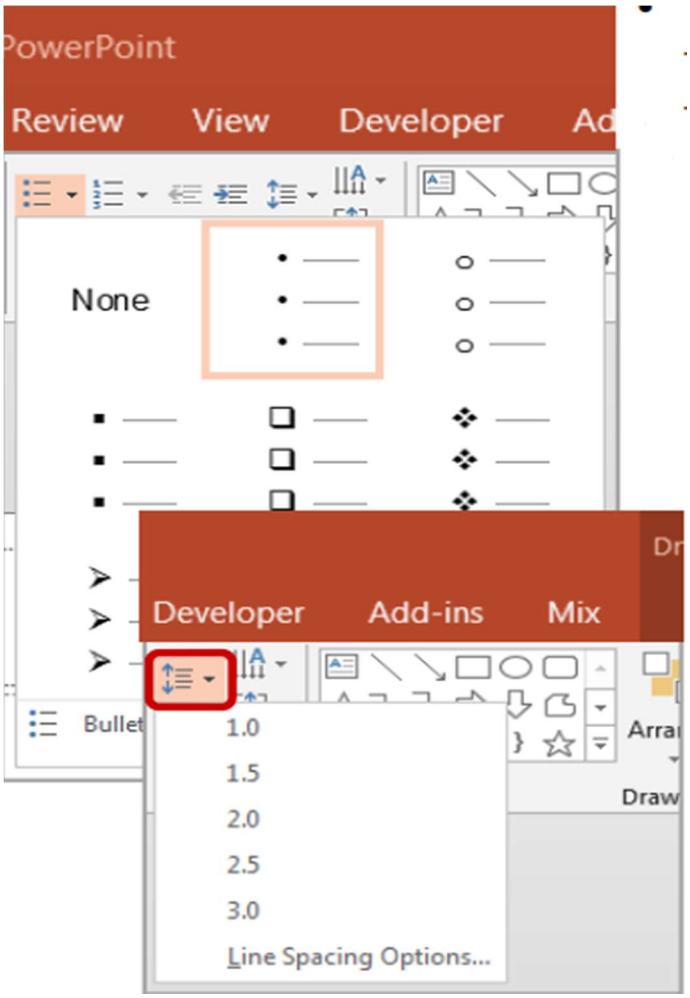
Formatting Bulleted Lists

In PowerPoint, you can easily modify a slide's default bulleted list. Click inside the text box, and the Format tab will automatically be highlighted. Click on the drop down triangle next to the Bullets button in the Paragraph group.





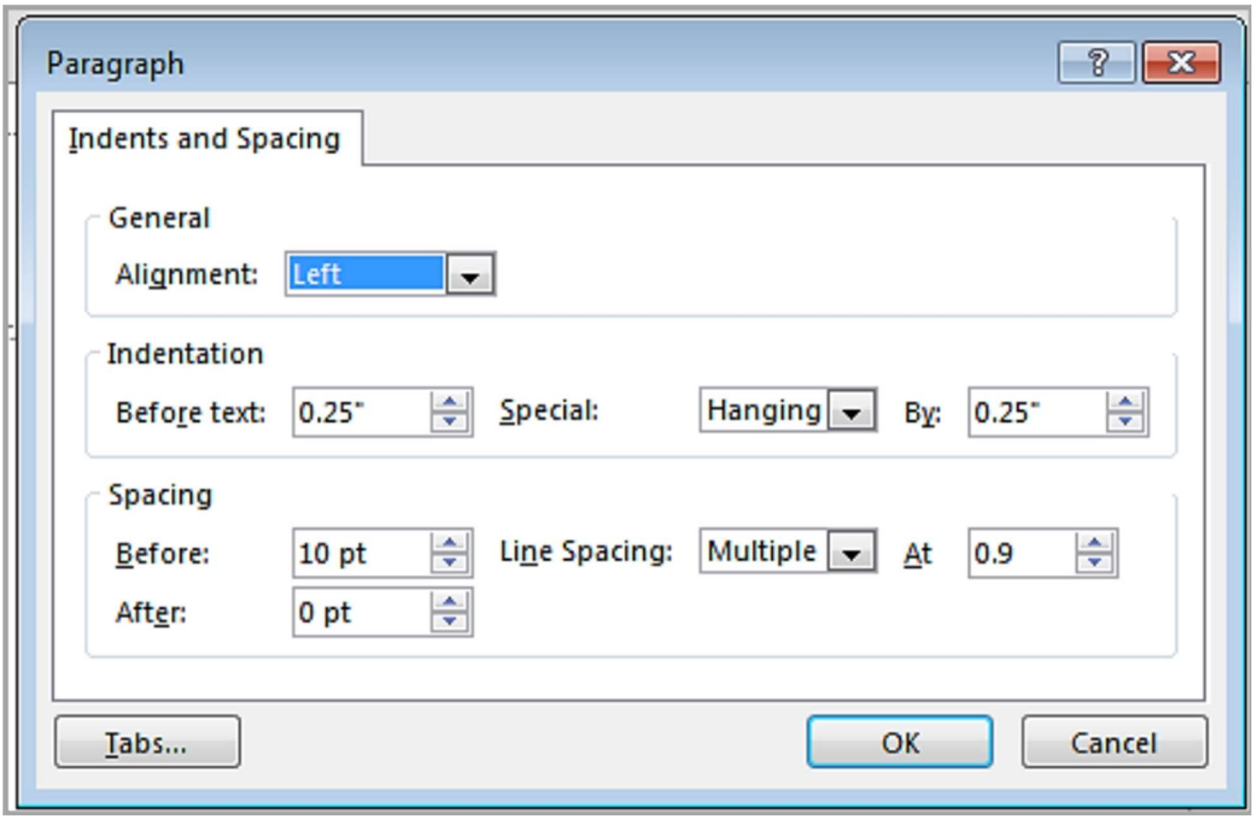
Bullets Drop Down Button



From the Bullets and Numbering menu you can make various changes to your list:-

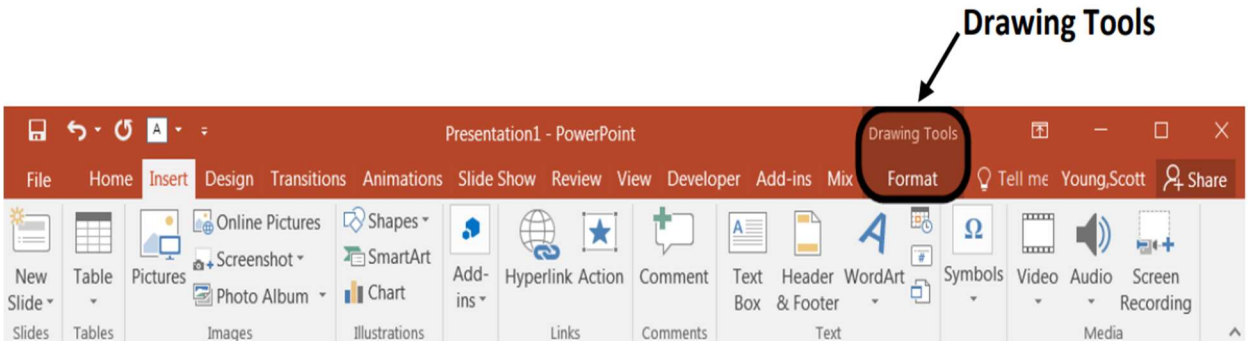
- The bullet size relative to the text
- The colour of the bullet
- The shape of the bullet using either a picture or a character

You may also want to adjust line spacing between paragraphs or lists. You can do this through the Paragraph group of tools by clicking the Line Spacing button and selecting Line Spacing Options. **Indents and Spacing** controls will open in a separate dialog box.

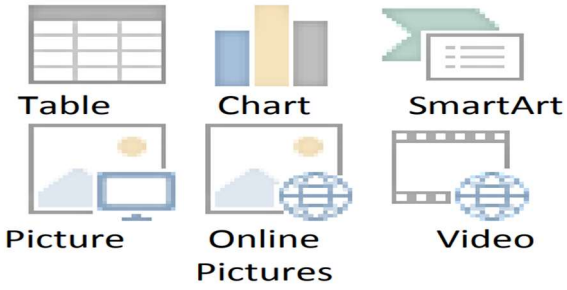


5.9 Adding Content

Text is the default content of the slide below. The format for the default text is a bulleted list. To add text, click and begin typing. To add other content, click on the icon within the content group on the new slide. Each icon will open the appropriate dialog box or task pane in the Drawing Tool.

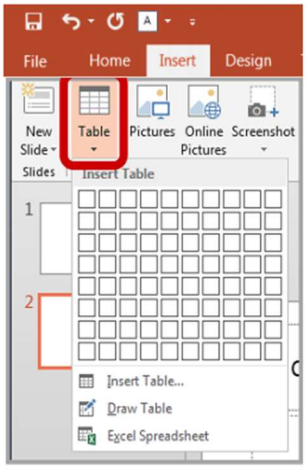


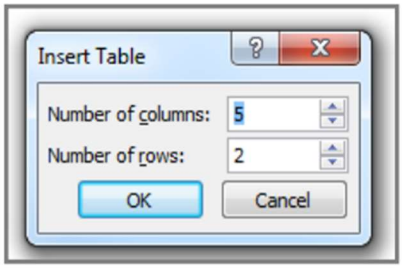
The icons represent the six standard graphical elements that you might want to insert.

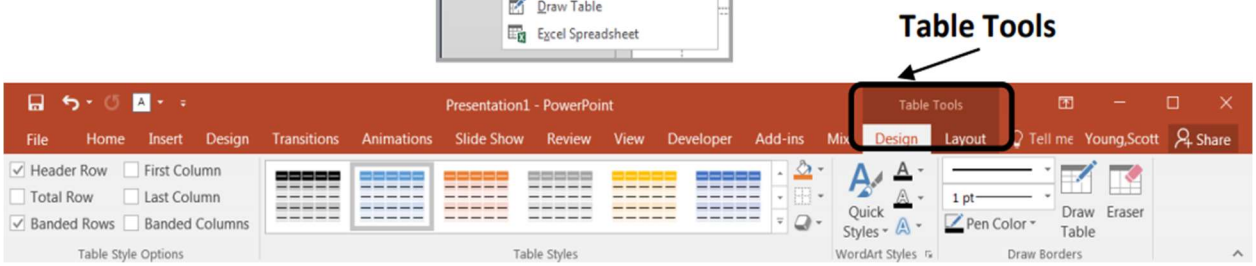


Clicking on an icon will open the associated dialog box. Note that these icons, as well as several other insertion options, are also displayed in the Insert tab on the Ribbon.

5.9.1 Tables



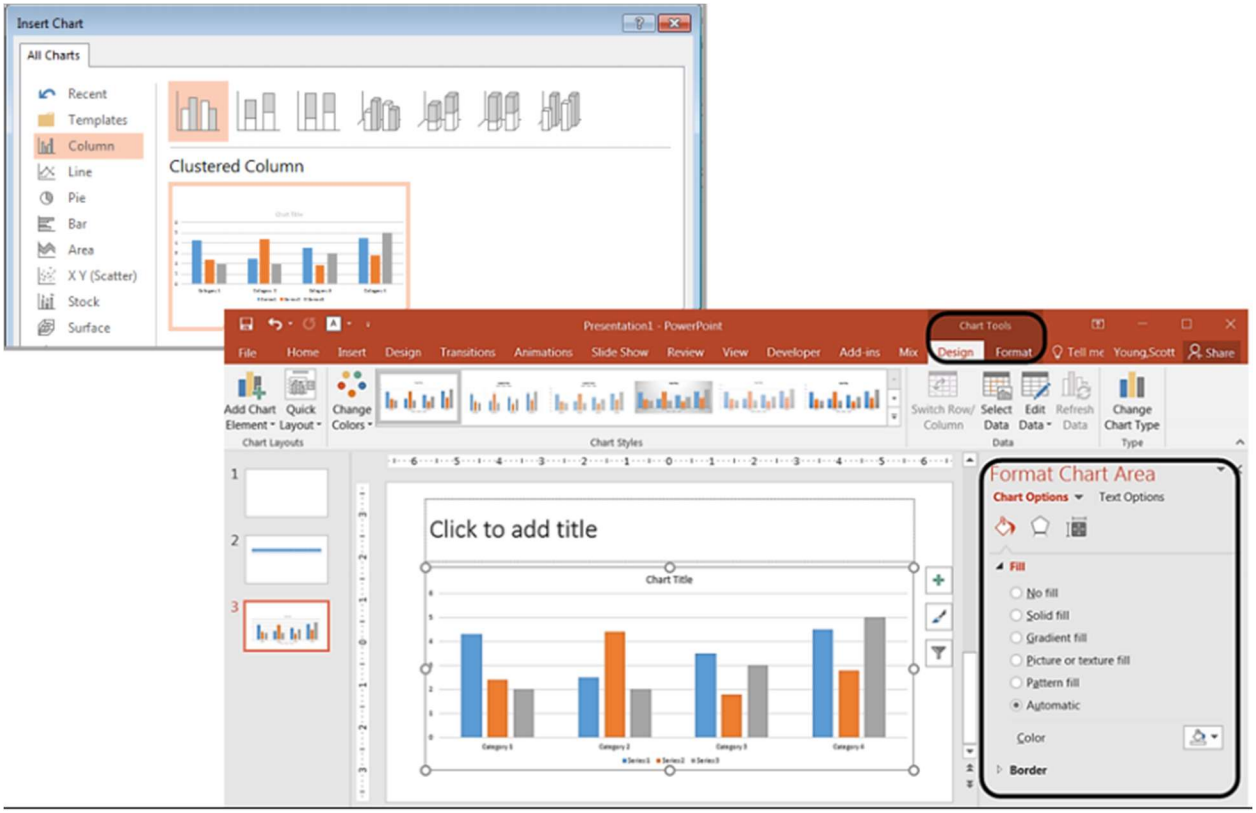




Set the number of columns and rows as needed in the Insert Table dialog box and click OK. Methods for editing and the design and layout of your table are located on the Table Tools contextual tab.

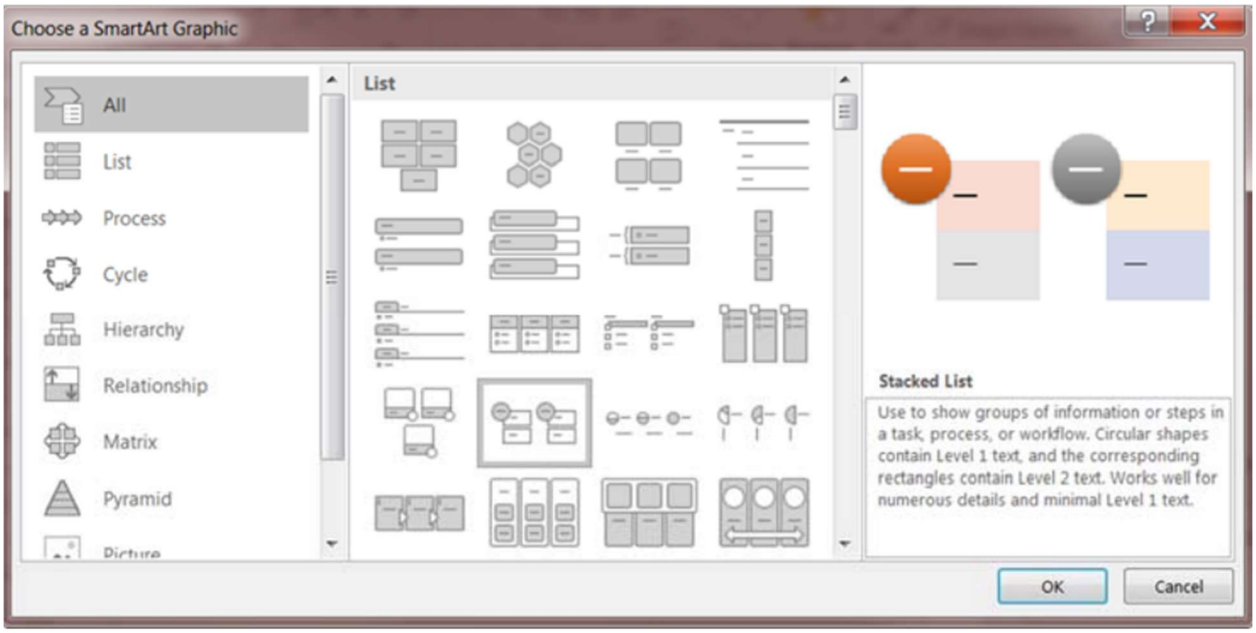
5.9.2 Charts

Select the type of chart you want and click OK. Once inserted into the slide, you can click on the chart to activate the Chart Tools contextual tab, where you'll find tools for editing chart data and changing layouts and styles.



