



INTRODUCTION TO COMPUTER

Comp122 Laboratory Manual

Birzeit University
Department of Computer Science



Introduction to Computer for Non-Science Students
Department of Computer Science

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Date:

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1 Experiment 1: Operating System (Windows 10)

1.1 Outcomes

- To understand the role of operating system in computers
- To be familiar with different version of operating systems working on different devices
- To be familiar with main features in **Windows 10**
- To perform simple operations and action on Windows
- To gain the ability to differentiate between different computer specifications

1.2 Introduction

An operating system (commonly abbreviated OS and O/S) is an interface between hardware and applications; it is responsible for the management and coordination of activities and the sharing of the limited resources of the computer. The operating system acts as a host for applications that run on the machine. As a host, one of the purposes of an operating system is to handle the details of the operation of the hardware. The OS is like the behind-the-scenes-manager who takes care of all computing tasks such as saving your work, printing a document, starting a program, and so on.

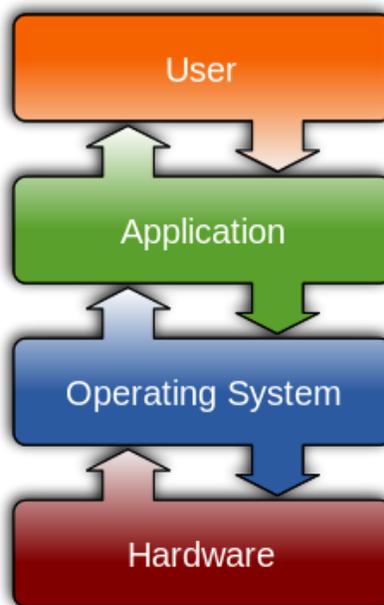


FIGURE 1-1 OPERATING SYSTEM [1]

Common contemporary operating systems include Microsoft Windows, Mac OS, and Linux. Microsoft Windows has a significant majority of market share in the desktop and notebook computer markets, while servers generally run on Linux or other Unix-like systems.

The operating system (OS) is a program that allows you to interact with all of the software and hardware on your computer, mainly there is two interaction types with operating systems:

1. **Command-line Interface (CLI):** (e.g., DOS), you type a text command and the computer responds according to that command.
2. **Graphical User Interface (GUI):** (e.g., Windows), you interact with the computer through a graphical interface with pictures and buttons by using the mouse and keyboard. With UNIX you have in general the option of using either command-lines (more control and flexibility) or GUIs (easier).

A graphical User Interface (GUI) is a type of user interface, which allows people to interact with electronic devices. A GUI offers graphical icons, and visual indicators, as opposed to text-based interfaces, typed command labels or text navigation to fully represent the information and actions available to a user. The actions are usually performed through direct manipulation of the graphical elements.

1.3 Windows 10 main components and features

1.3.1 Desktop

After your computer starts up, it prompts you to enter username and password. Logging on to computer identifies your personal settings and grant special permission for users. Afterward, Desktop appears automatically, which is considered your work area that contains files, icons, shortcuts and other menus.

The **taskbar** is located on the bottom edge of your desktop. You can move taskbar to other locations. It enables you to switch between open programs and documents, and also you can launch some programs pinned to taskbar.



FIGURE 1-2 WINDOWS 10 TASKBAR

1.3.2 Parts and contents:

Start menu: the central menu to access folders, programs and commands on your computer.

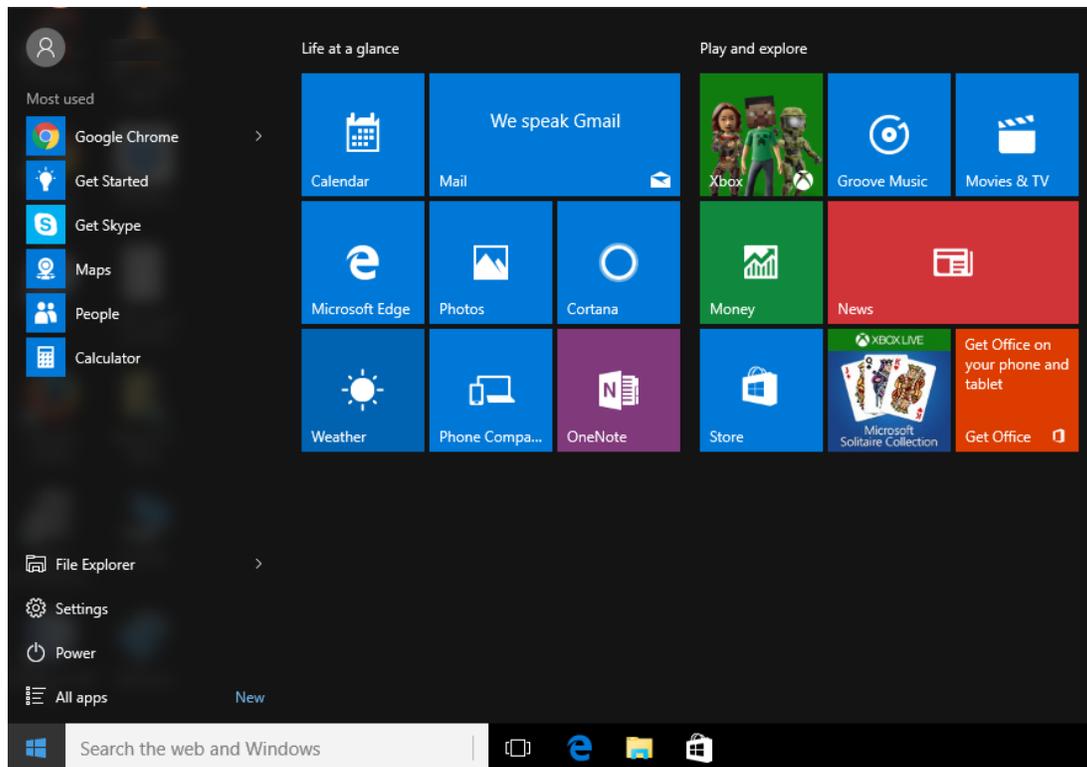


FIGURE 1-3 START MENU IN WINDOWS 10

Using the menu item “**All apps**”, you can access your computer programs.

To start a program:

1. Click the **Start** button, located in the lower left corner of your screen.
2. Highlight Programs. The Program menu will appear.
3. Move to the Program menu and highlight the program you want to start. If you see a right pointer next to your selection, a submenu will appear. Refine your choice by highlighting the appropriate selection on the submenu. Continue until you get to the final submenu.
4. Click the program name to start the program.

Menu: is a list of related commands, when you click a menu item, a drop-down menu appears. Select the command you want to execute from the drop-down menu. **Sub menus**, are associated with specific program groups. The small arrow to the far right recognizes them.

Icon: is a small image that represents an item ready to be open (e.g. File, folder) or launched (e.g. a program).

Desktop shortcut: is a small file that points to a program, folder, document, or Internet location and usually represented by an icon. When clicking on shortcut icon it takes you directly to the object it points into it. Shortcut icons contain a small arrow in their lower left corner. Shortcuts are considered as a merely pointer, deleting shortcut will not delete the original item .

1.3.3 Shutdown options: [2]

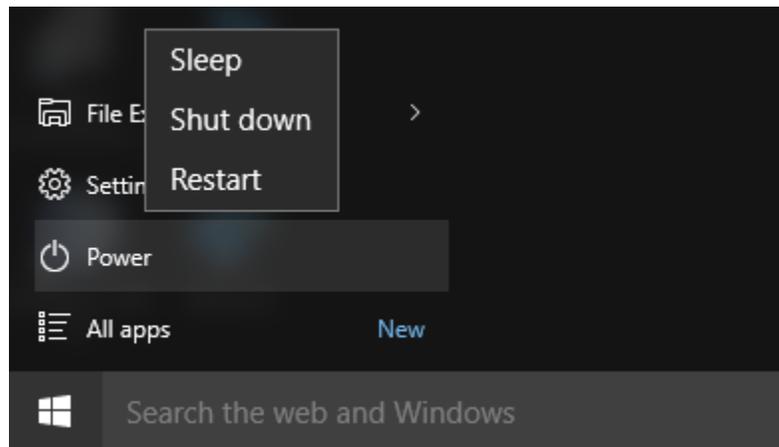


FIGURE 1-4 SHUTDOWN OPTIONS IN WINDOWS 10

Shut Down: If you click the Shutdown button, Windows 10 ties up all the loose ends and shuts down the computer completely. You would normally do this to turn off your work computer at the end of the day.