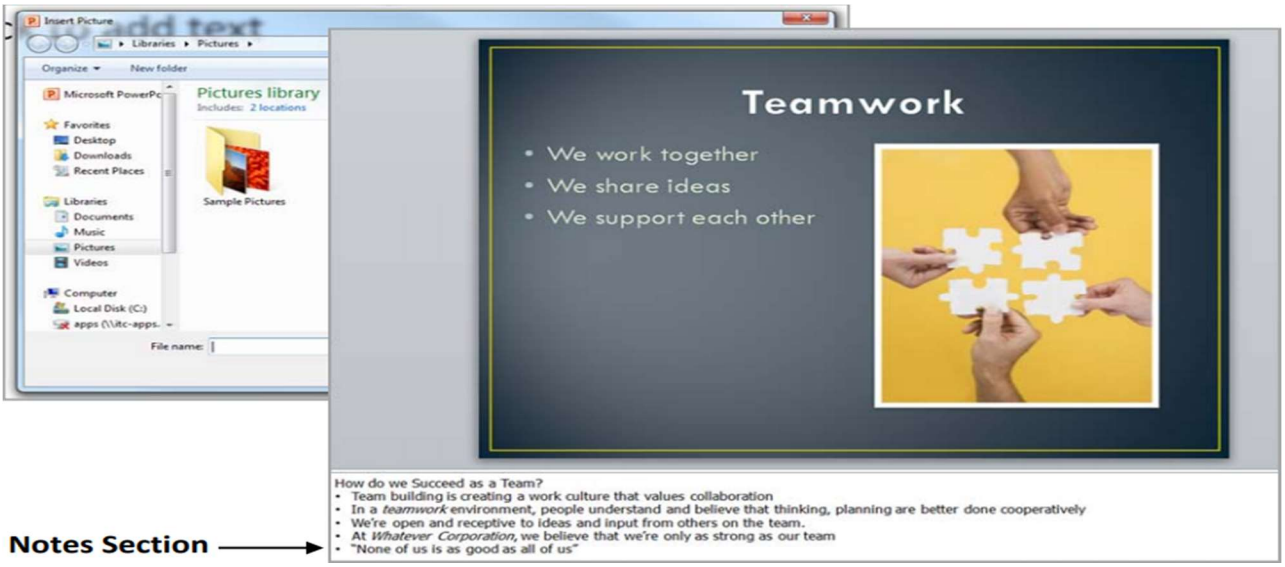
5.9.3 SmartArt Graphics

SmartArt graphics are shapes that are designed to represent the relationship between things or people. You might use SmartArt for an organizational chart or a timeline. SmartArt styles and layouts can be formatted in the SmartArt Tools contextual tab.



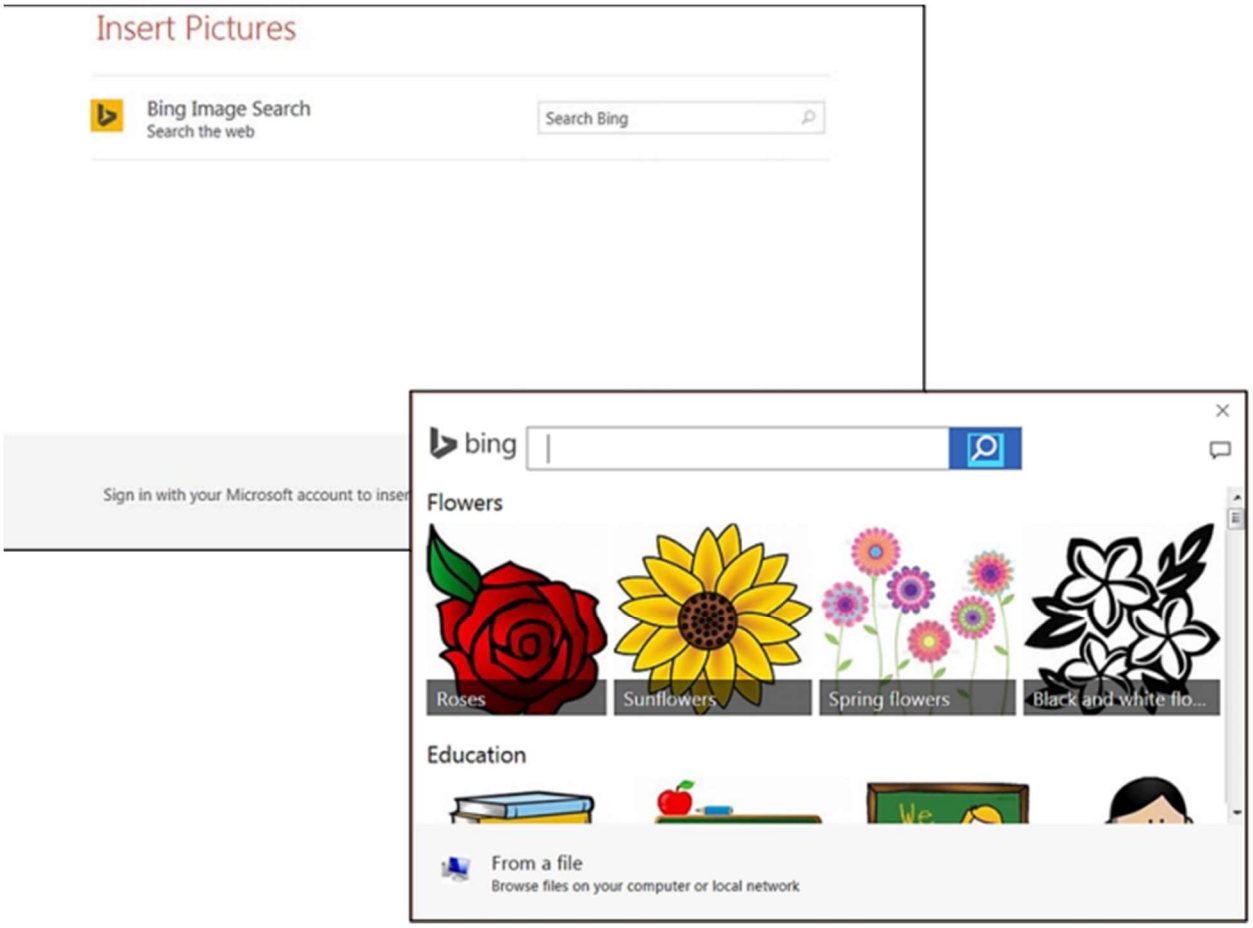
5.9.4 Pictures

Rather than using too much text on your slides, consider using pictures along with text as a more interesting way to communicate your ideas. You can put lots of text into the Notes Section and refer to that as you're speaking. When browsing for images, keep in mind that pictures imported from web sites can be low resolution, and are typically used for on-screen presentations and web pages. If you're going to print handouts, be sure to use images that are at least 180 dpi (dots per inch).

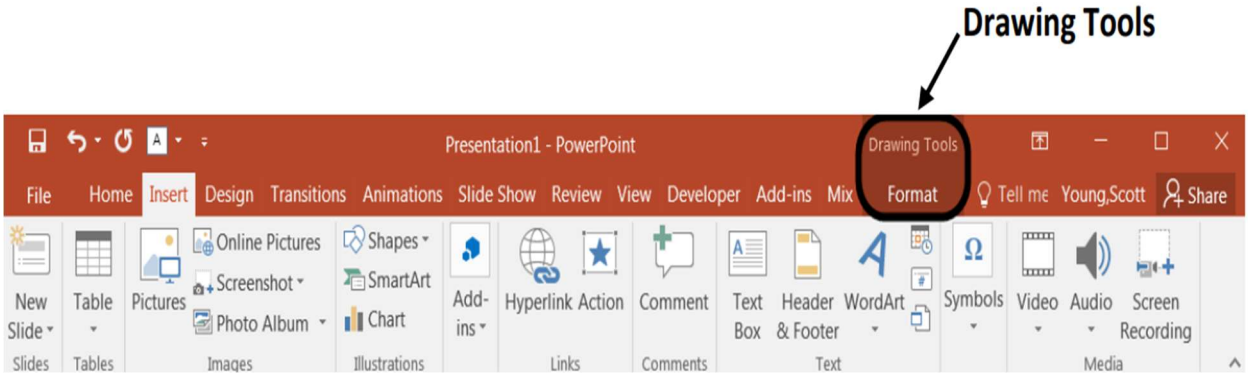


5.9.5 Online Pictures

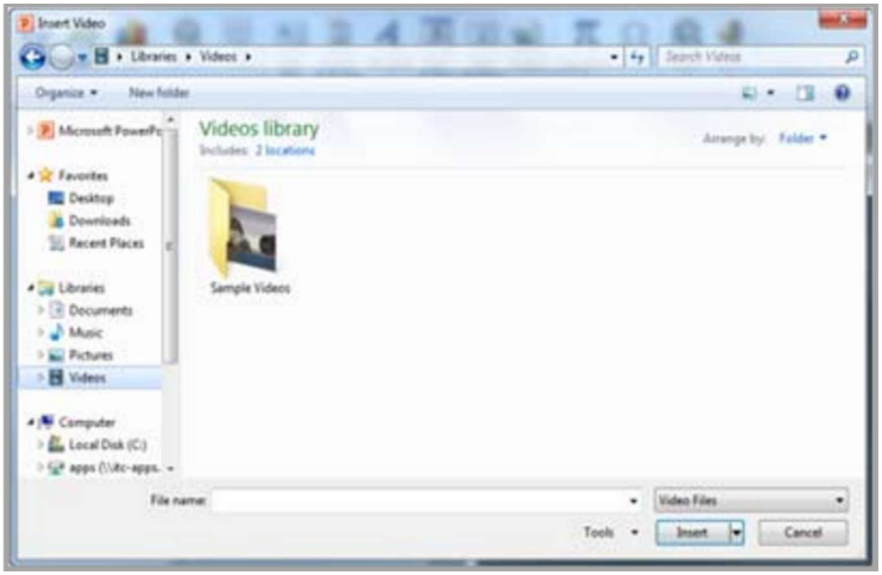
Online pictures have replaced the old Clip Art. When you click on the Online Pictures button you get a search box. You can type in a word and press enter to search for a specific image or you can click on the Bing Image Search icon to browse categories.



5.9.6 Videos / Media

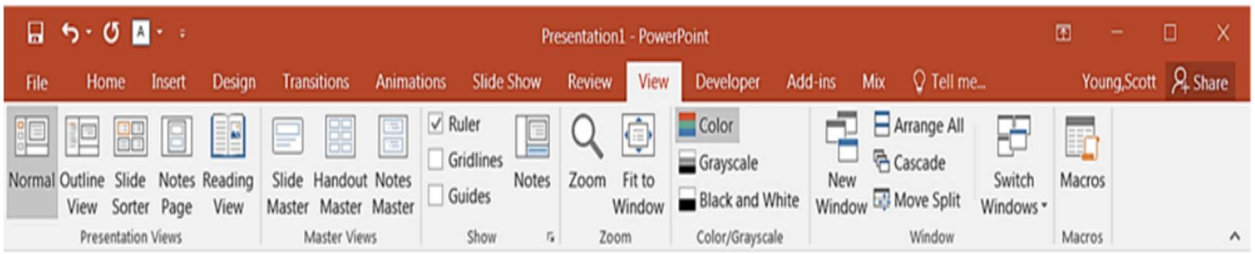


You can embed a video or link to a video from your presentation. If you want to limit the size of your file, you can link to a video file on your local drive or to a video file that you uploaded to a web site, such as YouTube or Hulu.



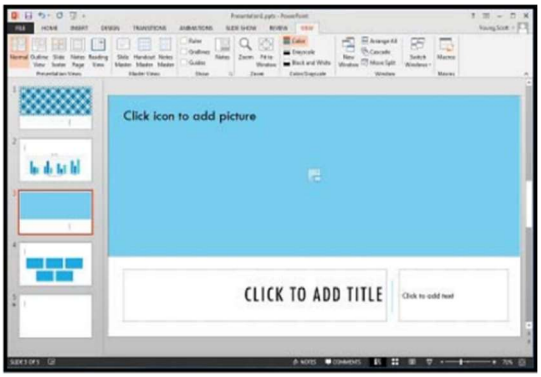
All options to insert video or audio are located on the Insert tab, in the Media group.

5.10 Viewing Presentations

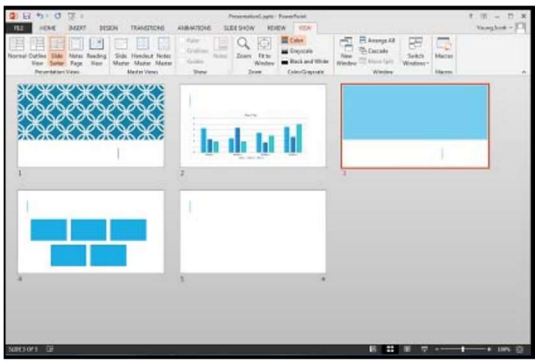


There are four different ways to view your presentation in PowerPoint. The views can be accessed using the buttons in the status bar, or by using the View Tab on the Ribbon.

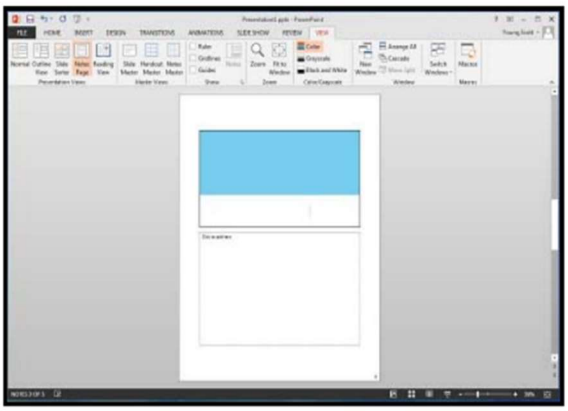
- **Normal View** displays a single slide as it appears in the presentation, as well as thumbnails and an outline tab, where you can organize the structure. Speaker notes can be added in the bottom section of this window. This view is used to create and edit slides.

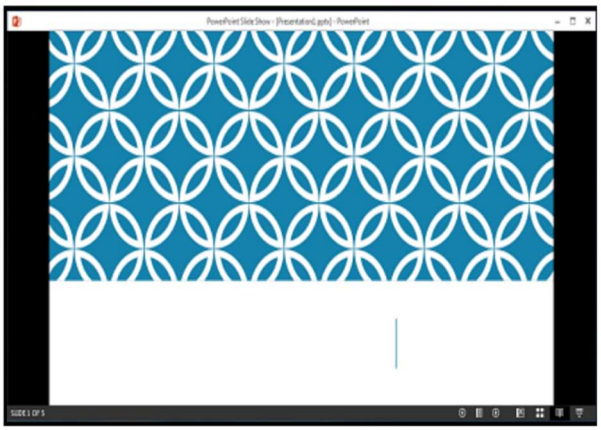


- **Slide Sorter View** shows thumbnails of your slides. From this view you can reorder slides by dragging and dropping them, or you can set the timing for the slide show. You can also hide slides in this view. Hiding a slide will keep it in the file, but it will not show when you view the presentation.



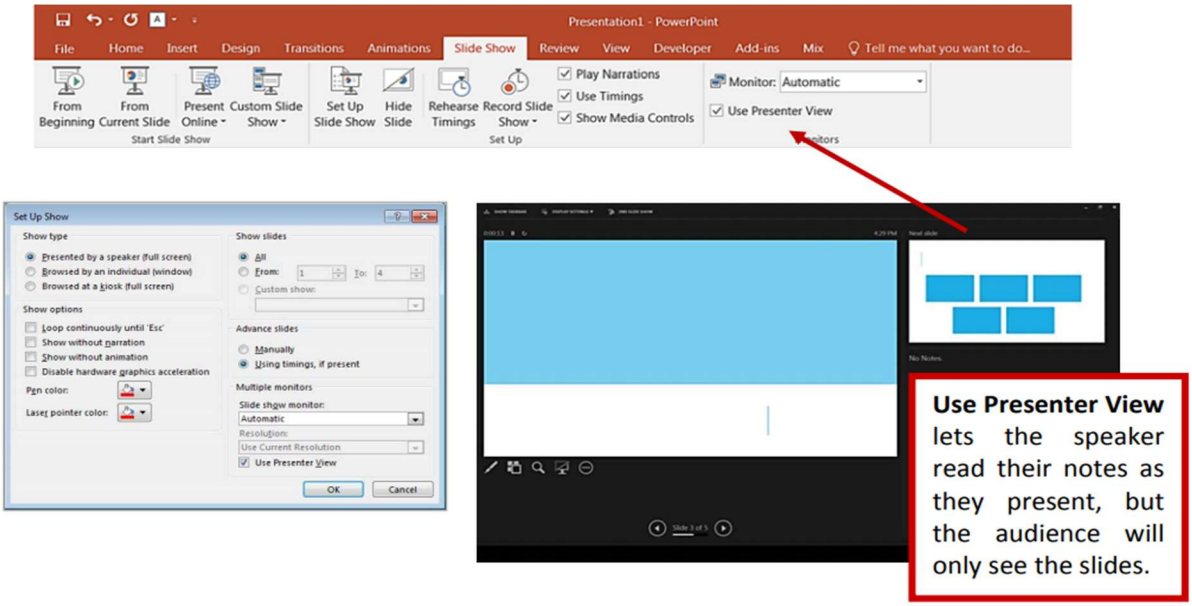
- **Notes Page View** allows the speaker to create notes to use during a presentation. Each page corresponds to one slide. These can be printed to assist the presenter during the presentation. Use this view when you're composing speaking topics.





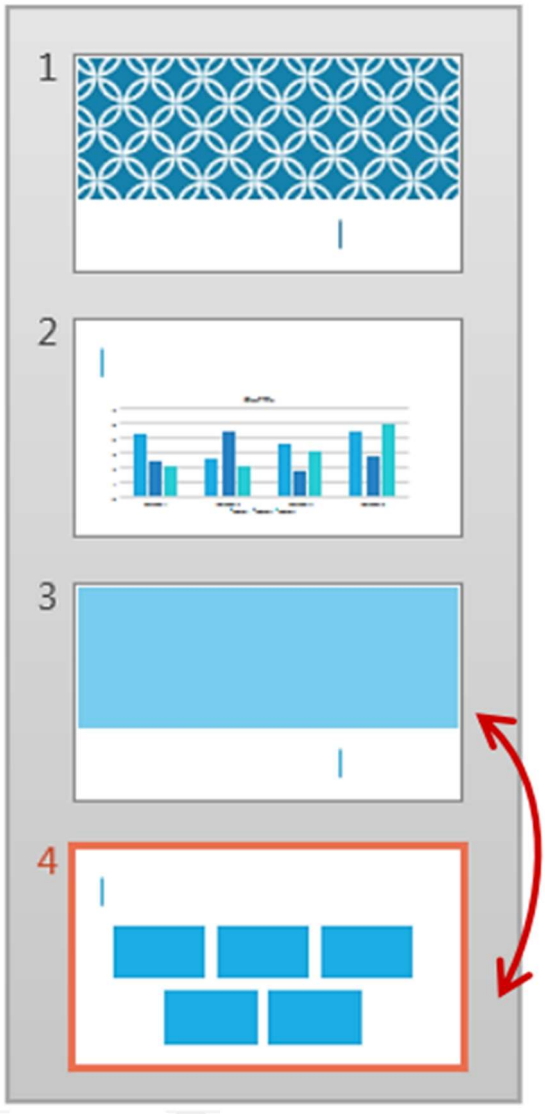
Reading View/Slide Show View displays the slides as an audience will see them. Use the arrows and icons on the lower right side of the Status Bar to advance slides or switch views. Use the **Esc** key to return to Normal View.

5.11 Slide Show Tab



The Slide Show Tab allows you to review the slide show from beginning to end or from the current (active) slide. You can also control how the show will be presented and rehearse timings in the Set Up Slide Show drop down box.

5.12 Changing the Order of Slides in a Presentation



Select slide 4 and drag it above slide 3

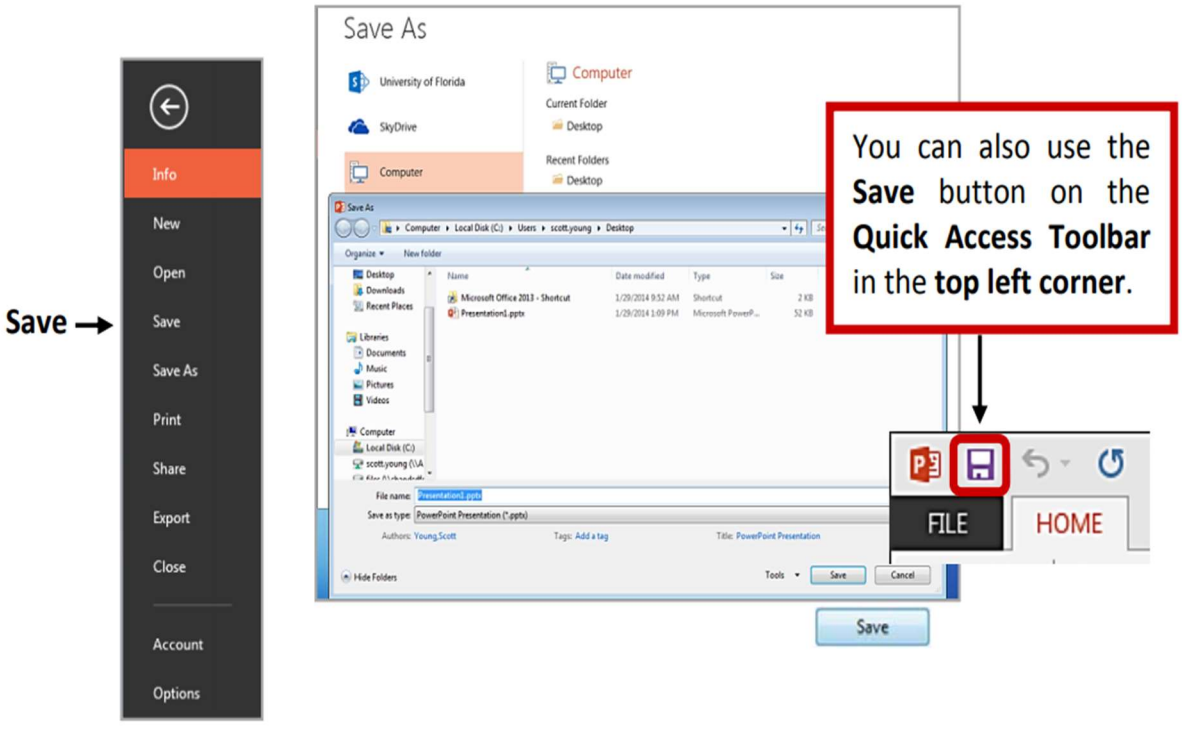
In the slide sorter view, click and hold down the left mouse button and drag the slide to a new location. You'll see a line where the slide will be placed when you release the mouse button. This can also be done in the Thumbnail pane area of the Navigation bar.

5.13 Power Point Help

If you need help at any point while you're creating or presenting a Power Point slide show, you can press the F1 key on your keyboard to get content-specific help.

5.14 Saving a Presentation

You can save a file by clicking the File tab, choosing Save, typing a descriptive name into the File Name window, and then clicking the Save button.

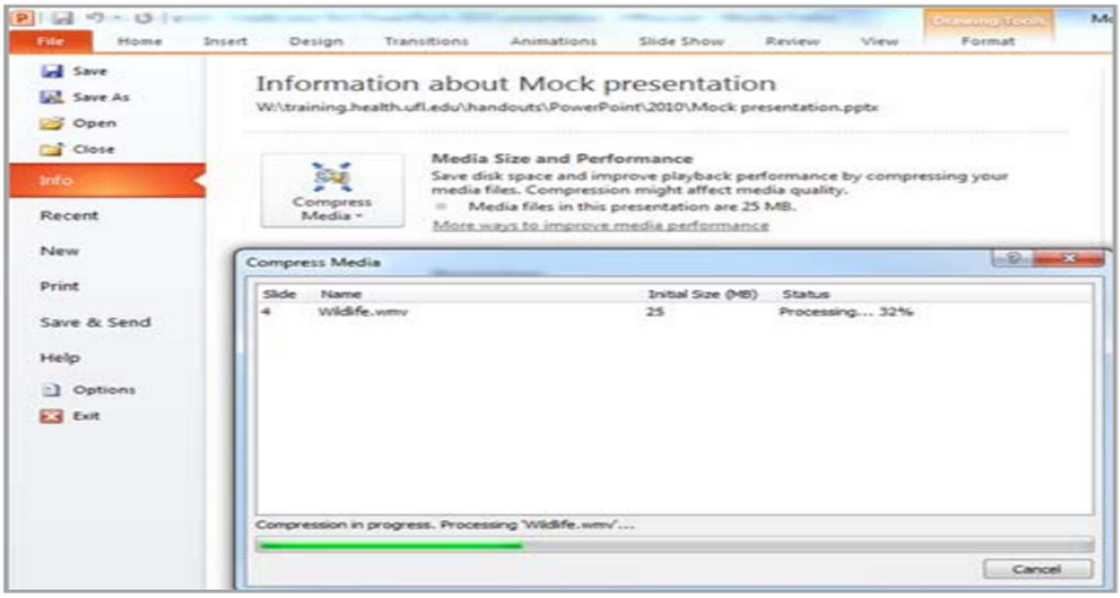


If others will need to open your file with previous versions of PowerPoint, use the Save As option and select PowerPoint 97 – 2003 Presentation from the Save as type menu.

5.15 Save and Send to Others

If you need to send your presentation to someone else, the best way to is to use the Save & Send option. You can send an attachment of your file using Send Using E-mail, but if you have large media files, such as videos, you'll need to compress those first to make a smaller file. On the Home

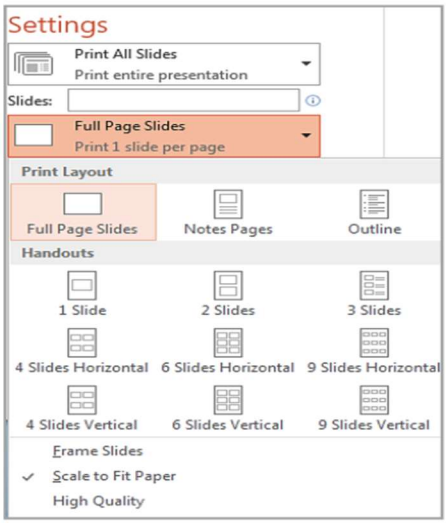
Select the Info tab and click the Compress Media button and choose Presentation Quality. Note: Only available if you have inserted media.



You also have the option to Package Presentation for CD. This allows you to add other files or to add a PowerPoint Viewer so that the presentation can be run on a computer that does not have the PowerPoint program. You can also add any linked files such as video or audio.

5.16 Printing your Presentation

PowerPoint offers several print options to help you prepare your presentation. You can print slides, handouts, and/or notes to support your presentation.



Types of Print Layouts

- **Print All Slides** prints out the entire presentation, one slide per page, usually landscape. If you have color graphics on your slides and a large number of pages to print, you may want to print in Grayscale or Pure Black and White.
- **Notes Pages** will print one slide per page and have room for your presentation notes (if you type them in).
- You can print a text outline of your slides with the **Outline** option.
- **Handouts** can be printed with one, two, three, four, six or nine slides per page. When printing handouts with multiple slides per page, you also have the option to print the pages horizontally or vertically.

5.17 Exiting Power Point

There are several ways to close your file and exit PowerPoint. From the File Button, click Close, if you have not saved your presentation, PowerPoint will prompt you to save. Click Yes to save your presentation and your changes, click No to discard your changes and close the file.

To close the presentation and exit the program, choose Exit or use the X in the upper right corner of the PowerPoint window. You'll be prompted to save the presentation if any changes have not been saved.

Chapter - 6

MS Word

6.1 Introduction to MS word

One of the most widely used program of Microsoft office suite, MS word is a word processor developed by Microsoft. It is used to make professional quality documents, letters, reports, etc. MS word is a word processor developed by Microsoft. It has advanced features which allow you to format and edit your files and documents in the best possible way.

Follow these simple steps to open MS word on your personal Computer:

Start => All programs =>MS OFFICE =>MS word

Some basic information regarding it creation and development has been given: -

- Charles Simonyi, aa developer and Richard Brodie a software engineer where the two creator of the MS word.
- This program was initially named “multi-tool word”. Later was renamed as MS word.
- It was introduced in 1983.
- Word for windows is available standalone or as a part of MS office suite.
- MS word for MAC was introduced by Microsoft as word 1.0 in 1985.
- The extension for any word file is “.doc”.

6.2 What are the uses of MS word?

MS word enables users to do write-up’s, create documents, resume, contracts, tenders, etc. This is most commonly used programs under the office suite.

6.3 How to create an MS word document?

To create an MS word document follow the step mentioned above to open Microsoft word. Then once the program is open click on “File” followed by “New”. This opens a new document where something new can be created.

Since it is used by people of all age groups, in school, in college and for official purposes having proper knowledge of Microsoft word is a must. The preview of the MS doc file once it opened is given below:

6.4 Features of MS word

Now let us read more about the features and components of an MS word doc file in detail.

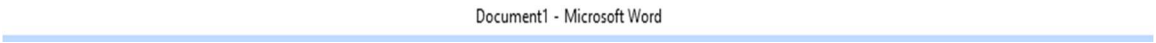
1. **The Microsoft office button:**

In the upper left corner of the word window is the Microsoft office button. A menu appears you can use the menu to create a new file, open an existing file, save a file and perform many other tasks.

2. **The Quick access toolbar:**

Next to the Microsoft office button is the quick access toolbar. The quick access toolbar provides you with access to commands you frequently use. By default save, undo and redo appear on the quick access toolbar. You can use same to save your file, undo to rollback an action you taken and redo to reapply an action you have rolled back.

3. **The tittle bar:**



Next is tittle bar. The tittle bar displays the tittle of the document which you are currently working. Word names the 1Stnew document you open Document 1.

4. **The Ribbon:**

The ribbon is located near the top of the source below the quick access toolbar. At the top of the ribbon there are several tabs. You can minimize the ribbon by selecting the option minimize the Ribbon in Customize quick access toolbar.

5. **The Ruler:**

The ruler is found below the ribbon you can use the ruler to change the format of your document quickly. If your ruler is not visible, flow the steps:

1. Click the view tab to choose it.
2. Click the check box next to ruler in the show/hide group. The ruler appears below the Ribbon.

6. **The text area:**

Just below the ruler is a large area called the text area. You can type your documents in the text area. The blinking vertical line in the upper left corner of the text area is the cursor.