Restart: The Restart button "**reboots**" your computer, that means it saves your information to the hard drive, turns off the computer for a moment, and then turns it back on again. This is most often done after fixing a problem, adding a new program, or making a configuration change to Windows that requires a restart.

Sleep: Clicking on Sleep puts your computer in a low-power state, but does not turn it off. The main advantage is that it allows you to get back to work quickly, without having to wait for the computer to do a full reboot, which can take several minutes.

Hibernate: Hibernate mode is intended mainly for laptop users. It is sort of a compromise between Shut down and Sleep modes. It remembers the current state of your desktop and fully shuts down the computer. Therefore, if, for instance, you have a web browser open, a Microsoft Word document and a chat window, it would turn off the computer, while remembering what you were working on. Then, when you start up again, those applications will be waiting for you, right where you left off.

1.3.4 Rectangular windows

Windows: is a rectangular portion of your screen where a program runs. You can open several windows at the same time. Windows can be moved, resized, closed, maximized or minimized.

Windows are usually depicted as two-dimensional objects (like papers or books) arranged on a desktop. Most windows can be resized, moved, hidden, restored, and closed. When two overlap, one is on top of the other, with the covered part of the lower window not visible. However, many programs with text user interfaces, allow their display to be divided into areas that may also be referred to as "windows". Include creating a new file, arranging the icons or changing how the desktop appears (Properties or Personalize).

A window contains:

- **Title bar:** the title bar displays the name of the current file and the name of the current program.
- **Toolbar:** is a block of buttons or icons, when you click one of these buttons or icons, the program carries out a command or task.
- **Minimize button:** use the minimize button to temporarily decrease the size of a window or remove a window from view. While the window is minimized, the title appears on the taskbar.
- **Maximize button:** click the maximize button to make the window fill the screen.
- **Restore button:** after maximizing a window, if you click the restore button, the window will return to its original size.
- **Close button:** clicking on close button to exit the window and close the program.
- **Search Bar:** using the search bar you can search for any file in the current directory.
- **Local Disk (Hard Drive):** hard drive is the place where all system and user files are stored, all programs installed also on the hard drive.
- **CD Drive:** when you need to access files or program stored on external CD.

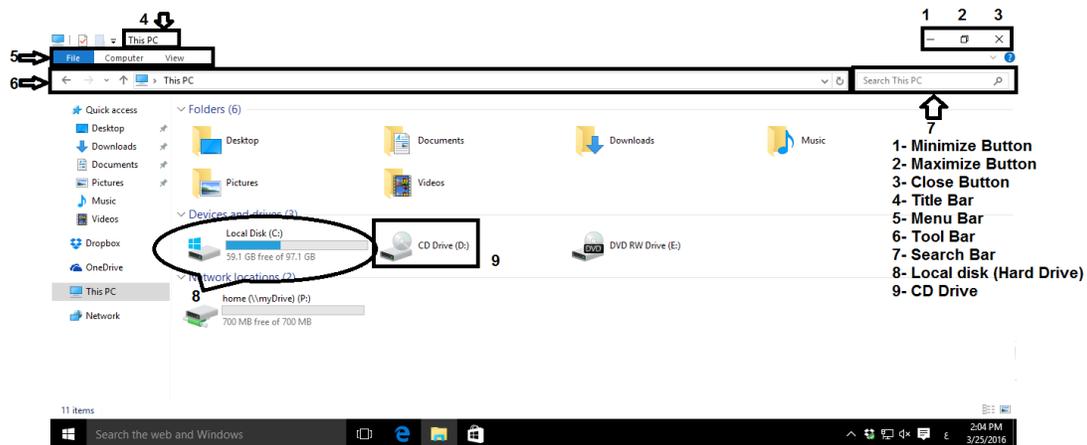


FIGURE 1-5 WINDOW PARTS

Switch between windows

If you have several windows open at the same time, the window on the top is the window with focus. You can only interact with the window with focus. To change windows, do one of the following:

1. Click anywhere on the window you want to focus on.
2. Hold down the Alt key and press the Tab key (Alt +Tab) until you select the window to which you want to view.
3. All active files displayed on the taskbar. Click the taskbar button for the window you want to focus on.

1.3.5 Windows Explorer

What is Windows Explorer?

Windows Explorer is your tool to work with files, folders, programs, hyperlinks, Control panel and much more. The starting point for work with Windows Explorer is often My PC. That system folder shows and gives access to most of the computer resources.

My Computer includes files and programs, folders and hyperlinks, drives and printers as objects. From the operating system viewpoint, they are all objects, and each object is associated with an icon. The system folder My Computer gives access to almost all of the computers data programs. Each object is represented with an icon plus some text.

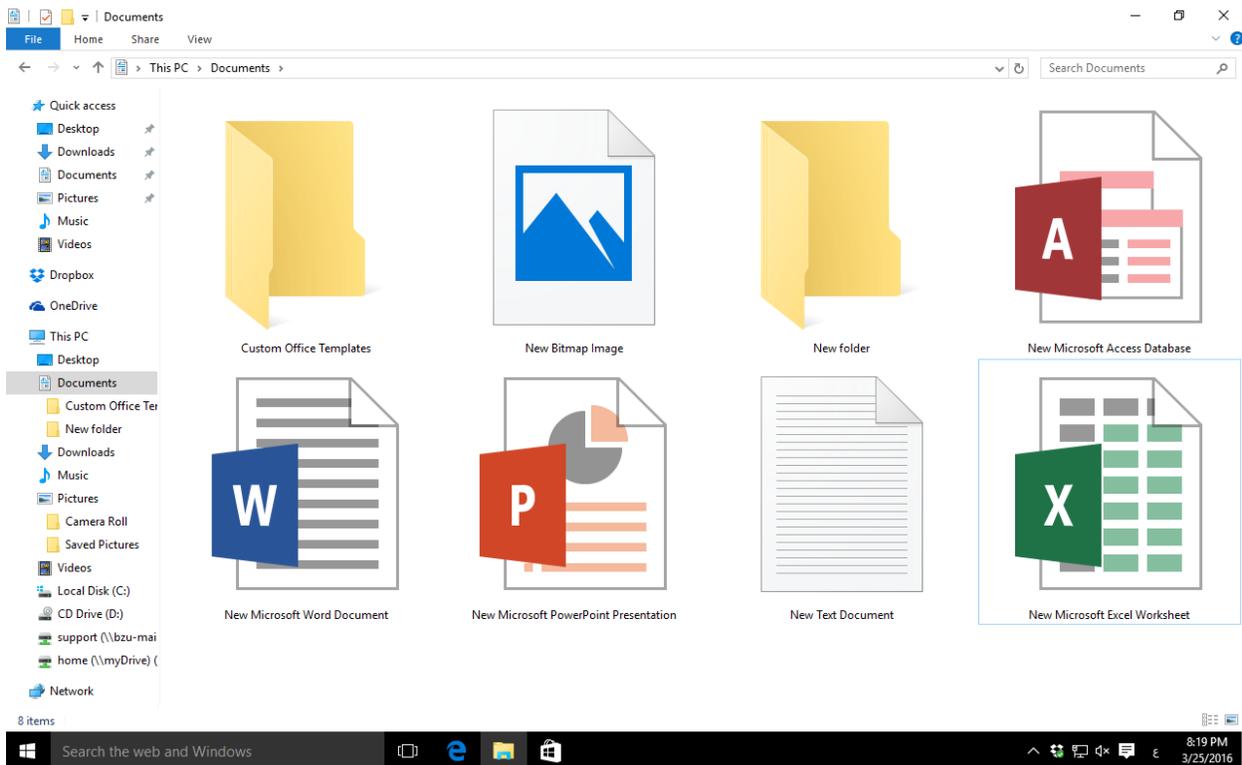


FIGURE 1-6 WINDOWS EXPLORER

Drives: Whole hard disks or parts of them (partitions), plus CD-ROMs etc. A drive typically contains many folders.