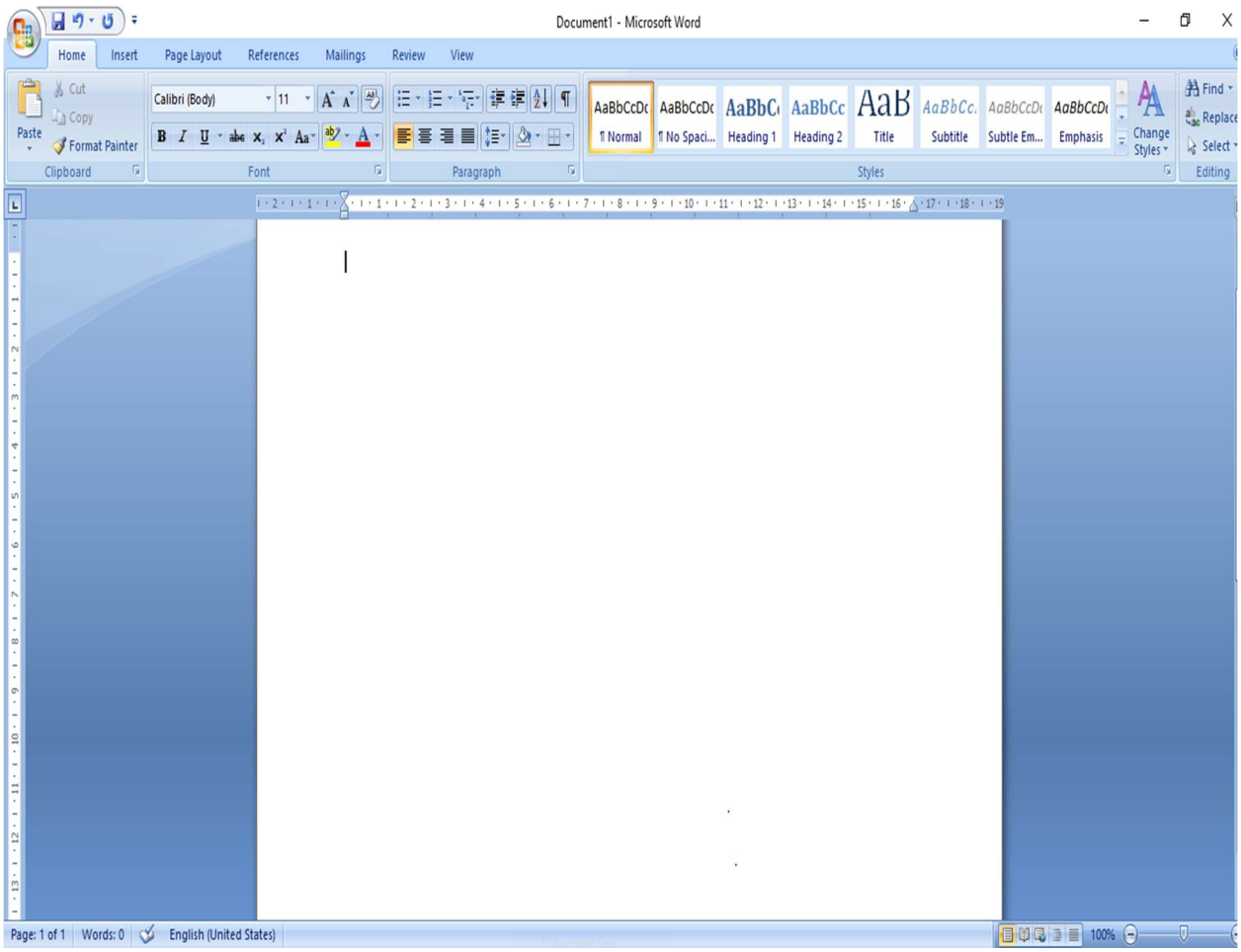
7. **The status bar:**

The status bar appears at the very bottom of your window and provides such information as the current page and the number of words in your document.

If you type = rand() in your word document and then press enter, word creates three paragraphs. You can use three paragraphs to practice what you learn. You can create paragraphs as per your requirement. If you want two paras, of 6 lines then you have to type =rand(2,6). You can select data by using the arrow keys or by clicking and dragging. When using the arrow keys, use the up arrow to move up, use the down arrow to move down, use the left arrow to move left and use the right arrow to move right. When using the mouse, press the left mouse button and then drag in the direction you want to move.

6.5 Home

This has five group options like clipboard group, font, paragraph, styles and editing. It helps you to change document setting like font size, adding bullets, adjusting styles and many other common features like font colour , set text to be bold or underlined , add or remove highlighting color around text , increase or decrease line and paragraph spacing , add or remove border around text and tables, add or modify heading types , find or replace text.



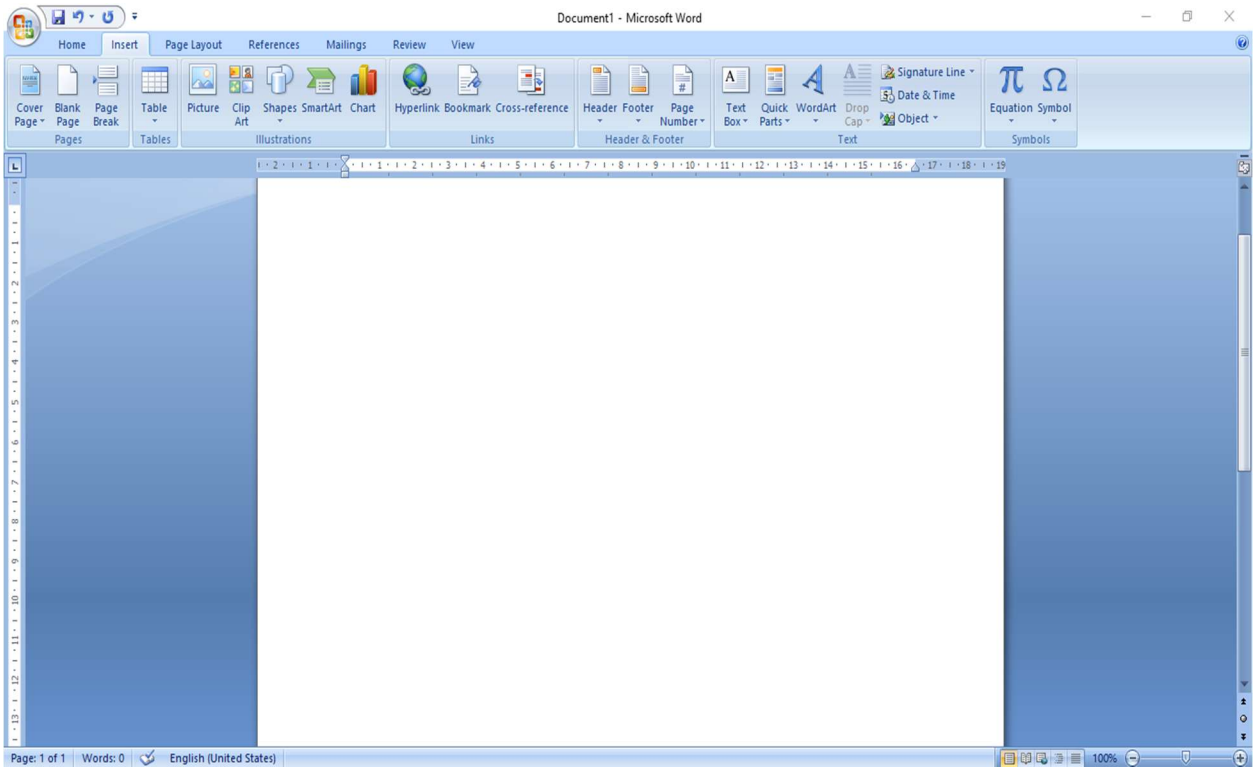
You can also press alt + h and then press 1 to bold the text in the selected cell.

6.6 Insert

Insert tab is used to insert different features such as tables, pictures, clip out, shapes, charts, page Number, word art, headers and footers into a document.

6.6.1 Pages

1. **Cover page: -** This button can be used to insert a pre-formatted cover page for a document, this information that is to appear on the page is filled in after the page is created.
2. **Blank page: -** To insert a new blank page for a document at the cursor position, click this button.
3. **Page Break: -** Click this button to and a page at the current cursor position and start a new page.



6.6.2 Tables

This button is used to insert a table in the documents.

6.6.3 Illustrations

1. **Picture:-**To insert a picture from a file on the computer into the document, click this button. The Insert picture dialog box will appear. This dialog box is used to select the picture that is used to be inserted into the document.
2. **Online Picture: -** Click this button to find and insert pictures from the Bing image search site. It is also possible to tag into Microsoft account to insert picture.
3. **Shapes: -** This button is used to insert readymade shapes such as circles square, arrows and triangle into a documents. When the button is clicked a gallery of different shapes will appear. To insert a shape, click the desired shape and draw the shape in the document.
4. **Smart Art: -** To insert a smart art graphics into the document, click this button. Smart art includes Venn diagrams and horizontal charts

5. **Chart: -** Use this feature to insert a bar area, line chart. When this button is clicked the insert chart dialogue box will display. In this dialogue box it is possible to specify the type of chart
6. **Screenshot: -** This feature can be used to insert a picture of any window that is available on the desktop. When this buttons clicked, a gallery of available window will display. Click any of the window icons. An image of that window will appear in the word document.

6.6.4 Add-ins group

- **My Add-ins: -** Use this features to insert an app into a document and use the web to enhance the work. Apps need to be downloaded from the office store before they can be inserted into the document.
- **Wikipedia: -** This feature is used to access Wikipedia content from office. Using this feature we simplify the process of reference text and images.

6.6.5 Media

- **Online videos: -** This feature is used to insert videos from a variety of sources. When the button is clicked, three options are available: Bing video search, YouTube, and from a video embedded code.

6.6.6 Links

- **Hyper link: -** To insert a link to items such as a web page, another document or an email address click this button.
- **Book Mark**: - A bookmark is used to assign a name to a specific area within a document.
- **Cross reference**: - This button is used to refer area in a document such as headings, figures and tables.

6.6.7 Comments

- **Comment**: - This feature can be used to insert a comment about a part of document.

6.6.8 Header and footer

- **Header: -** To insert text that appears at the top of each page of the document. Click this button. A gallery of header styles and formats will appear. Click this heading style that is to be applied.
- **Footer:-**This button is used to insert text that appears at the bottom of each page of the document
- **Page Number:-**Click this button to insert a page number into the document.

6.6.9 Text

- **Text Box:-**Text boxes are used to highlight text within a document.
- **Quick Parts:-**Click this button, to insert per-formatted text, auto-text, document properties, and fields into document.
- **Word Art: -** To insert decorative text into the document, click this button.
- **Drop Cap: -** Drop cap are used to create a large capital letter at the beginning of paragraph.
- **Add a signature line:-**To insert a digital signature line into a document that indicates who must sign the document.
- **Date & Time:** To insert the date and time as a text in document this button is used.
- **Object:**-To insert an object such as an Excel Worksheet or an Excel chart into the document.

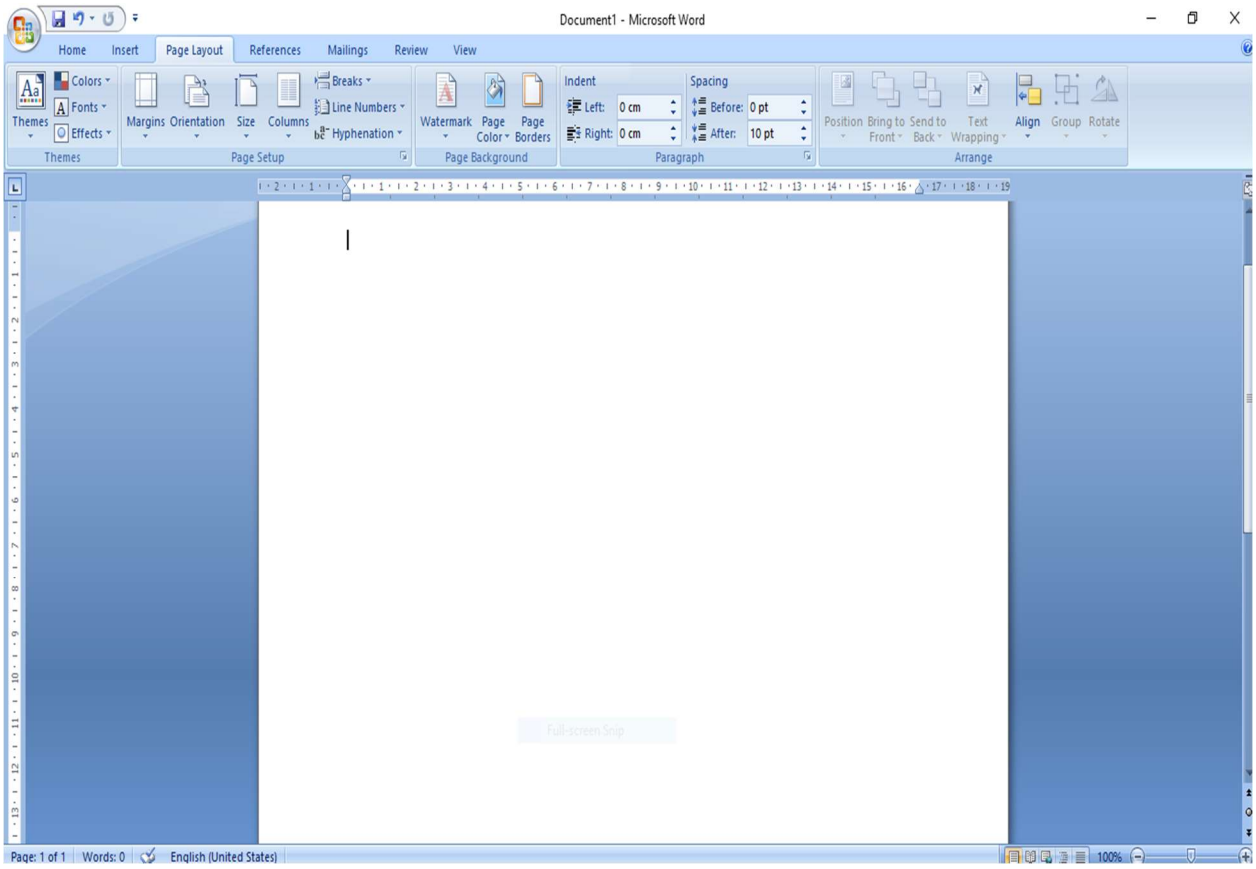
6.6.10 Symbol

- **Equation:-**This button is used to insert a mathematical equation into a document.
- **Symbol:-**To insert a symbol such as a copyright or trademark into the document.

6.7 Design

The template or the design in which your document to be created can be selected under the design tab. Choosing an appropriate tab will enhance the appearance of your document. This tab lets your work with a documents overall design, from choosing a pre designed template or theme to customizing colours, fonts, paragraph, spacing and more.

6.8 Page layout



- Page layout is the term used to describe how each page of your document will appear when it is printed.
- Page layout tab holds all the options that allow you to arrange your document pages just the way you want them.

6.8.1 Document themes

You can apply theme to the page. To make the change permanent, click the theme you want to see in the theme group.

6.8.2 Line number

In page setup group, there are many options such as margin button, orientation, size, columns, breaks, line numbers and button.

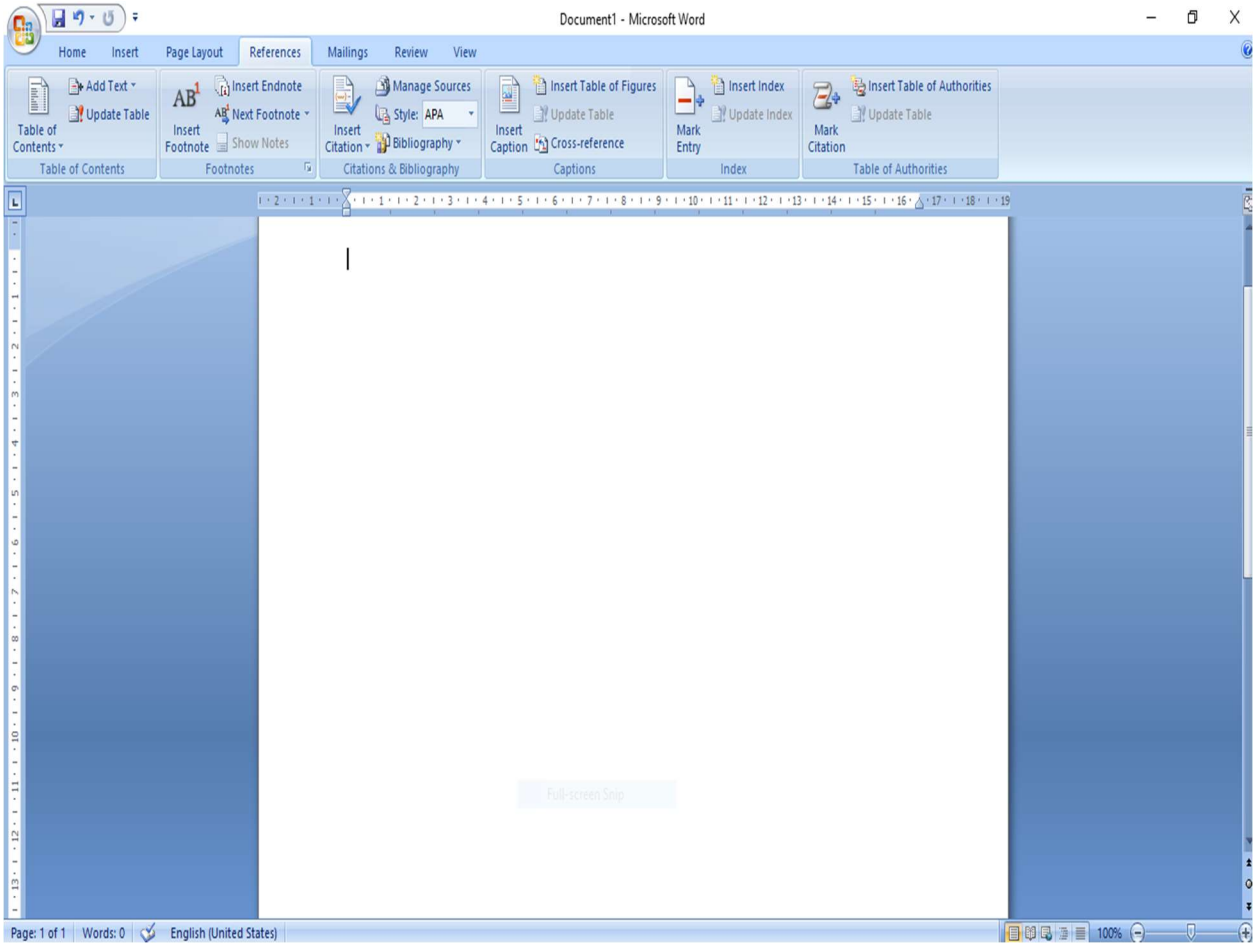
6.8.3 Watermark

After clicking the watermark button in page background group, gallery opens with a number of standard watermark. You can create your own watermark by clicking the custom watermark command on the page background group.

6.8.4 Adjusting line spacing

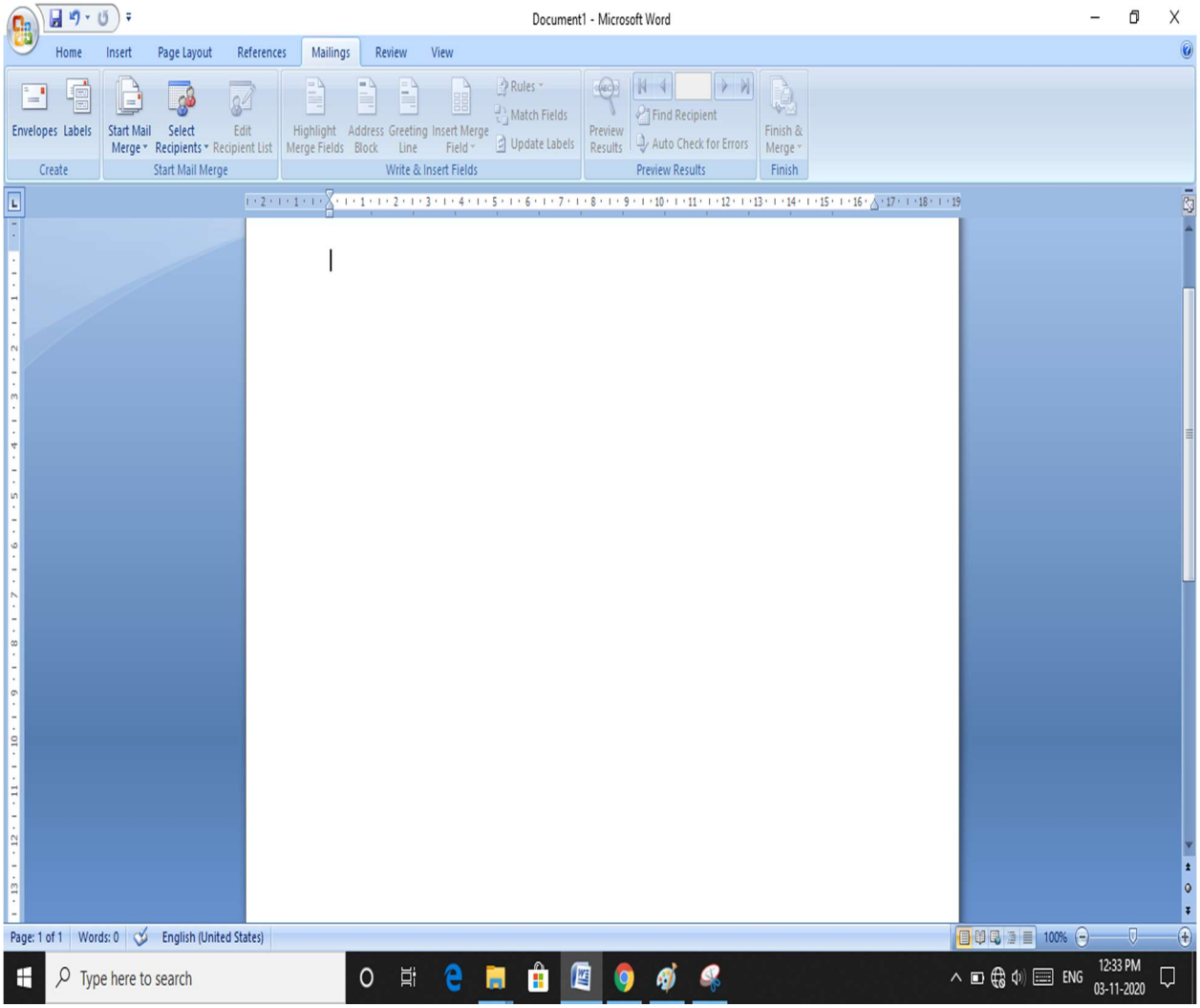
Use mouse pointer to select the text you want to adjust in terms of line spacing before and after each line in the paragraph group.

6.9 References



This tab is most useful for those who are creating a thesis or writing books or lengthy documents. Options like foot note, table of contents, captions, biography etc. can be performed under this tab.

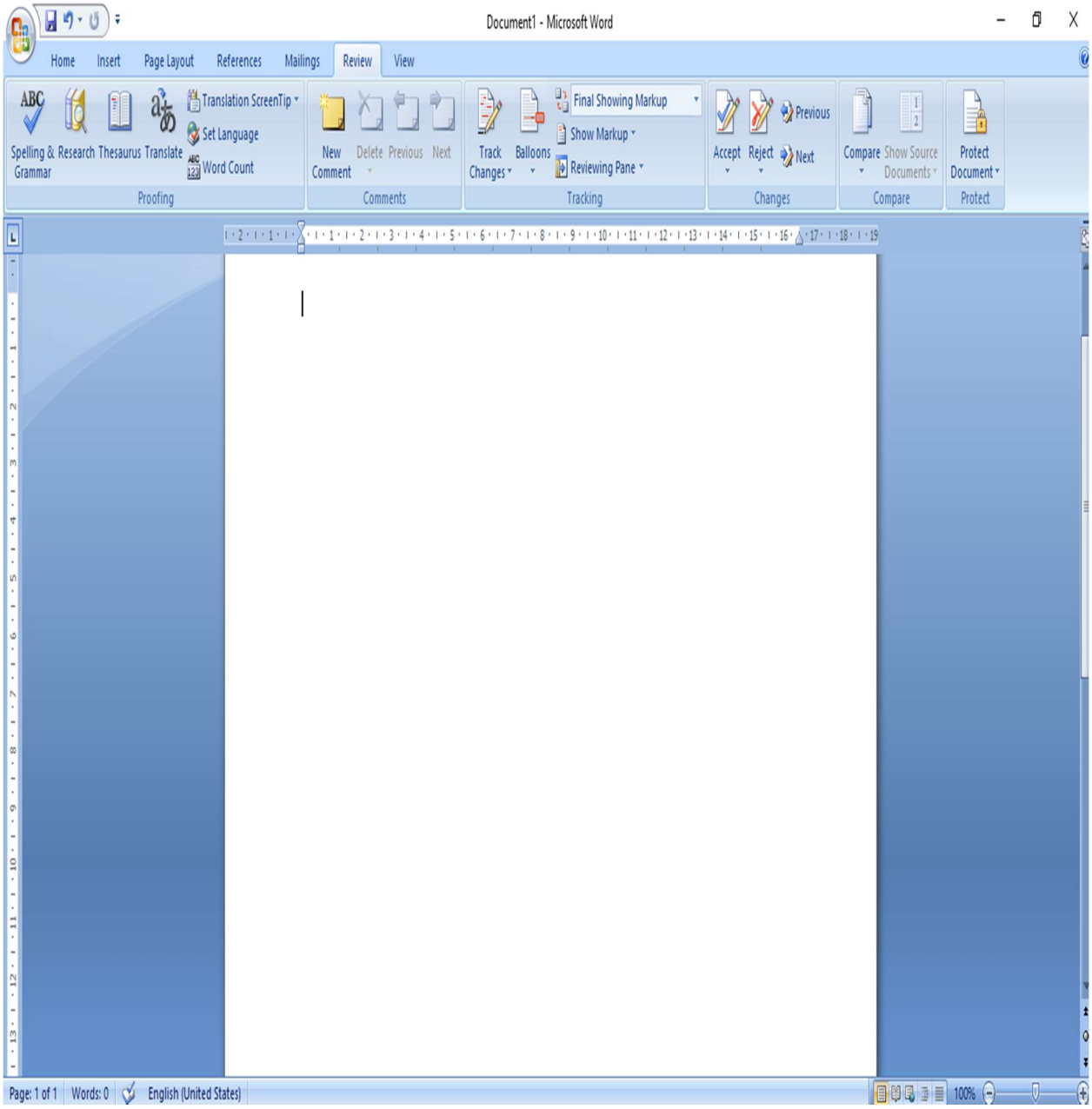
6.10 Mailings



Under the mailing tabs, each group is used to perform different steps in the mail merge process. This tab include envelopes and labels in the create group. Start mail merge, select recipient and edit receipt list in the start mail merge group.

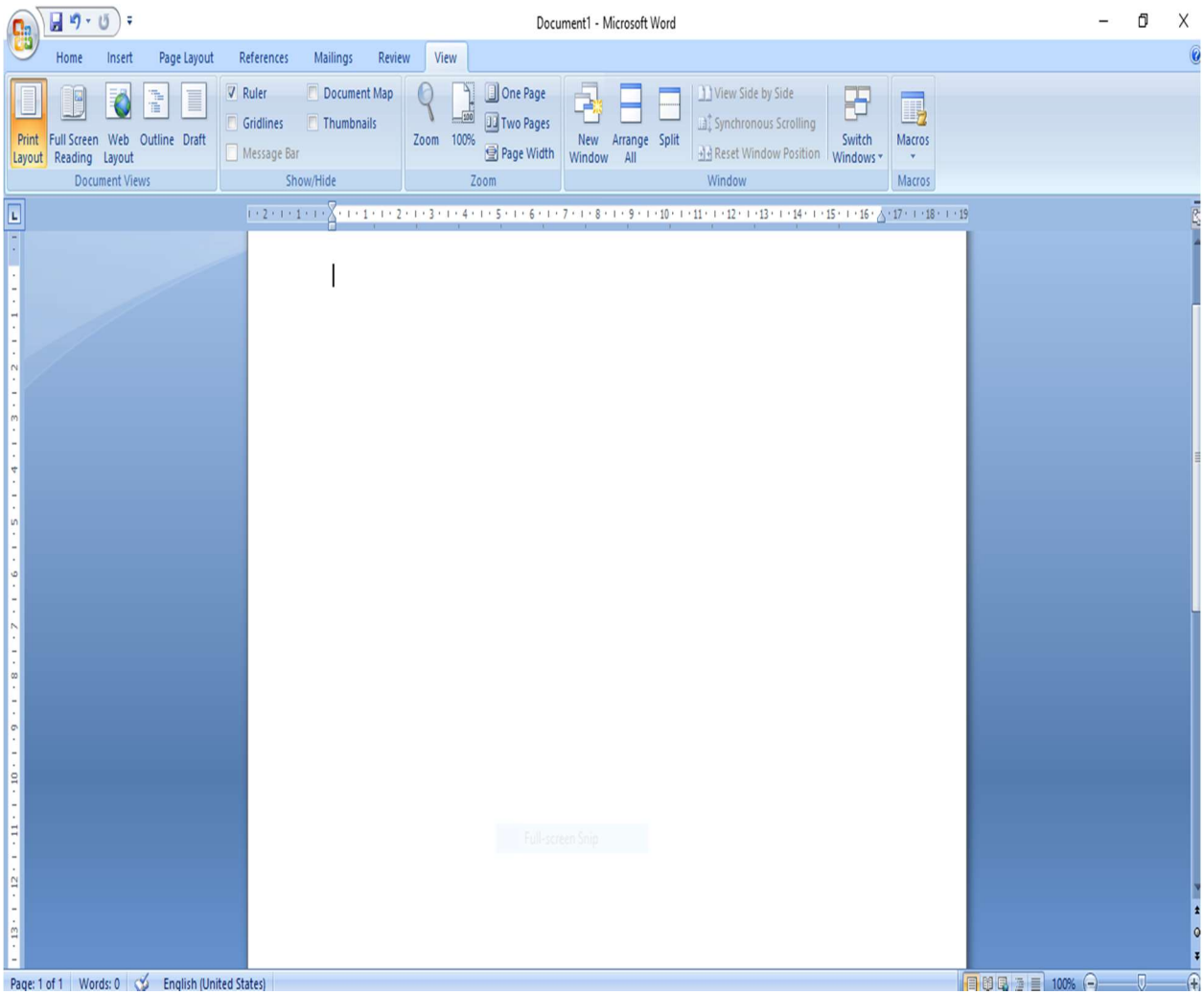
6.11 Review

Spell check, grammar, word count, language, translation, comments etc., can be tracked under the review tab. This acts as an advantage for those who get their documents reviewed on MS word. Smart look up in insight group allows you to learn more about selected text by seeing definition, image and other results from various online sources.



6.12 View

View tab enables you to switch between normal or master page and single page or two page spread views. This tab also gives control over guides, rulers and other layouts tools, zooming the size of your views of the documents. The ruler is used to tabs and margins and to determine the length of the document. To read the document in full screen reading mode, click read mode to see how the document will look when it is printed, click print layout.


Document1 - Microsoft Word
Home
Insert
Page Layout
References
Mailings
Review
View
Print Layout
Full Screen Reading
Web Layout
Outline
Draft
Document Views
Ruler
Gridlines
Message Bar
Document Map
Thumbnails
Show/Hide
Zoom
100%
One Page
Two Pages
Page Width
Zoom
New Window
Arrange All
Split
View Side by Side
Synchronous Scrolling
Reset Window Position
Switch Windows
Window
Macros
Macros
Page: 1 of 1
Words: 0
English (United States)
100%

Chapter - 7

Microsoft Excel Sheet

7.1 Getting Started

Microsoft Excel is one of the most popular spreadsheet applications that helps you manage data, create visually persuasive charts, and thought-provoking graphs. Excel is supported by both Mac and PC platforms. Microsoft Excel can also be used to balance a checkbook, create an expense report, build formulas, and edit them.

7.2 Creating a New Document

Opening Microsoft Excel

To begin Microsoft Excel, Go to **Applications > Microsoft Excel** (Figure 7.1).When opened a Dialogue box on the screen, showing you a few templates and blank excel sheets (Figure 7.2) if this does not happen click **File > New Workbook**.