Folders: Containers for files that you can create yourself. A folder often contains many files.

Files: The smallest data units that we have access to. A file can be a whole document or a part of one.

Type	Icon	Description
HTML		HTML-documents. Contain typically home pages. Can be viewed in a browser like google Chrome.
DOC, DOCX		Microsoft office word document, to edit and modify documents.
XLSX, XLS		Microsoft Excel spear sheets. Excel sheets used to save data and make some calculations.
BMP PNG GIF JPG		Images with different extensions can be viewed on windows , these images can be used in other program like Microsoft office, Photoshop , etc...
AVI MP3 MP4		Movies (video recordings). Can be created with programs like Movie Maker and be played with Windows Media Player.

Microsoft Edge: Web browser introduced in Windows 10 used to access web pages on internet.

Recycle Bin: When you delete an object, Windows 10 sends it to the Recycle Bin. You can restore objects that are located in the Recycle Bin or you can permanently delete them.

Control Panel: is the entry to PC for various settings such as controlling hardware units, user's accounts, installed programs, languages, and others.

1.3.6 Windows Explorer views

Views control how Windows Explorer displays information in the right pane. Windows Explorer provides you with the following choices: Thumbnails, Tiles, Icons, List, and Details.

- **Thumbnails** view displays images. These images represent the contents of folders and files.
- **Tiles** view and **Icons** view display icons to represent drives, folders, and the contents of folders. The icons displayed when you choose Tiles view are larger than the icons that display when you choose Icon view.
- **List** view displays all of the files and folders without supplying the size, type, or date modified.
- **Details** view displays the size, type, and date modified.

To change the view:

1. Right-click any free area in the right pane. A context menu will appear.
2. Highlight View.
3. Select the view you want from the drop-down menu.

1.3.7 Commands you can do using Windows Explorer

- **To create a new folder in Windows Explorer:**

1. In the left pane, click the drive or folder in which you want to create the new folder.
2. Click any free area in the right pane. A context menu will appear.
3. Highlight New.
4. Click Folder.
5. Type a name for the folder.

- **To create a shortcut to an item located on the Start menu:**

1. Click Start. The Start menu will appear.
2. Locate the item to which you want to create a shortcut. If the item is located on a submenu, go to the submenu.
3. Click and drag the item to your desktop.

To create a shortcut to items visible in Windows Explorer:

1. Open Windows Explorer.
2. Minimize the Windows Explorer window.
3. Locate in Windows Explorer the item to which you want to create a shortcut.
4. Hold down the right mouse button and drag the item onto the desktop.
5. Release the right mouse button. A context menu will appear.
6. Click Create Shortcuts Here.

- **Rename a desktop shortcut / file or folder:**

1. Right-click the shortcut / the file or folder. A context menu will appear.
2. Click Rename.
3. Type the new name.

- **To delete a file or folder:**

1. Right-click the file or folder you want to delete. A context menu will appear.
2. Click Delete. Windows Explorer will ask, "Are sure you want to send this object to the recycle bin?"
3. Click Yes.

- **Cut, copy, and paste**

The Cut, Copy, and Paste commands are nearly universal. These three functions are used by almost every Windows program and perform more or less the same function in each of them. You can cut, copy, and paste programs, disks, and text.

Cut: When you cut something, it is deleted from its current location and saved to the Clipboard then you can paste it into other place (you move file or folder from one place to another).

Copy: Copy is similar to Cut except the original item is not deleted from its original place. When you copy something, a copy of the item is saved to the Clipboard then you can paste it into other place (you duplicate a file or folder).

Paste: You can place information on the Clipboard wherever you like. Execute the Paste command takes information you have cut or copied and placed it wherever your cursor is located.

Clipboard: The Clipboard is the storage area for items that have been cut or copied. Information saved to the Clipboard stays there until new information is either cut or copied. Each time you execute Cut or Copy, you replace the old information on the Clipboard with whatever you just cut or copied. You can paste Clipboard information as often as you like, until you replace it with something else.

There are three major methods of cutting, copying, and pasting. The three methods are using the menu, using keyboard shortcuts, and using icons. We will review all of them. In most programs, they will work exactly as described here.

1. Using the Menu

- Cut

1. Select what you want to cut.
2. Click Edit menu, which is located on the menu bar. A drop-down menu will appear.
3. Click Cut.

- Paste

1. Place the cursor at the point where you want to place the information that is currently on the Clipboard.
2. Click Edit. A drop-down menu will appear.
3. Click Paste.

- Copy

1. Select what you want to copy.
2. Click Edit, which is located on the menu bar. A drop-down menu will appear.
3. Click Copy.

To copy a file or folder:

1. Right-click the file or folder you want to copy. A context menu will appear.
2. Click Copy. The file or folder should now be on the Clipboard.

To cut a file or folder:

1. Right-click the file or folder you want to cut. A context menu will appear.
2. Click Cut. The file or folder should now be on the Clipboard.

Note: Cutting differs from deleting. When you cut a file, the files are placed on the Clipboard and wait to be paste. When you delete a file, the file is sent to the Recycle Bin and cannot be paste into other place.

To paste a file or folder:

1. After cutting or copying the file, right-click the object or right-click in the right pane of the folder to which you want to paste. A context menu will appear.
2. Click Paste.

2. Using keyboard shortcuts:

- Copy

1. Select what you want to copy.
2. Press the keyboard buttons “Ctrl” and “c”.

- Cut

1. Select what you want to cut.
2. Press the keyboard buttons “Ctrl” and “x”.

- Paste

1. Place the cursor at the point where you want to place the information that is currently on the Clipboard.
2. Press the keyboard buttons “Ctrl” and “v”.



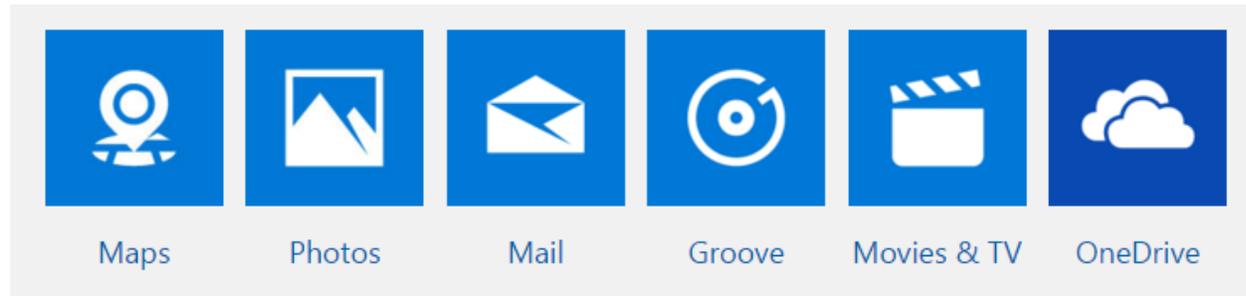
3. Using Icons from toolbar:

- If you want to copy or cut something, select it then press the suitable icon.
- If you want to paste something already being cut or copied, place the cursor at the point where you want to place the information that is currently on the Clipboard and press the paste icon.

1.4 Windows 10 main features

1.4.1 Build in applications

Windows 10 comes with elegant built-in applications like Maps, Photos, Mail & Calendar, Groove, and Movies & TV. These apps use OneDrive to back up your information and synchronize across your Windows 10 devices.



1.4.2 Store

The Store is a one-stop shop for music, videos, games, and apps..