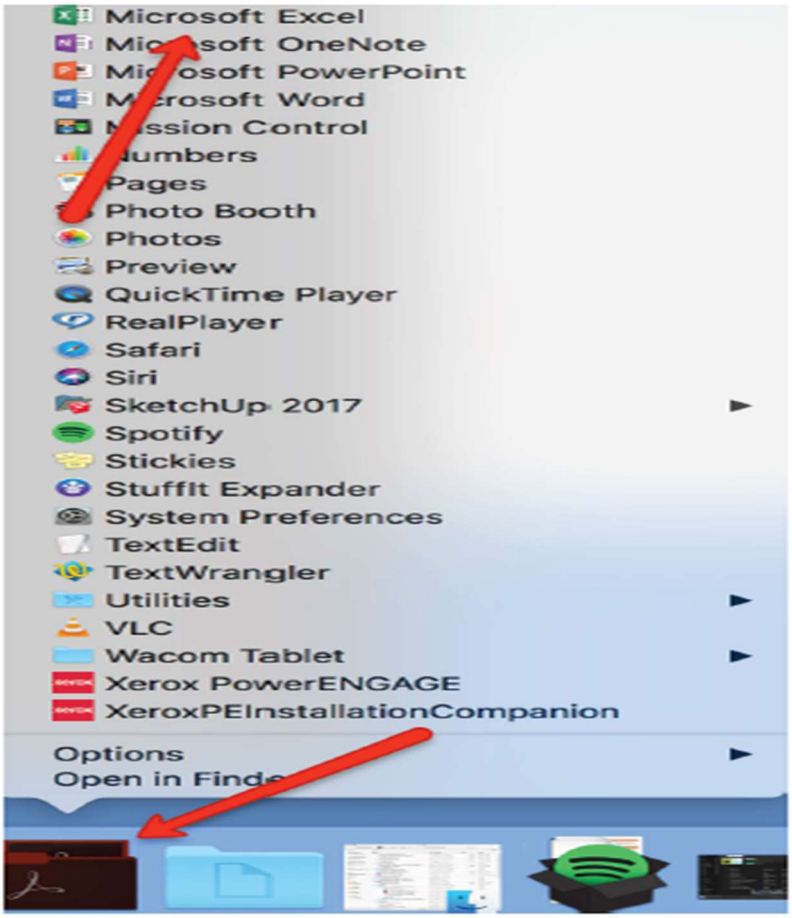


Figure 7.1: Navigate to Microsoft Excel

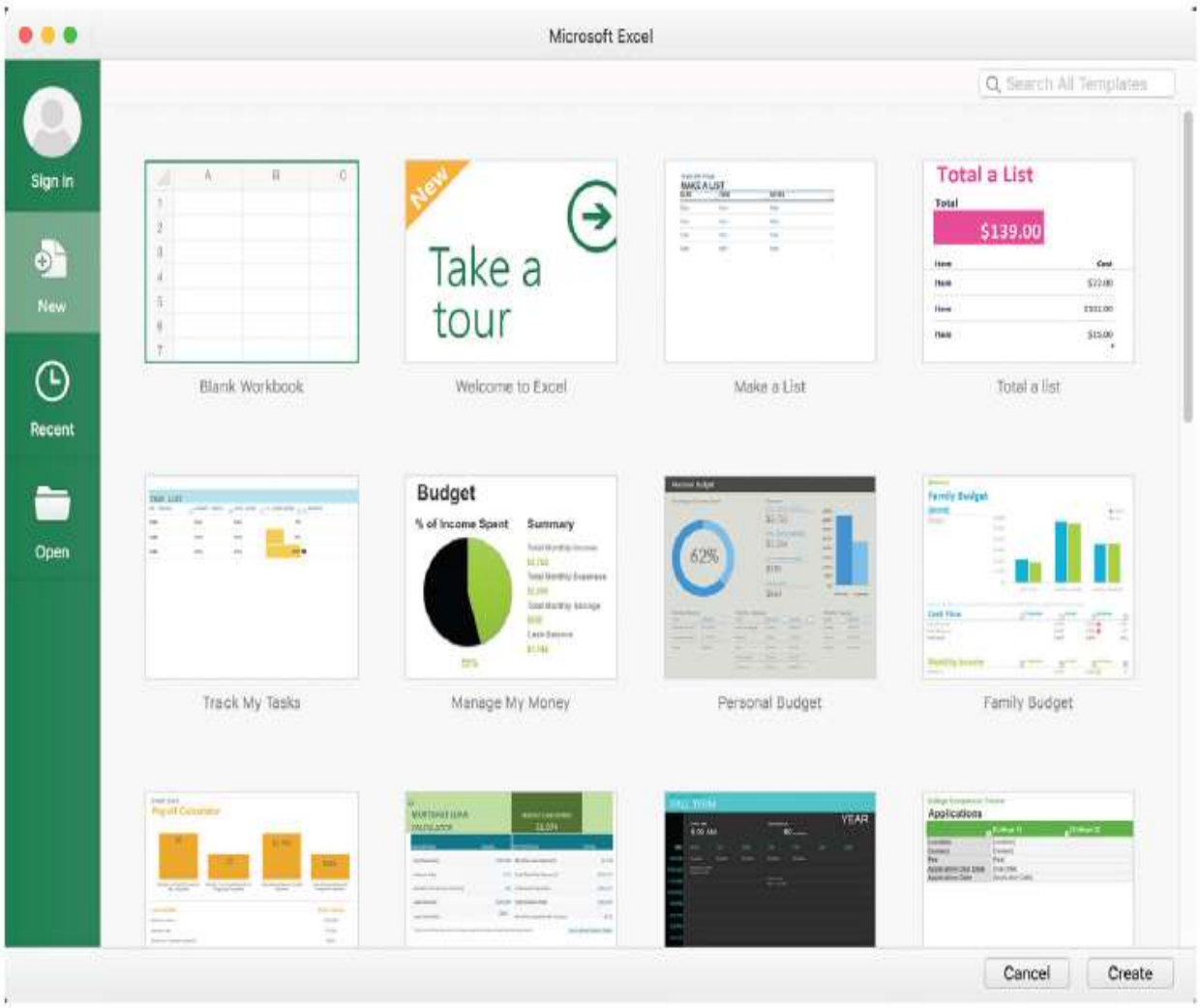


Figure 7.2: Opening a new workbook

7.3 Saving Your Document

Computers crash and documents are lost all the time, so it is best to save often.

Saving Initially

Before you begin you should save your document. To do this, go to **File > Save As**. Microsoft Excel will open a dialog box (Figure 7.3) where you can specify the new file's name, location of where you want it saved, and format of the document. Once you have specified a name, place, and format for your new file, press the **Save** button.

Note: Specifying your file format will allow you to open your document on a PC as well as a Mac. To do this you use the drop down menu next to the Format option. Also, when you are specifying a file extension (i.e. .doc) make sure you know what you need to use.

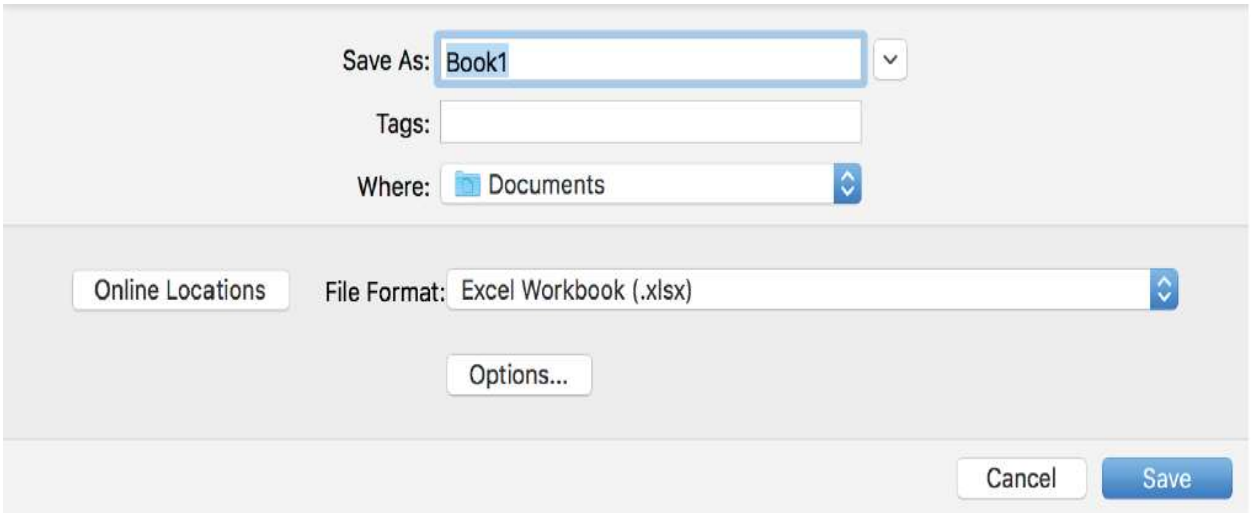


Figure 7.3: Saving dialog box

Saving Later

After you have initially saved your blank document under a new name, you can begin your project. However, you will still want to periodically save your work as insurance against a computer freeze or a power outage. To save, click **File > Save** or **Command S** for a shortcut on a Mac.

7.4 Ribbon

Microsoft Excel uses a ribbon toolbar to allow you to modify your document. Both Mac and Pc have the same ribbon toolbar. If you do not see these toolbars, or to open up other toolbars, go to **View > Ribbon** and place a checkmark by the toolbar you wish to open. Excel will also allow you to customize your toolbar by going to **View > Customize Views**.

Figure7.4: Grey toolbar

On Mac, there is grey toolbar (figure7.4) located at the top of the green ribbon that contains any extra functions that is not in the main Excel ribbon. On Pc, excel has all of its functions in the main ribbon.

The Ribbon: (Figure7.5).This toolbar contains tabs of Home, Insert, Page Layout, Formulas, Data, Review, and View. Each tab serves a different purpose in customizing your document or having access to specific tools to help aid in whatever you are working on.

Figure7.5: Standard toolbar.

The Formatting Palette: (Figure7.6) is on the Home tab of the Ribbon. This palette contains icons for common formatting actions, such as Font Style, Font Size, Bold, Italic, Underline, Alignment, Borders, Shading, Orientation, Gridlines, and Margins.

Figure7.6: Formatting Palette.

7.5 Formatting

7.5.1 Formatting the Spreadsheet

The default page view for **Microsoft Excel** spreadsheets display all gridlines and open up in portrait orientation. To change the gridlines look at the fifth tab on the Formatting Palette, under Sheet uncheck the view box. This will eliminate any gridlines from the spreadsheet. To change the page orientation look at the fifth tab on the **Formatting Palette**, under **Orientation** and check **Landscape** (Figure7.7).

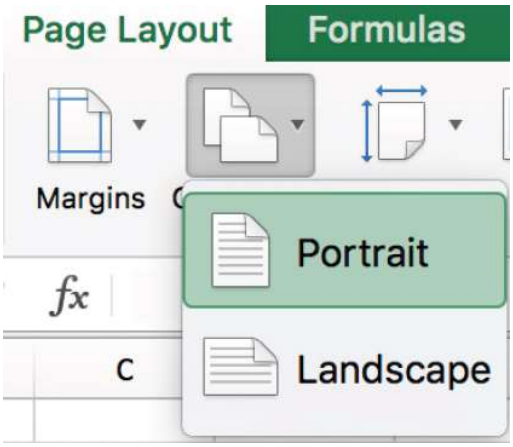


Figure7.7: Changing Page Orientation

7.5.2 Working with Cells

Cells are an important part of any project being used in **Microsoft Excel**. Cells hold all of the data that is being used to create the spreadsheet or workbook. To enter data into a cell you simply click once inside of the desired cell, a green border will appear around the cell (Figure7.8). This border indicates that it is a selected cell. You may then begin typing in the data for that cell.

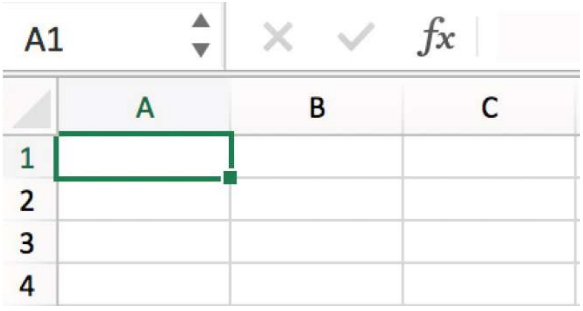


Figure7.8: Entering Data.

7.5.3 Changing an Entry within a Cell

You may change an entry within a cell two different ways:

- Click the cell one time and begin typing. The new information will replace any information that was previously entered.
- Double click the cell and a cursor will appear inside. This allows you to edit certain pieces of information within the cells instead of replacing all of the data.

7.5.4 Cut, Copy, and Paste

You can use the **Cut, Copy** and **Paste** features of Excel to change the data within your spreadsheet, to move data from other spreadsheets into new spreadsheets, and to save yourself the time of re-entering information in a spreadsheet. Cut will actually remove the selection from the original location and allow it to be placed somewhere else. Copy allows you to leave the original selection where it is and insert a copy elsewhere. Paste is used to insert data that has been cut or copied.

To Cut or Copy: Highlight the data or text by selecting the cells that they are held within. Go to **Edit > Copy (Command-X) or Edit > Cut (Command-C)**.

Click the location where the information should be placed. Go to **Edit > Paste (Command-V)**.

7.5.5 Formatting Cells

There are various different options that can be changed to format the spreadsheets cells differently. When changing the format within cells you must select the cells that you wish to format. To get to the **Format Cells** dialog box select the cells you wish to change then go to **Format > Cells**. A box will appear on the screen with six different tab options (Figure7.9). Explanations of the basic options in the format dialog box are bulleted below.

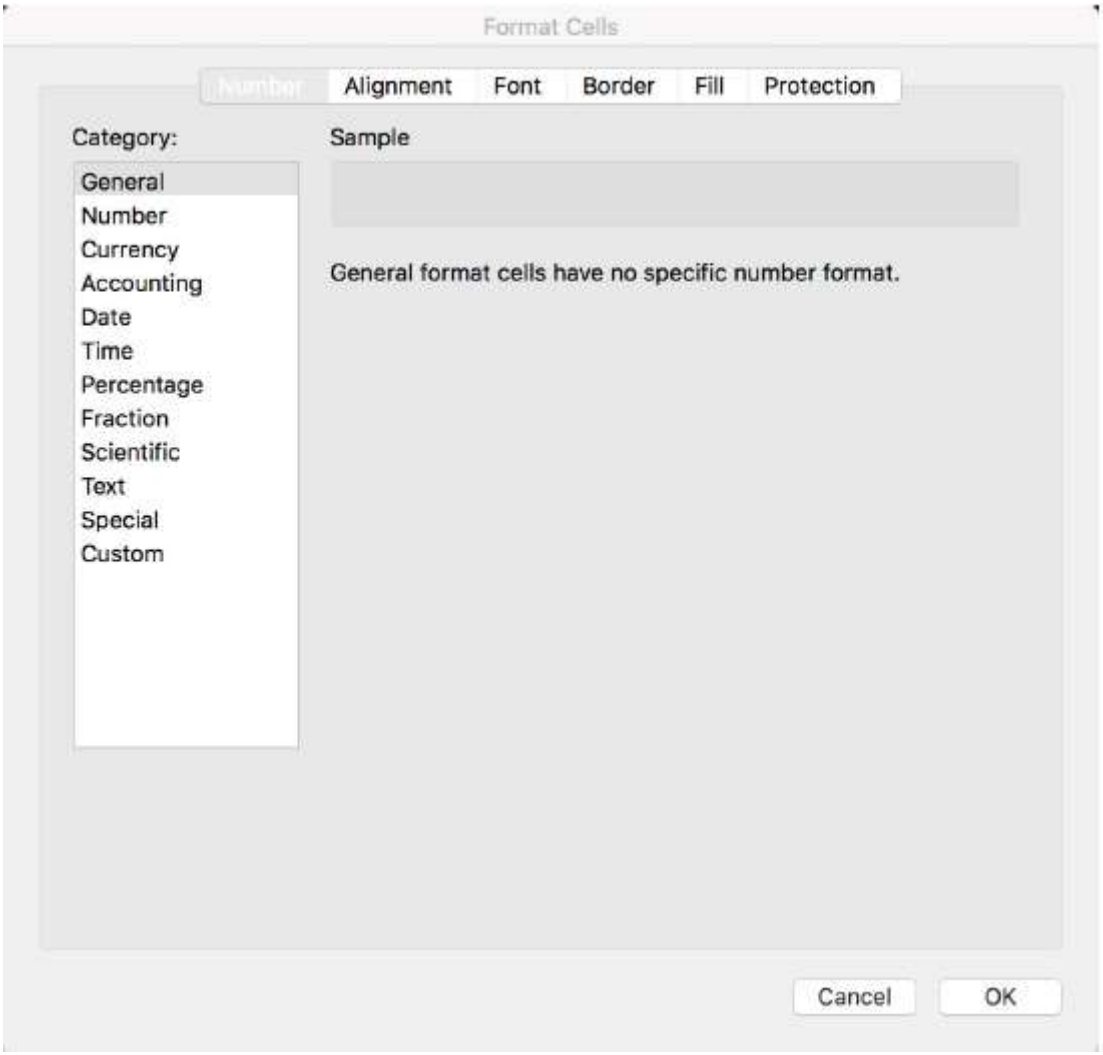


Figure7.9: Formatting Cells Window

Number: Allows you to change the measurement in which your data is used. (If your data is concerned with money the number that you would use is currency).