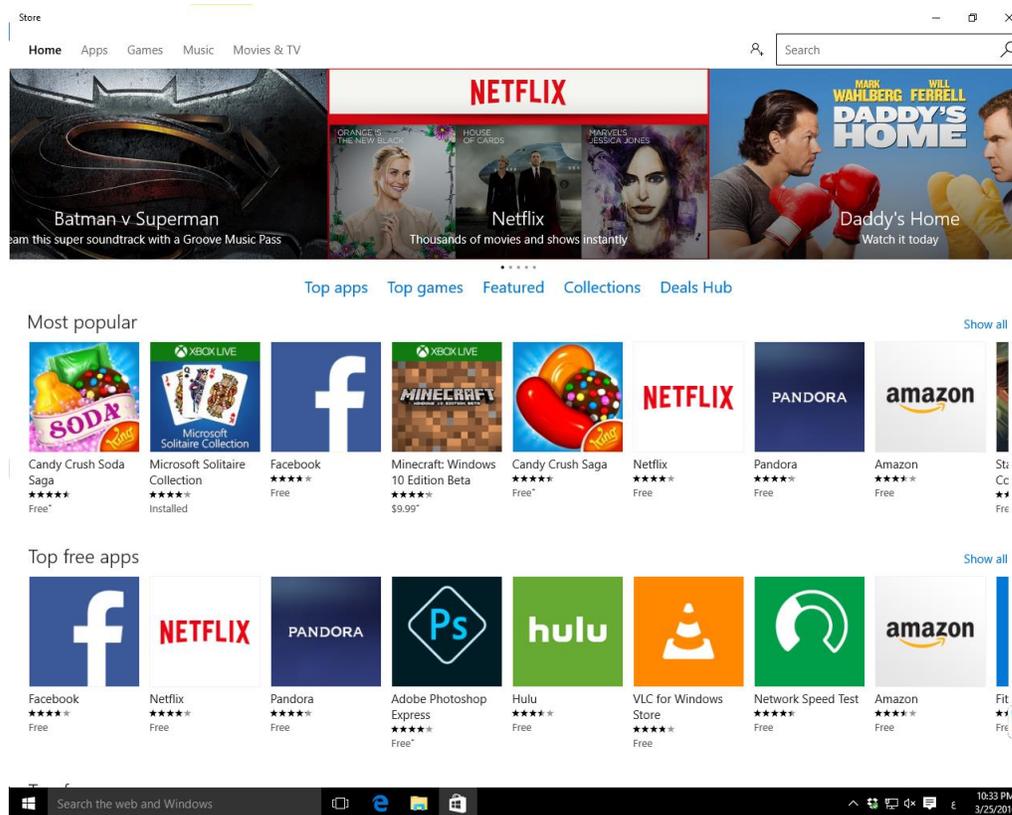


FIGURE 1-7 WINDOWS 10 STORE

1.4.3 Cortana

What is Cortana?

Cortana is your clever new personal assistant.

Cortana will help you find things on your PC, manage your calendar, track packages, find files, chat with you, and tell jokes. The more you use Cortana, the more personalized your experience will be. To get started, type a question in the search box on the taskbar. Alternatively, select the microphone icon and talk to Cortana.

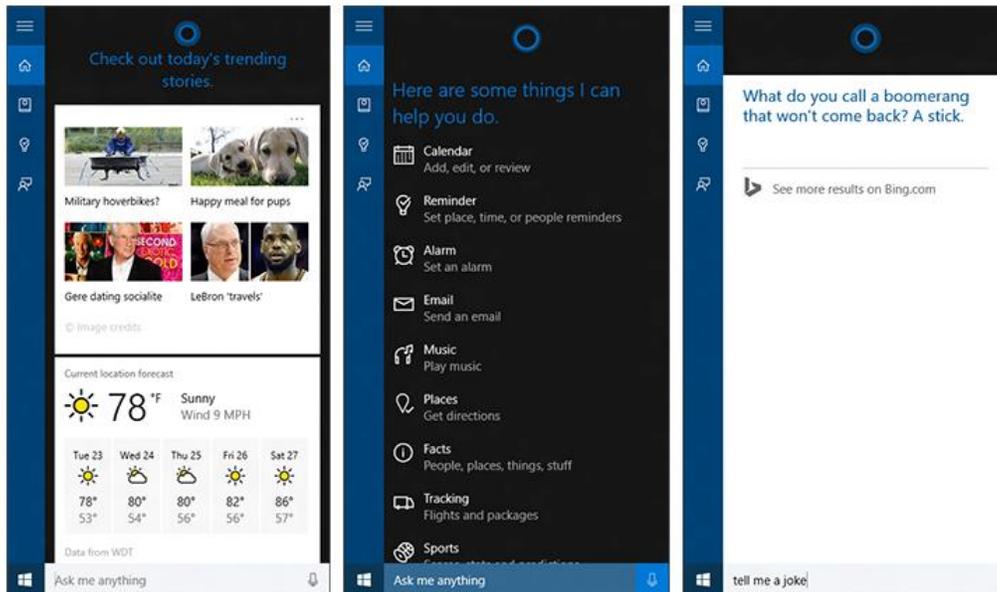


FIGURE 1-8 CORTANA IN WINDOWS 10

Cortana provides the following features for users

- Set Reminders for Times, Places, and people.
- Use natural language search for files in your computer or search in web.
- Identify songs: Cortana can listen to a song playing near you and identify it. Say “What is this song?” and Cortana will use your microphone to listen to the music and match it to a specific song.
- Search the Web using Bing, google or any search engine you like.
- Perform calculations and conversion
- Track flights and packages: Cortana can track flights using the flight number and packages using their tracking numbers.
- Check the Weather: Use Cortana to quickly check the weather in different locations. “Weather” will show you the weather at your current location, while “weather in [location]” will show you the weather in another city.
- In addition to many awesome features (set Alarm, get directions, launch programs, send email Chat etc...).

1.5 Computer specifications comparison

When you decide to buy a new PC or laptop, you should be careful about several points and technical decision that you will have to make, for instance:

- How much RAM you will need?
- Which processor to choose?
- Which graphics card to pick?
- What display to look for?
- Which hard drive will be best for you?

The sort of applications you will need to run on your PC will help you to decide which feature your PC should have.

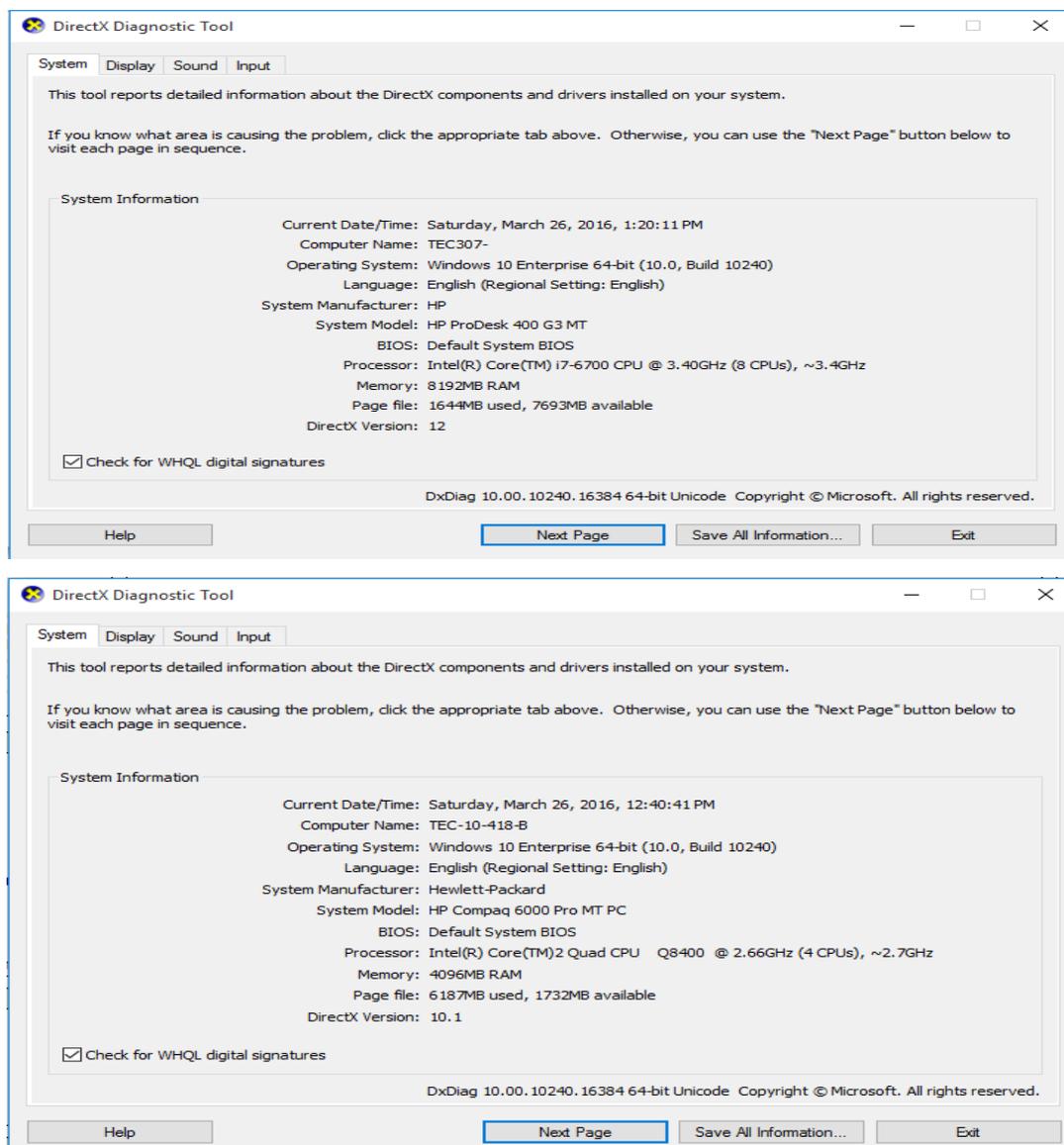


FIGURE 1-9 COMPARISON BETWEEN TWO PCS

The upper image shows HP PC which has 6th generation of i7 processor with clock frequency 3.4GHz and 8 logical cores ,while the second HP computer has Core 2 Quad CPU with 2.66GHz clock frequency and 4 logical cores . The performance of each processor can be easily determined by comparing the feature of each processor.

Random access memory (RAM) of the first PC is 4 GB while the second PC is 8 GB , the more RAM is the better , but usually 4GB is more than enough for normal usage,

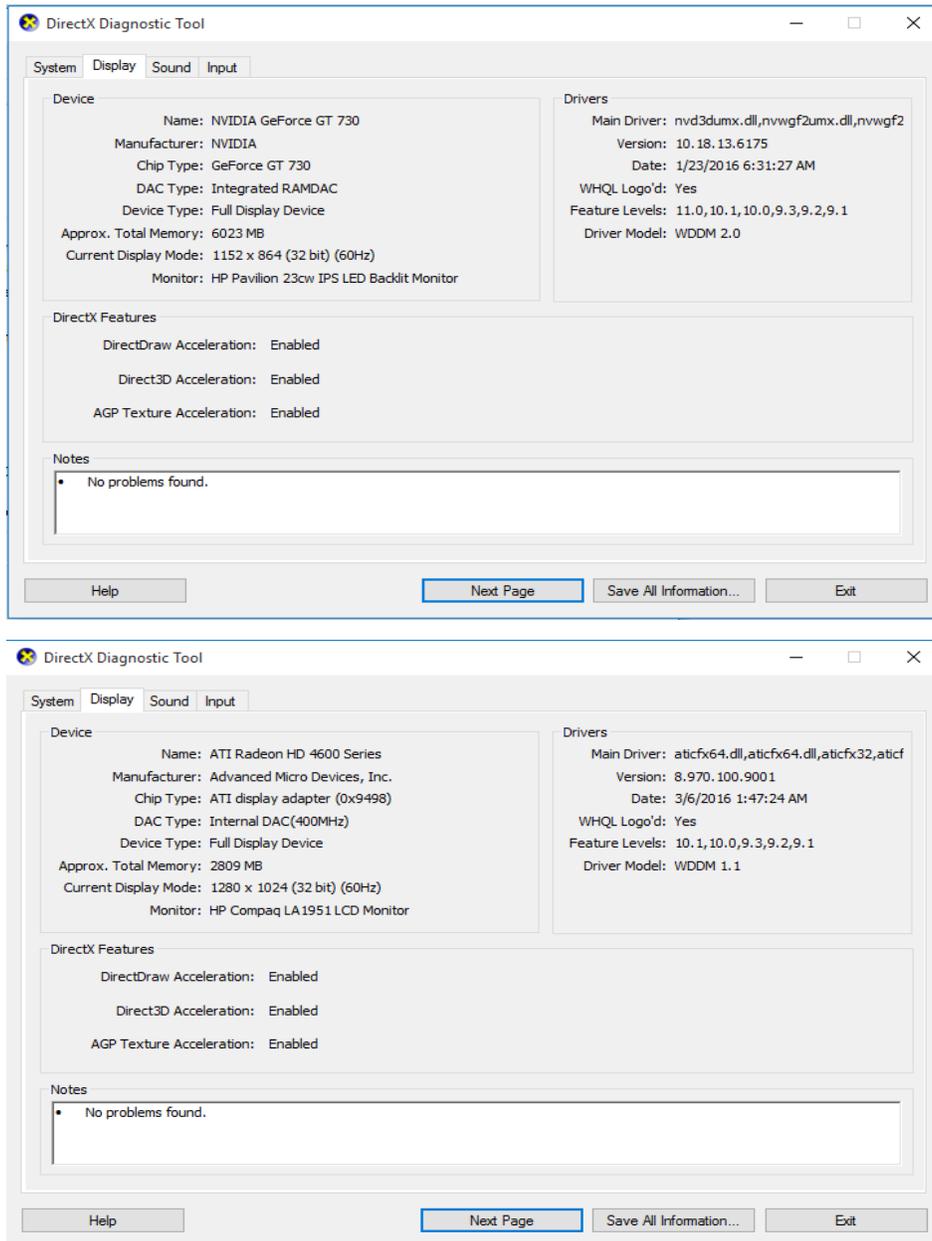
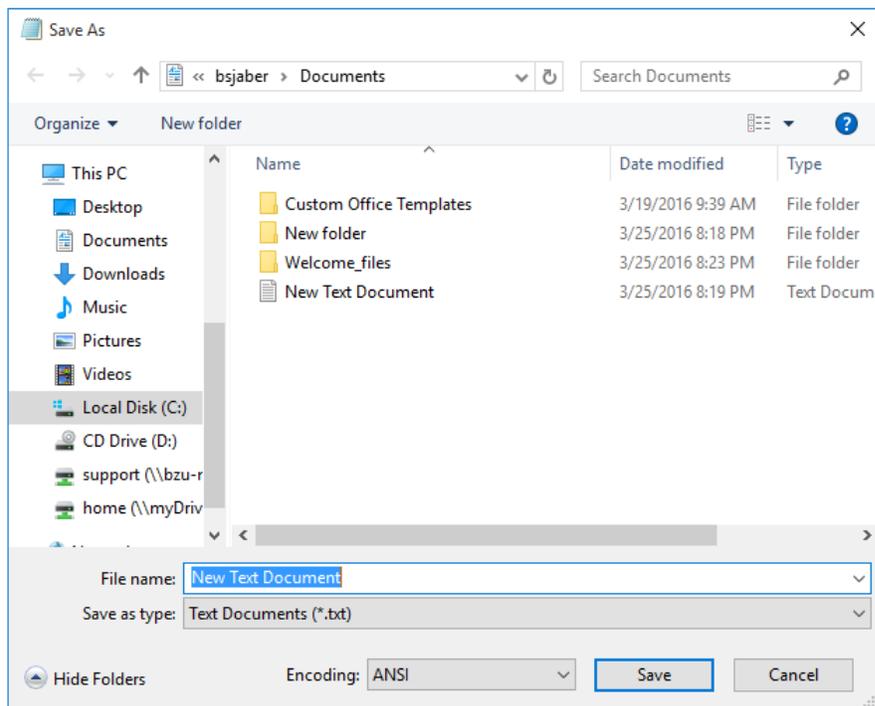


FIGURE 1-10 GRAPHIC CARD COMPARISON

The last screen shoot shows a small comparison between two types of graphic cards (ATI RADEON and NVEDIA GeForce) , usually Gamers and graphic designers search for high quality graphic cards.