Alignment: This allows you to change the horizontal and vertical alignment of your text within each cell. You can also change the orientation of the text within the cells and the control of the text within the cells as well.

Font: Gives the option to change the size, style, colour, and effects.

Border: Gives the option to change the design of the border around or through the cells.

7.5.6 Formatting Rows and Columns

When formatting rows and columns you can change the height, choose for your information to auto fit to the cells, hide information within a row or column, un-hide the information. To format a row or column go to **Format > Row (or Column)**, or **Home** tab then **format** button for PC, then choose which option you are going to use (Figure7.10). The cell or cells that are going to be formatted need to be selected before doing this.

Figure7.10: Format Column

7.5.7 Adding Rows and Columns

When adding a row or column you are inserting a blank row or column next to your already entered data. Before you can add a **Row** you are going to have to select the row that your wish for your new row to be placed in its place. (Rows are on the left hand side of the spreadsheet) once the row is selected it is going to highlight the entire row that you chose. To insert the row you have to go to **Insert > Row** (Figure7.11).The row will automatically be placed on the spreadsheet and any data that was selected in the original row will be moved down below the new row. Another way is using the **Insert** in the **Formatting Palette**.

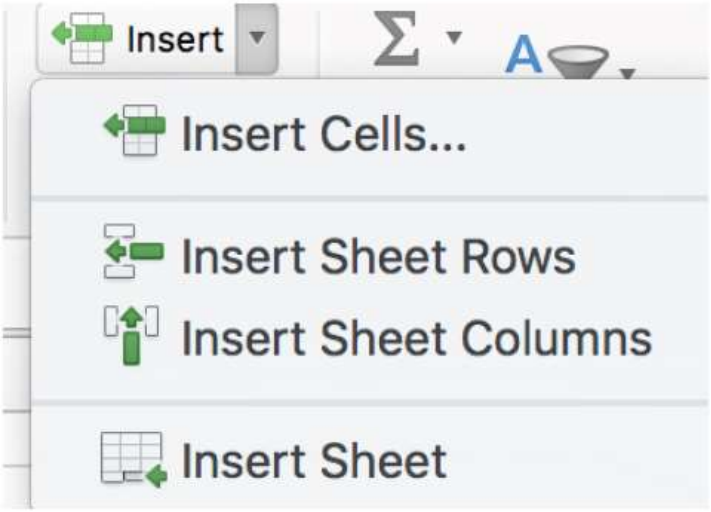


Figure7.11: Insert Column

Before you can add a **Column** you are going to have to select a column on the spreadsheet that is located in the area that you want to enter the new column. (Columns are on the top part of the spreadsheet.) Once the column is selected it is going to highlight the entire row that you chose. To insert a column you have to go to **Insert > Column** (Figure7.11).The column will automatically be place on the spreadsheet and any data to the right of the new column will be moved more to the right.

7.5.8 Working with Charts

Charts are an important part to being able to create a visual for spreadsheet data. In order to create a chart within Excel the data that is going to be used for it needs to be entered already into the spreadsheet document. Once the data is entered, the cells that are going to be used for the chart need to be highlighted so that the software knows what to include. Next, click on the **Charts Tab**

that is located right above the spreadsheet (Figure7.12). Once it is clicked the tab will highlight green and all of the various charts within **Excel** will appear.

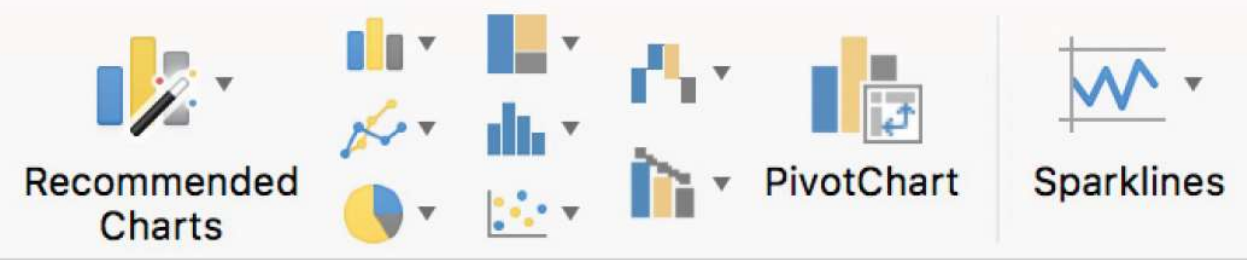


Figure7.12: Charts Column

You may choose the chart that is desired by clicking the icons that are displayed. Once the icon is chosen the chart will appear as a small graphic within the spreadsheet you are working on. To move the chart to a page of its own select the border of the chart and **Ctrl > Click**. This will bring up a drop down menu, navigate to the option that says Move Chart. This will bring up a dialog box that says **Chart Location**.

From here you will need to select the circle next to **As A New Sheet** and name the sheet that will hold your chart. The chart will pop up larger in a separate sheet but in the same workbook as your entered data.

7.5.9 Chart Design

There are various different features that you can change to make your chart more appealing. To be able to make these changes you will need to have the chart selected or view the chart page that is within your workbook. Once you have done that the **Formatting Palette** will change to show features that were not there before (Figure7.13).These features include:

Figure7.13: Formatting Palette

Chart Options:

1 **Titles**: Here you can change the Chart Title, Vertical Axis Title, and Horizontal Axis Title by clicking the drop down menu and selecting which one you will change and entering the name into the empty box below.

2 **Axes**: You may change which axes are shown on the charts graph and which are not.

3 **Gridlines**: This feature allows you to change which gridlines (major and minor) are shown on the charts graph and which are not.

Chart Style:

Here you are able to change the colour of the bars that are within your chart.

Quick Styles and Effects:

Here you can add gradients, fill, drop shadows, and reflections to your chart depending on what is desired.

7.6 Inserting Smart Art Graphics

7.6.1 Graphics

Smart Art Graphics are pre-made graphics that can be inserted into a spreadsheet or workbook to display relationships, cycles, diagrams, pyramids, and lists. These graphics do not require or use pre-entered data from your spreadsheets. All information that is going to be entered into them will be entered by hand. To insert a Smart Art Graphic into your document you will need to click the Insert tab, then the Smart Art (and type of). Once clicked, the tab will appear on your top toolbar in a highlighted green and all of the different graphic options will appear (Figure7.14).

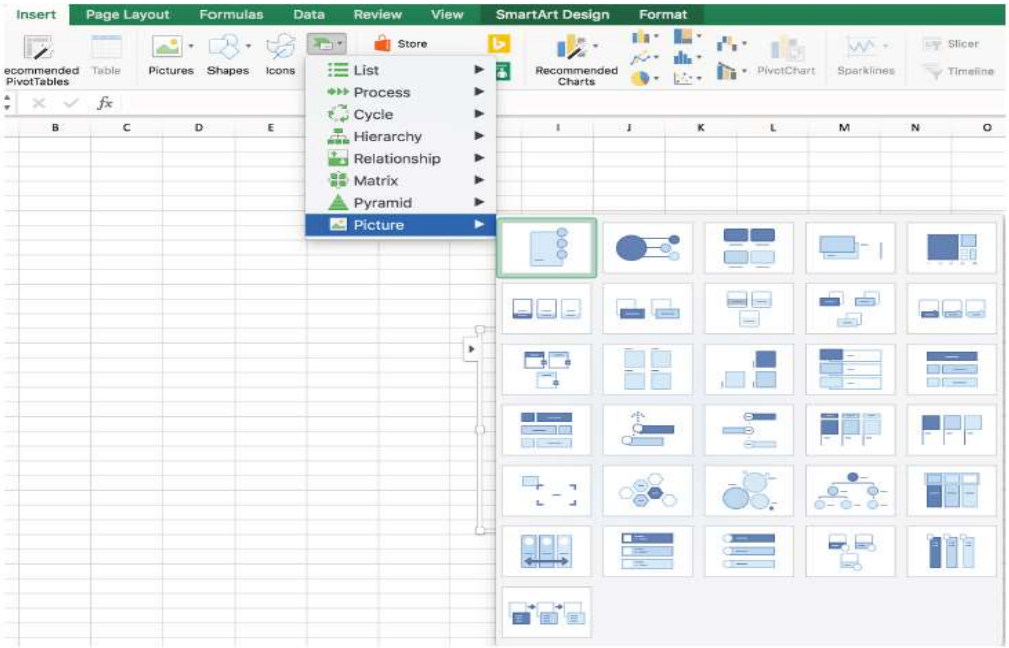


Figure7.14: Different graphic options

To be able to use a graphic you can click on the icon and it will appear on the spreadsheet you are currently working on. A small dialog box will also appear with the graphic that gives you an option to change the data that will show up inside of the graphic (Figure7.15)

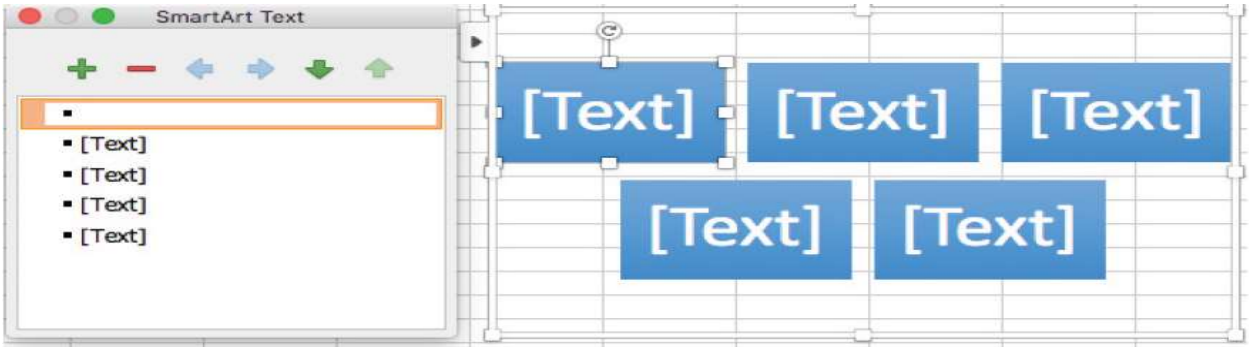


Figure7.15: Smart Art Text

If you do not enter data in this dialog box then the default text will remain in the graphic. If you accidentally close out the dialog box all you need to do is click the button on the left hand side of the graphic to bring it back up on the screen (Figure7.16).

Figure7.16

7.6.2 To insert Images:

Go to **Insert > Picture > Picture from File**, and then select the desired picture from the location that is it stored (Figure7.17).The picture will be inserted directly onto your document, where you can change the size of it as desired.

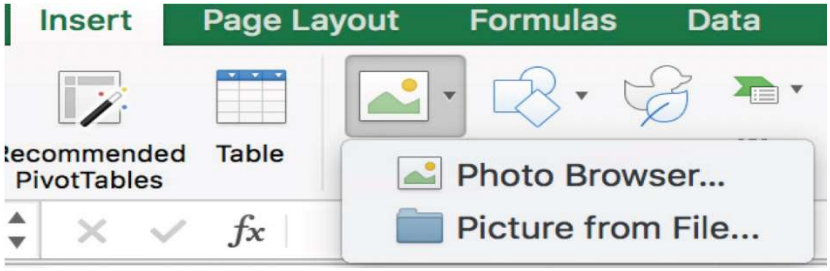


Figure7.17: Inserting Picture in the sheet

When creating a function in Excel you must first have the data that you wish to perform the function with selected.

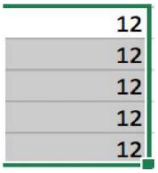


Figure7.18: Choosing calculation cell

- Select the cell that you wish for the calculation to be entered in.
- Once you have done this you will need to select icon located on the Formatting Palette.
- The Toolbar will change names to Formula Builder.
- A list of Most Recently Used formulas will appear. To choose one of the formulas simply double-click it from the list.
- This will display the calculation in two places on your screen. The first is on your spreadsheet in the cell that you selected. (Figure7.19)

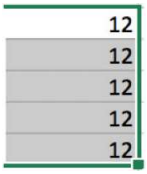


Figure7.19: First calculation display

It will also show up under the Most Recently Used Formulas list. (Figure7.20).

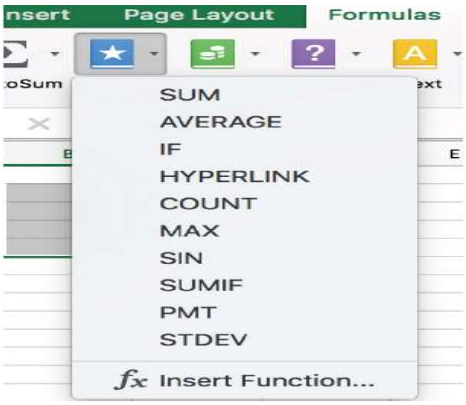


Figure7.20: Second calculation display

In this screen it lists the cells that are being calculated, the values within the cells, and the end result.

- To accept that calculation you can press Enter and the result will show up in the selected cell.

7.7 Printing

7.7.1 Printing

To print your document, go to **File > Print**, select your desired settings, and then click **Print**. It is also possible to print by using the **Print** icon on the Standard toolbar, however this does not bring up the **Print** dialogue box that allows you to change your printing options, so it is advisable to use the other method.

To be able to change the orientation of your page for printing you can click on the **Page Setup** button under the option to **Print** (Figure7.21).

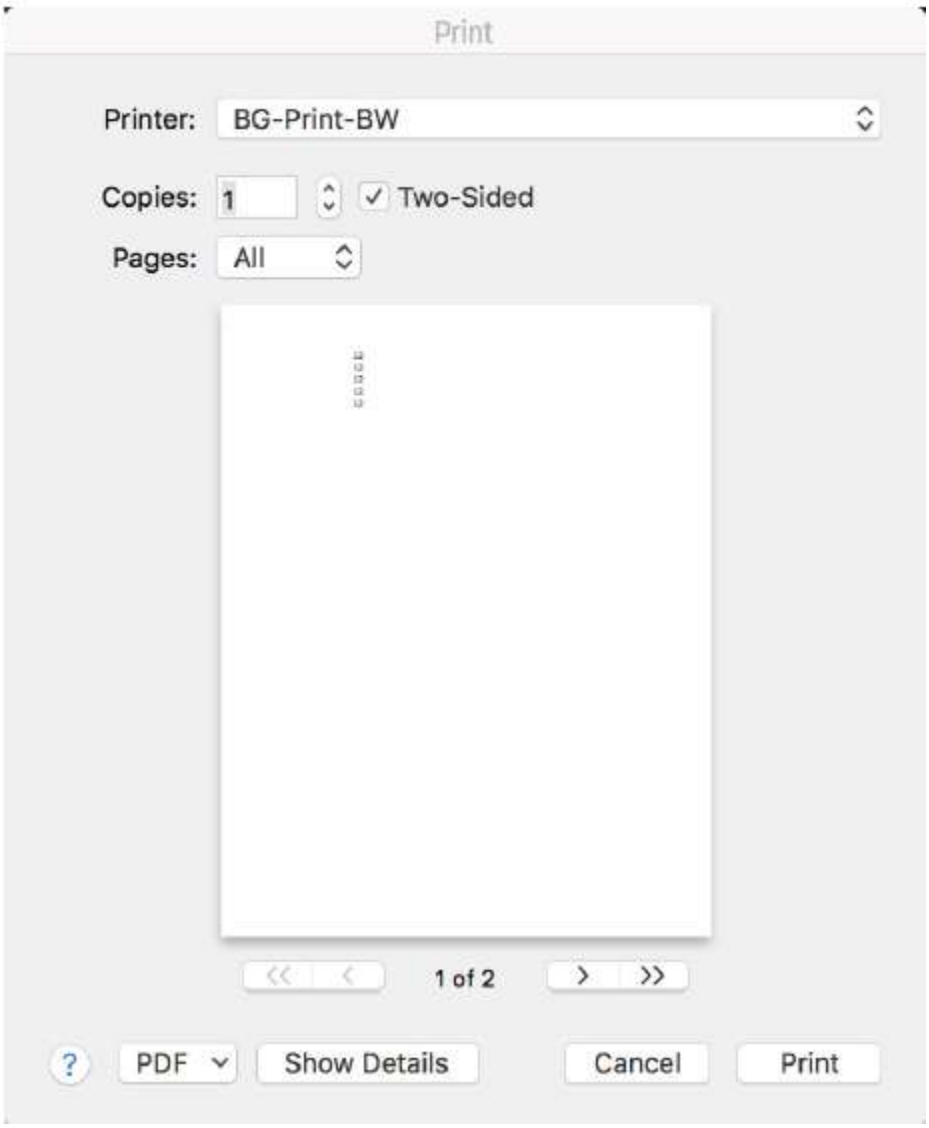


Figure7.21: Page Setup button and printing

7.8 Other Helpful Functions

7.8.1 Undo and Redo

In order to undo an action, go to **Edit > Undo**. To redo an action, go to **Edit > Redo**. It is important to note that not all actions are undoable, thus it is important to save before you make any major changes in your document so you can revert back to your saved document.

7.8.2 Quitting

Before you quit, it's a good idea to save your document one final time. Then, on a Mac, go to **Excel > Quit (Command-Q)**.This is better than just closing the window, as it insures your document quits correctly.

Chapter - 8

Visual Studio Code

8.1 What is visual studio code?

Visual studio code is a free source-code editor made by Microsoft for windows, Linux, macOS. It is a streamlined code editor with support for development operations like debugging, task running and version control. It aims to provide just the tools a developer needs for a quick code build debug cycle and leaves more complex workflows to fuller feature IDEs, such as visual studio IDE.

8.2 Features of visual studio code

1. It develops, Navigate, write, and fix your code fast. Debug, profile and diagnose with ease.
2. Windows, Develop apps and games to reach every device running Windows, Mobile Apps.
3. C++ Use C++ for speed, performance, and compatibility across a wide range of devices, Node.js.

8.3 Why is Visual Studio code so popular?

If you are a Web Developer, you probably use Visual Studio Code for coding your projects. ... Its popularity is due to the growth of the web development field in these years and the need of the developers of having a lightweight well-done editor, with few features but less complex than the others available on the market.

8.4 Overview of Visual Studio IDE Benefits

- Accurate Coding. With Visual Studio IDE, users are provided live coding assistance regardless of the programming language they are utilizing.
- Quick Debugging.
- Rigorous Testing.
- Team Collaboration.
- Customization Options.
- Visual Studio IDE Pricing Plans.

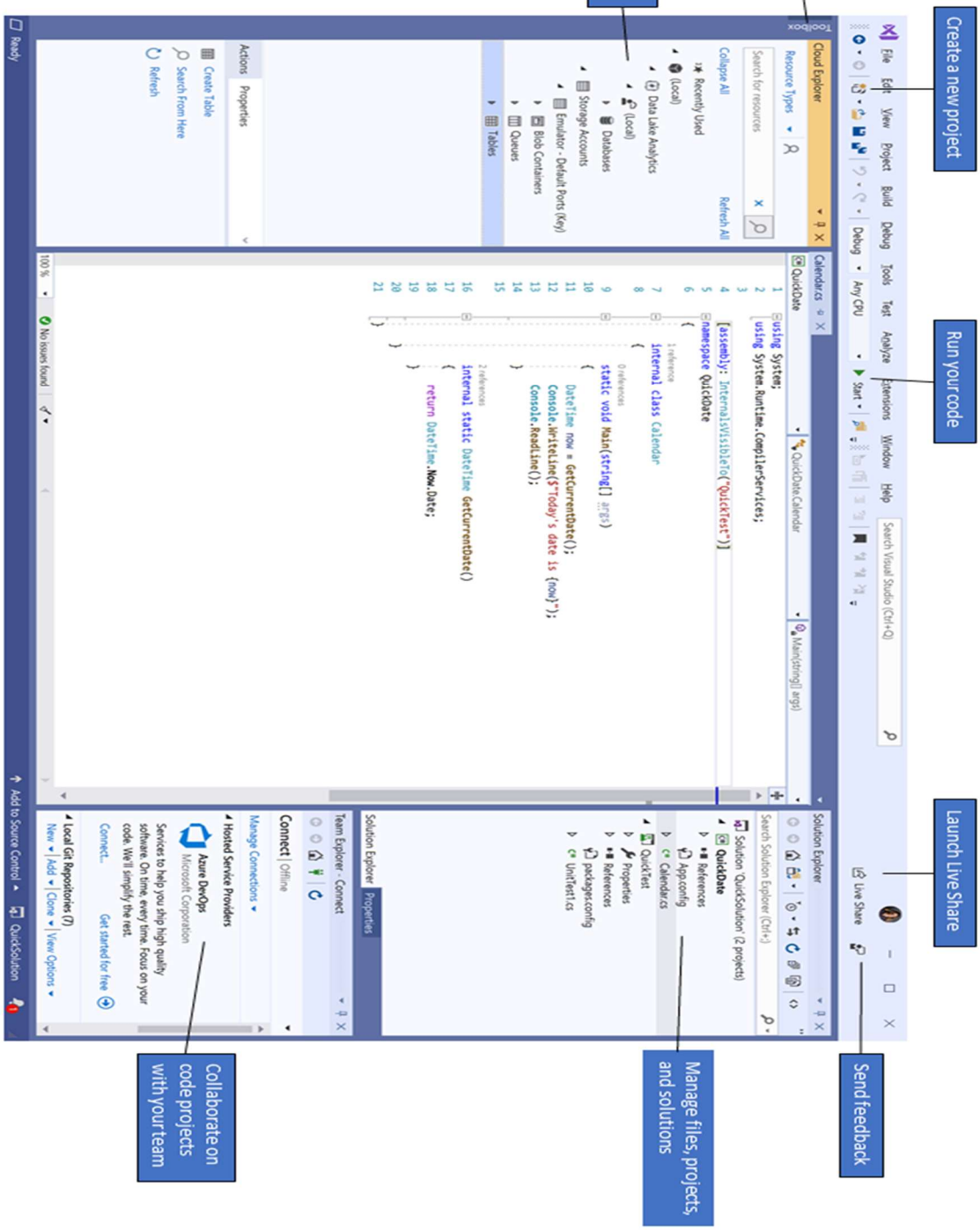


Figure8.1: The Visual Studio 2019 IDE

8.5 Why visual studio code?

For serious coding, you'll often benefit from tools with more code understanding than just blocks of text. Visual Studio Code includes built-in support for IntelliSense code completion, rich semantic code understanding and navigation, and code refactoring. And when the coding gets tough, the tough get debugging.

8.6 Visual Studio Code on Windows

Installation

1. Download the Visual Studio Code installer for Windows.
2. Once it is downloaded, run the installer (VSCodeUserSetup-{version}.exe). This will only take a minute.
3. By default, VS Code is installed under **C:\users\{username}\AppData\Local\Programs\Microsoft VS Code.**

8.7 How to run a folder in Visual Studio Code

Open any code

1. On the Visual Studio menu bar, choose File > Open > Folder, and then browse to the code location.
2. On the context (right-click) menu of a folder containing code, choose the Open in Visual Studio command.

8.8 How to write code in Visual Studio

1. Open Visual Studio.
2. On the start window, choose Create a new project.
3. On the Create a new project window, enter or type console in the search box. ...
4. In the Configure your new project window, type or enter WhatIsYourName in the Project name box.

8.9 How to open code or terminal

You can open the external terminal at any time from VS Code in the exact location of the file you are currently viewing by using the keyboard shortcut Ctrl/Cmd + Shift + C.

Chapter - 9

Cloud Storage

9.1 What is cloud Storage?

Cloud storage is a model of computer data storage in which the digital data is stored in logical pools, said to be on "the cloud". The physical storage spans multiple servers, and the physical environment is typically owned and managed by a hosting company.

9.2 Example of Cloud Storage

Dropbox is one of the oldest cloud storage services. It maintains all customer files in one location, thus enabling any device to access them anytime and from anywhere. It offers 2GB of free storage and paid plans of 1TB of storage for $8.25 per month and 2TB for $16.58. For $20 a month, Dropbox offers unlimited storage for businesses on a per-user basis.

Google Drive offers centralized storage for any type of file. It offers 15GB of free storage for three Google products: Photos, Gmail, and Drive. Paid plans include (a) $1.99 per month for 100GB of storage, (b) $10 per month for 1TB, and (c) a data-storage plan of $100 per month for 100TB. Google is upgrading the data service to a new product called Google One. It will offer storage as well as access to Google experts.

Box enables secure access, sharing, and management of content from anywhere. It offers 10GB of free storage that can be increased to 100GB for $10 a month. The unlimited storage business plan costs $15 a month for three to 10 users. `

Mega is a global cloud storage platform based in New Zealand. It offers 50GB of free storage. Paid accounts include (a) 200GB for $5 a month, (b) 1TB for $10 a month, (c) 2TB for $20 a month and (d) 8TB for $30 a month.

Microsoft One Drive offers standard cloud storage features such as accessing files from any device, offline access by syncing files to a device, and backup and disaster recovery. It offers 5GB of storage for free and 50GB for $1.99 per month. The 1TB and 5TB plans cost, respectively, $69.99 and $99.99 per year and come with Office 365 access.

Apple iCloud comes with every Apple device and offers 5GB of free storage. Paid plans start at $0.99 per month for 50GB of storage, $2.99 for 200GB, and $9.99 for 2TB.

Nextcloud is an open-source, self-hosted file sharing platform. This enables users to start their own file sharing service by setting up a private cloud environment. Nextcloud offers multiple support plans starting at €1900 per year for 50 users.

SpiderOak offers file sharing and collaboration as part of its cloud storage platform. Its cloud backup service maintains versions of all files, even deleted files. The service comes with a free 21-day trial. Businesses with a minimum of 500 users can sign up for the enterprise backup service.

IDrive is a cloud backup provider that works across multiple devices — computers, tablets, smartphones — to store files in one location. It offers a 5GB free plan and multiple paid plans for personal and business use, starting at $69.50 per year for 2TB of storage and $99.50 for 5TB.

pCloud offers centralized cloud storage. Its lifetime storage plans require a one-time payment: 500GB for a $175 one-time payment ($480 without a promotion) and 2TB for $350 ($980 without a promotion).

MediaFire stores photos, documents, videos, and other files in a single place to enable access from anywhere. MediaFire offers 10GB of free storage. Paid plans start at $7.50 per month for 1TB of storage. Business users can get up to 100TB for $80 per month.

Tresorit offers enhanced security for storing files in the cloud. Plans include 200GB of storage for $12.50 per month and 2000GB for $30. Business plans start at $25 per month for 1000GB.

Egnyte enables enterprise file storage and sharing. Its plan for up to three employees offers 1TB of storage for $10 per employee per month. Business plans for five to 25 employees start at $8 per employee per month for 5TB.

SugarSync enables automatic access and sharing of any kind of file. It offers (a) 100GB for $7.49 per month, (b) 250GB for $9.99, (c) and 500GB for $18.99. Business plans start at $55 per month for 1TB.

Storegate is a cloud storage service based in Europe. It offers a 100GB plan for $18.99 per month. The business plans include 500GB for $11.99 per user per month and 1000GB for over five users for $10.99 per user per month.

OpenDrive offers unlimited cloud storage, backup, and content management. The free plan includes 5GB of space. Business plans start at $5 per month for 500GB. OpenDrive's unlimited plan, at $9.95 per month, is the lowest price per gigabyte across all vendors on this list.

Jungle Disk offers secure backup and storage. Plans start at $8 per user per month depending on the security features. JungleDisk's questionnaire helps determine your security needs to find the right plan, with the right features.

Carbonite is an online backup service. It offers plans based on the number of computers that require backup. Prices range from $6 per month for one computer to $50 per month for multiple computers and servers.

FlipDrive offers centralized cloud storage for all types of files. Its free plan includes 10GB of storage. Paid plans include (a) 25GB of storage for $5 per month, (b) 100GB for $10, and (c) 250GB for $20.

FilesAnywhere is a cloud storage provider that offers a 100GB plan for $9.99 per month. Business plans start at $60 per month for 2TB of storage.

ElephantDrive is a cloud backup service for users requiring the backup of large volumes of data. Personal plans start at $9.95 per month for 1000GB. Business plans start at $39.95 per month for 2000GB. ElephantDrive also offers a 2GB "free forever" plan.

ADrive is a cloud storage provider. Plans start at $2.50 per month for 100GB for individuals. Business plans start at $7 per month for 200GB.

9.3 Why do we need cloud Storage?

1. Optimize your cooperation:- Cloud drives is a perfect instrument for immediate data exchange.
2. Create backup for your private files. Usually, when PC or smartphone breaks down, firstly owners of these devices suffer because of wasted money, and then because of lost data.
3. Get more space for less money. A fee for unlimited storage in the cloud is cheaper than buying and maintaining lots of hard drive storage space.

9.4 Benefits of Using Cloud Storage

- Usability and accessibility.
- Security.
- Cost-efficient.
- Convenient sharing of files.
- Automation.
- Multiple users.
- Synchronization.
- Convenience.

9.5 Demerits of cloud storage

1. Backups May Be Slower. Internet bandwidth and cloud storage max ingest speeds may be more limited than the local network/disk.
2. Restores May Be Slower. It's all about internet bandwidth and rated cloud storage speed.
3. Higher Internet Utilization.

9.6 Scope of Cloud Computing As a Career

The scope of cloud computing is very bright. According to a report, the cloud computing market in India is at $2 billion and is expected to grow with an annual growth rate of 30%. By 2020, the cloud computing market in India is supposed to reach $4 billion and create more than a million jobs in this country.

Roles specific to this domain, such as Cloud Infrastructure Engineer, Cloud Architect, Cloud Enterprise Architect, and Cloud Software Engineer, are in massive demand according to a report.

With such expected growth, you can understand how fantastic the career prospects are for professionals in cloud computing.

9.7 Cloud Computing Salary in India

Currently, an entry-level job in the cloud computing sector provides a salary starting from 5 lakh per year, and it goes up to 7 lakh per year. As you gain experience, you'll earn more like a cloud computing professional. Mid-level managers in this field make up to 20 lakh per annum, while senior cloud professionals who have more than 15 years of experience are making more than one crore per year.

There's a massive shortage of talent in this sector as well. The same report highlights that globally, there are more than 1.7 million cloud jobs vacant because there aren't many qualified professionals. Only 1% of the applying candidates tend to have the necessary qualification to become a cloud professional.

In simple words, you can learn the necessary skills and become a highly in-demand professional through cloud computing. The scope of this field is bright in India.

Chapter - 10

Importance of Programming

10.1 What Is Programming?

Programming is using a language that a machine can understand in order to get it to perform various tasks. Computer programming is how we communicate with machines in a way that makes them function how we need.

10.2 What Is a Program?

A program is a group of logical, mathematical and sequential functions grouped together. When they are grouped, these functions perform a task. Each programming language focuses on different types of tasks as well as gives commands to the machine in different ways.

10.3 Why is it Important to Know about Computer Programming?

If you are thinking about earning your computer programming degree, you will need to know about programming languages, classes, functions and commands. You will create applications, software or different programs. In addition, you may create programs that need to work on various operating systems such as iOS or Android. Those programs have different functions and classes, which means they rely on different programming languages.

All applications on the web are created using computer programming. The languages used in each application you have range from similar to vastly different. Additionally, some languages create things that are running in the background, so you do not even know they are there. Learning computer programming languages allows you to be a versatile computer programmer.

10.4 What is the Future Impact of Computer Programming?

Technology production is an essential part of an evolving world. This means that computer programming is exceptionally important for our future as a global society. Computer programming degree graduates can help create this future by automating processes, collecting data, analysing information and sharing knowledge to continuously innovate and improve upon existing processes.

This means that, while computer programming is extremely important today, it may be even more impactful in the future. As computer programmers across the world work to learn new ways of communicating with machines and computers, the field will continue to grow. Earning your computer programming degree now means you can be part of that research and testing to develop functions that can help society.

Computer programming is important today because so much of our world is automated. Humans need to be able to control the interaction between people and machines. Since computers and machines are able to do things so efficiently and accurately, we use computer programming to harness that computing power.

10.5 What Are the Important Computer Programming Languages to Learn?

Popular and important computer programming languages based on necessity and application include:

- Python
- Java
- C/C++
- JavaScript
- Swift