1.6 Exercises

1. **On your desktop create a new folder.**
2. **Rename the folder to hold your name.**
3. **Delete your folder.**
4. **Go to Recycle Bin, find your folder there, and restore it.**
5. **Create a text file and save it into your folder:**
 - 5.1. Go to start menu, all programs, Accessories, click to open Notepad.
 - 5.2. Write in it your name and ID.
 - 5.3. Go to file, save as, name the file and chose your folder on desktop.



6. **Go to Desktop, open your folder, Copy the file, and paste it on My Documents.**
7. **What are the differences between the following?**
 - 7.1. File and Folder.
 - 7.2. Copy and Cut
 - 7.3. Cut and Delete

2 Experiment 2: Ritaj and the Internet

2.1 Outcomes

- What we mean by Internet?
- Define what Ritaj is? and what are the main functionality the student can do on Ritaj?
- What are search engines?
- Identify the main services Google provides.
- Knowing some of the famous social networking websites.
- Identify some online applications.
- Know how to set a strong password.

2.2 Introduction

Now a day we almost can't find a house without this technology that has the name "Internet" which made our whole world a small country. Some computer scientists define Internet as the network of networks, we can imagine connecting two personal computers which give a simple network that can be expand with other 28 computers to provide our lab network (the one you are taking this lab in) this lab also connected with all other labs in Birzeit University to provide us the university network, our university connected with one of the Internet Service Providers (ISP's) in Palestine which also connected with other networks in the whole world to provide us the internet.

There are some core technologies that enable the Internet to work:

- TCP/IP: Transmission Control Protocol / Internet Protocol
- IP Addresses:
 - Computers are identified by their 'IP addresses.
 - The format is nnn.nnn.nnn.nnn (Each of these numbers falls in the range 0 – 255 e.g. 127.0.0.1).
 - Hardware devices known as 'routers' glue all the different networks together.
- The Domain Name System (DNS): Most website hosts use domain names rather than actual IP addresses.

In this experiments we will talk about some important websites, internet related applications and we will learn some techniques with using them.

2.3 Ritaj (ritaj.birzeit.edu)

As a student in Birzeit University you will use this website frequently. Ritaj considered as an academic portal that connects the students with their teachers. Through Ritaj students can see their schedules for current semester, can register for the new semester, send memos to teachers who are teaching them, send memos to any student in the university by using his/her ID number and many other functionalities we will learn about by doing the following activity:

1. Visit Ritaj by following this link: <https://ritaj.birzeit.edu>. Figure 2.1 shows Ritaj home page before entering the login information.



FIGURE 2-1: RITAJ HOME PAGE.

2. The login information are your student ID number and your password. The student ID divided to two sections (the first three digits are the year you registered and the other four digits are your sequential number in that year) e.g. the number 1140035 indicates that this student entered the university in 2014 and her number was 35. To set a strong password see [section 2.7](#).
3. Now enter your login information and hit enter.
4. A page like figure 2.2 will appear.

The screenshot shows the Birzeit University Academic and Administrative Portal. The page is organized into several main sections:

- Top Header:** Includes the Birzeit University logo, the name "Birzeit University Academic and Administrative Portal", a search bar, and a user profile area with "Your name" and a "Logout from Ritaj" button.
- Courses Section:** A box titled "Current Semester / Hide" contains a list of courses. A callout states: "A list of all the courses you registered in the current semester".
- Academic Section:** Lists various academic services like "Academic Applications - Specialization & Transfer", "Academic Research Proposals", "Claiming Minor", "Course Browser", "Course Schedule", "Education Diploma Program Applications", and "W Request". A callout points to this section: "All academic related options".
- Administration Section:** Lists services like "Faculty Transfer Conditions", "Midterm Exams Schedule - Second Semester 2015/2016 - NEW", and "Work and Break Time Schedule for Departments". A callout points to this section: "Administration options".
- Management Tasks Section:** Lists "Recommendation Requests". A callout points to this section: "Ask a teacher for a recommendatin letter".
- Personal Profile Section:** Lists "Alerts via SMS", "Appointments", "Library Books", "My Contact Information", and "User Settings". A callout points to this section: "Personal options, to change the password and Ritaj language use user settings".
- Notifications Section:** Contains "Academic Information of Secretariat of 2010/2011" and "University Notifications". A callout states: "Important links (Academic messages, registration system, etc.)".
- Ritaj Messaging System Section:** Shows a list of messages. A callout states: "Course messages and public boards, you can also send a memo to any student using his student ID".
- General Information & Links Section:** Lists various university links. A callout states: "General links related to the university. One important link is the academic calendar.".
- Student Menu Section:** Lists various student services like "Academic Messages", "Academic Record", "Advisory Plan Sheet", "Authorization System", "Community Work Record", "Exchange of academic books", "Financial Record", "Hour Exams Dates - NEW", "Leadership Application", "Name & Address Card", "Personal Information", "Published Grades (1'st, HW, ..)", "Registration of Community Work", "Request Official Documents", "Student Employment", "Student Plan", and "Student Survey Form - NEW". A callout points to this section: "Important links related to student himself/herself which show cumulative average and other records and messages.".

At the bottom of the page, there is a footer with the Birzeit University logo, copyright information "© 2002 - 2016 Birzeit University . All Rights Reserved", and contact information "Contact Us : help@ritaj.ps Or call (8:00-16:00); +97022982000".

FIGURE 2-2: STUDENT HOME PAGE.

5. You can notice that all the links are grouped in different categories.
6. In the rest of this activity we will discuss some important categories and links.
 - a. The courses category which show the list of courses registered in the current semester. Now let us visit our course Comp121 / Section # / Lab teacher name.
 - b. Figure 2.3 shows details of the course page.
 - i. By clicking on send memo beside the instructor name, you will be able to send a message for your instructor only.
 - ii. By clicking on new discussion you will send a message to all students in the class.
 - iii. By clicking course board you will find the course messages sent by your instructor and other discussion messages as in **point ii**.

Birzeit University Academic and Administrative Portal

Your name

Type to search menu

Course:	COMP121, INTRODUCTION TO COMPUTER - مقدمة في الحاسوب	Instructor name:	Section:	15 / Diaeddin Rimawi Send Memo
Department:	COSC, Computer Science - علم الحاسوب	# of registered students:	Enrolled:	27 / 27
Course Info:	(Credit: 2)	Lab time and room:	Class Times:	W 14:00 - 16:50 Masr1305

Welcome to COMP121

Course Board

(14) New Discussions - نقاش

Grade Sheet | Research Charter Honor - Print | Go to ITC | Help

FIGURE 2-3: COURSE PAGE

- c. Course browser link: Shows all the courses at the university.
- d. Course schedule: Which shows your current schedule (course, teacher, time and room) Figure 2.4 shows an example of how your schedule should appear:

Second Semester 2015/2016

Name: Your name Student Number: Different informations about you and your specialization

College: Faculty Of Arts Major: Ba Program Of English Language And Literature

Course Label	Class	Course Title	Instructor	Days	time	Room Number
ACCT130	2	FINANCIAL ACCOUNTING 1	Your instructors names	M, W	10:00 - 10:50	Al-Juraysi001
ACCT130	10D	FINANCIAL ACCOUNTING 1		S	13:00 - 13:50	Al-Juraysi325
ENGL235	3	ENGLISH GRAMMAR		T, R	14:00 - 15:20	Aggad403
ENGL237	2	FUNCTIONAL PHONETICS		S, M, W	11:00 - 11:50	A.Shaheen262
ENGL330	2	ENGLISH LITERATURE 1		T, R	12:30 - 13:50	Masri110
FREN131	6	INTRODUCTION TO FRENCH LANGUAGE		S	09:00 - 09:50	Bamieh302
			M	09:00 - 09:50	Masri109	
			W	09:00 - 09:50	Al-Juraysi021	

Day	7	8	9	10	11	12	13	14	15	16	17	18
Saturday			FREN131		ENGL237		ACCT130					
Sunday												
Monday			FREN131	ACCT130	ENGL237							
Tuesday							ENGL330	ENGL235				
Wednesday			FREN131	ACCT130	ENGL237							
Thursday							ENGL330	ENGL235				
Friday												

Total Credit Hours: 15

FIGURE 2-4: COURSE SCHEDULE.

- i. By clicking on your instructor name Ritaj will show you the instructor office hours.
- ii. By clicking on the Room Number the name of the faculty will appear.
- e. User settings: From this link you be able to change your language settings, your password and other security options.
- f. Send new memo link: This link will let you send a new message to any student you know his/ her student ID as an address to send to.
- g. Academic messages: All academic messages (Alerting, Warning) will be in this page.

- h. Academic records: Will show all the records you got over your life in the university, and your cumulative and specialization averages.

2.4 Google (www.google.ps)

A web search engine is designed to search for information on the World Wide Web (WWW) and FTP servers. The search results are generally presented in a list of results and are often called hits. The information may consist of web pages, images, information and other types of files.

Typically, a search engine software works by sending out a **spiders** to fetch as many documents as possible. Another program, called an **indexer**, reads these documents and creates an **index** based on the words contained in each document. Each search engine uses a **proprietary algorithm** to create its indices such that, ideally, only meaningful results are returned for each **query** the searcher types into a search engine.

Search is always case insensitive. A search for [university] is the same as a search for [University] and general the punctuation is ignored, including @#% ^&*()=+[]\ and other special characters.

There are many examples on search engines, the most popular one is **Google** and there are Bing, Yahoo, Ask.com, Aol.com, etc. in the rest of this activity we will focus on Google search engine:

1. Each blue underlined line is a search result (see Figure <>) that the Google search engine found for your search terms. The first item is the most relevant match we found, the second is the next most relevant, and so on down the list. If you click the title of any result, you'll be taken to that webpage.
2. Figure 2.5 shows the main page of Google.ps:



FIGURE 2-5: GOOGLE MAIN PAGE.

3. Figure 2.6 shows the results for the query introduction to computer, comp121, Birzeit university:

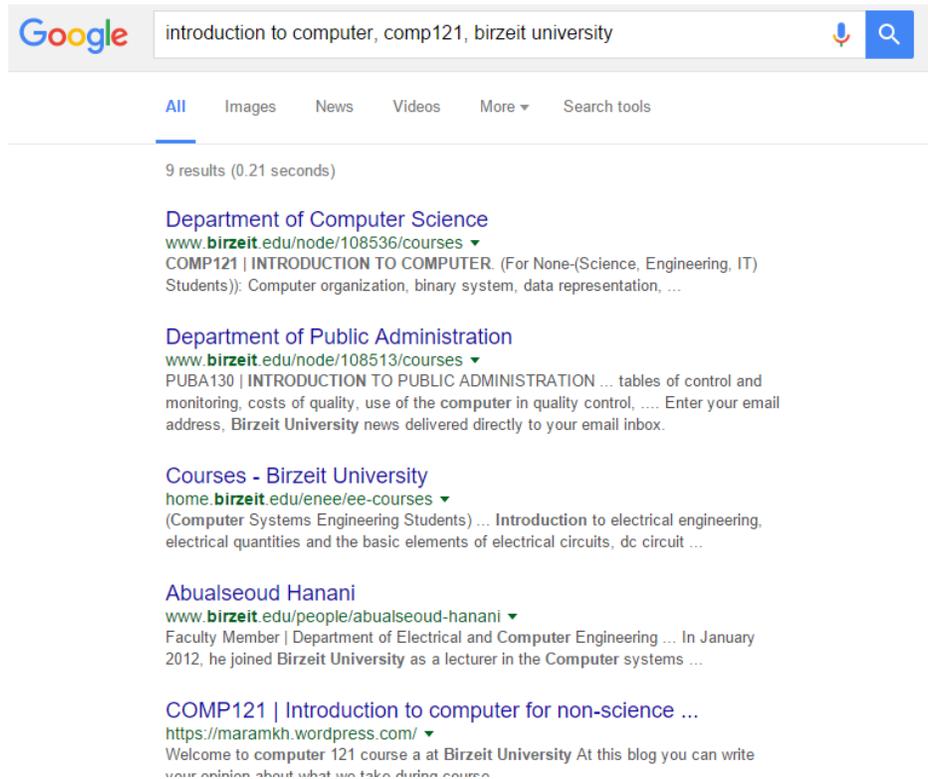


FIGURE 2-6: SEARCH RESULTS

4. The following are some search helping phrases:
- Phrase search (""): By putting double quotes around a set of words, you are telling Google to consider the exact words in that exact order without any change.
 - Search within a specific website (site:): Google allows you to specify that your search results must come from a given website.
 - Terms you want to exclude (-): Attaching a minus sign immediately before a word indicates that you do not want pages that contain this word to appear in your results.
 - Fill in the blanks (*): The *, or wildcard, is a little-known feature that can be very powerful. If you include * within a query, it tells Google to try to treat the star as a placeholder for any unknown term(s) and then find the best matches.
 - Search exactly as is (+): By attaching a + immediately before a word, you are telling Google to match that word precisely as you typed it. Putting double quotes around a single word will do the same thing.
 - The OR operator: Google's default behavior is to consider all the words in a search. If you want to specifically allow either one of several words, you can use the OR operator (note that you have to type 'OR' in ALL CAPS or you can use the symbol "[|]").

(Remember, don't add a space when you using site:, + and -)

There are many other applications google provides beside the search engine:

- I. Google gmail: A google mail or in other word the google account. Which we encourage all internet users to have one. And you can simply build one by visiting the following link: <https://accounts.google.com/SignUp>. Figure 2.7 shows the signup page:

Create your Google Account

One account is all you need
One free account gets you into everything Google.

Take it all with you
Switch between devices, and pick up wherever you left off.

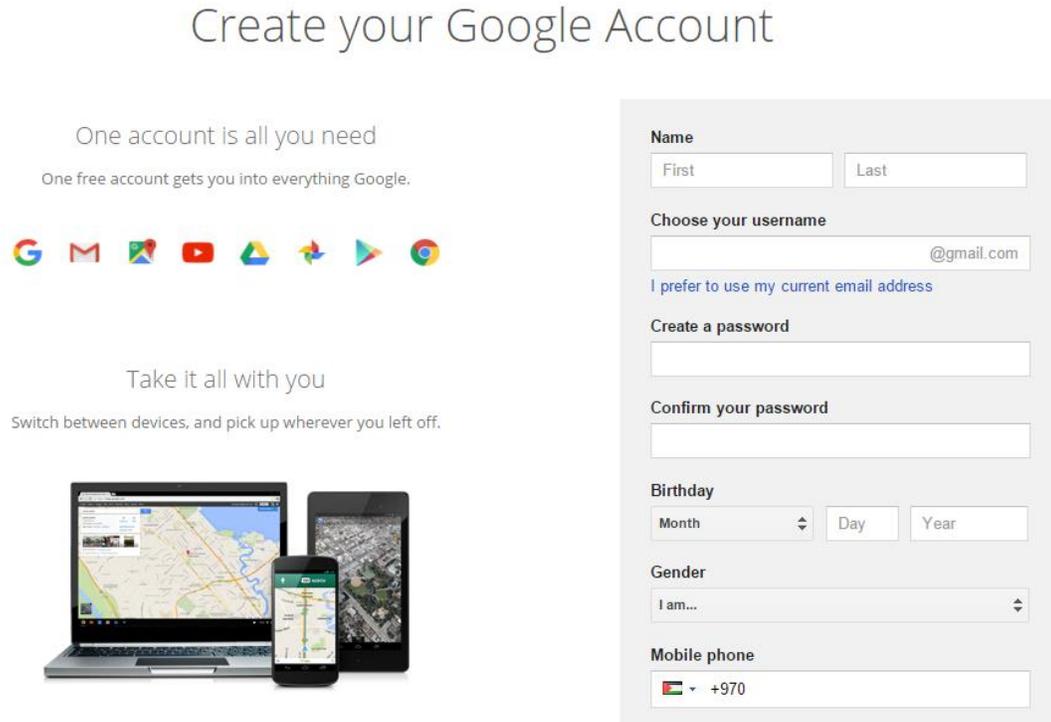


FIGURE 2-7: GOOGL SIGNUP PAGE.

- II. Google translate: Which is an online dictionary from any language to other language in the world!
- III. Google+: A social network website that you can add people on it and work like other social network websites (e.g. facebook).
- IV. Google calendar: An online shared calendar that can manage time between individuals and groups.
- V. Google Scholar: Provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites.
- VI. Google Drive is a free service from Google that allows you to store files online and access them anywhere using the cloud. Google Drive also gives you access to free web-based applications for creating documents, spreadsheets, slides and more.

2.5 Social networking

A social networking service (also social networking site or SNS) is a platform to build social networks or social relations among people who share similar interests, activities, backgrounds or real-life connections. A social network service consists of a representation of each user (often a profile), his or her social links, and a variety of additional services such as career services.

Some famous social networks:

1. Facebook: General social networking that can share photos, videos, blogs and applications.
2. Twitter: General social networking that is Micro-blogging, RSS and updates.
3. LinkedIn: Business and professional networking (online CV). We highly recommending each student to have an account in this website. The following link is a tutorial on how to create an account on linkedin and how to make improve it:



Title: LinkedIn Tutorial Series 2014. Channel: Anson Alexander.

https://www.youtube.com/watch?v=D_aXKxRPvE8&list=PLs7zxED4oCepq88a1BX6m_Qh86u76-Z6o

4. Instagram: A photo and video sharing site.
5. Ask.fm: Users create profiles and can send each other anonymous and non-anonymous questions.

2.6 Useful online applications and websites

It is not a necessary anymore to install a lot of applications on your personal computer. Now you can just search online for what you want to do, and there is a lot of websites specialized on do your work for you. We mention some useful online applications (Please use google to search for them):



1. Dropbox (www.dropbox.com): A storage space on the cloud starting with 2 GB, you can simply registered in this website by entering the website and enter your email address and setting a password. The application let you drag and drop or copy and paste your files to a virtual folder, which will synchronize your files in all places you open your account.
2. Currency converter: Which provides you with the ability to select two currencies and convert from one to another. Just search for “Currency converter” on google.
3. Online calculator: Just type your equation as query on google and it will provides you with scientific calculator with the result of your equation. For e.g. $(25*2)+(8/2)$.

4. Photo editing: If you search via google for photo editor you will find a variety of web applications provide you with this service.
5. Youtube to MP3: A website that download a given youtube video link as a sound file (MP3 file).
6. Youtube to MP4: A website that download a given youtube video link as a video file (MP4 file).
7. JPG to PDF: A website that takes multi-images and sort them in one pdf file.
8. Shrink PDF size: A website that takes a pdf file and compress its size as much as possible without effecting its quality.
9. PDF to word: Converting a PDF file to doc/docx file.

2.7 Password

A password is a secret word or phrase that must be used to gain admission to a place. Don't ever give your password to anyone, don't put the same password for more than one account and don't write it on a paper and put it under the keyboard or the screen. Be fully aware that there is no site asks its users for their passwords under any circumstances. In this section we'll provide some tips in order to create a strong and remembered password:



1. Think of a sentence that have more or equal to 8 words. It can be a verse, piece of a song, a saying that touched you or anything you like, as an example I will use that sentence maybe each of our English teachers use:
One apple a day keeps the doctor away.
2. Now take the first letter of each word so the password would be: "Oaadktda".
3. Let us try to convert the letters that looks like numbers to numbers (e.g. O looks like zero "0") the new password: "0aadk1da".
4. Convert letters to special characters (e.g. the "a" letter looks like "@") so the password: "0@@dk1d@".
5. We can make it even harder by having a mix of capital letters and small letters.

The final password: "0@@dK1d@". This password will never be guess by the cracking tools and it also easy to regenerate by you.

2.8 Exercises

1. Create a strong password for each account you have.
2. Create a google account and sign-in to google chrome browser.
3. Could you differentiate between social networking and search engines?
4. Identify the valid IP addresses in the following:
 - a. 8.8.8.8
 - b. 192.168.0.1.1
 - c. 172.15.256.255
 - d. 255.255.255.251

3 Experiment 3: Microsoft Office Word (2016)

3.1 Outcomes

- Create and save a document to a specified area.
- Locate and open an existing document.
- Move around a document efficiently.
- Use the mouse and keyboard to select text
- Add or remove effects such as bold, underline and italic
- Set the font size style and color.
- Align text within a document
- Add a header/footer.
- Add date, page number, footnote within a document.
- Preview and print selected pages.
- Use the Auto Correct function
- Cut, copy and paste to manipulate text.
- Use the find and replace function.
- Differ between undo and redo.
- Use pictures, symbols, chart.
- Create and delete tables.
- Create References, table of content and figures.

3.2 Introduction

Every day, we discover that we cannot live with computers. One of the important usages of computer is dealing with and processing text. In this experiment, we try to make student who is not familiar with word processing to be that. In Computer software's world, there is a lot of text processing software, but the most popular one is Microsoft Word.

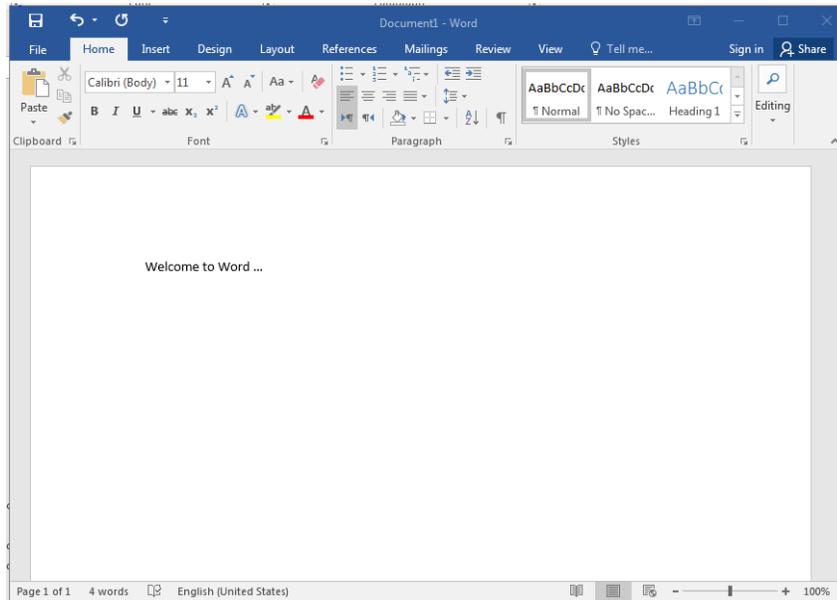
Microsoft word is one of most software applications that deal with *word processing or text processing*. Every student requires programs dealing with word processing during the educational as well the professional life. In this experiment, the student will learn how to work with Microsoft Word 2016, and how to be familiar with its environment so the student can perform the text processing work in addition to writing reports without asking for help.

3.2.1 Getting Started with Microsoft Word 2016

In this part students will learn how to enter and insert text. They should be able to open, save and reopen saved documents. In order to enrich documents, students can change the appearance of the text through different actions. The following are some techniques to be able to manage your documents.

To Open Microsoft word 2016 (MS Word 2016) click the Start **button** on your Windows desktop and select All Programs and then choose Microsoft office then Microsoft word 2016.

Exploring the window:



The File Button

In the upper-left corner of the Word 2016 window is the File button. When you click the 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.



1.1.1 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, Undo and Redo icons appear on the Quick Access toolbar. You can use Undo to rollback an action you have taken, and Redo to reapply an action you have rolled back.



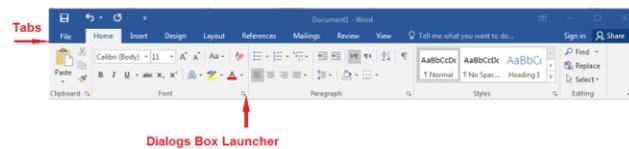
1.1.2 The Title Bar

Next to the Quick Access toolbar is the Title bar. The Title bar displays the title of the document on which you are currently working. Word names the first new document you open Document1. As you open additional new documents, Word names them sequentially. When you save your document, you assign the document a new name.



1.1.3 The Ribbon

You use commands to tell Microsoft Word what to do. In Microsoft Word 2016, you use the Ribbon to issue commands. The Ribbon is located near the top of the screen, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays several related command groups. Within each group are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. Clicking the dialog box launcher gives you access to additional commands via a dialog box.

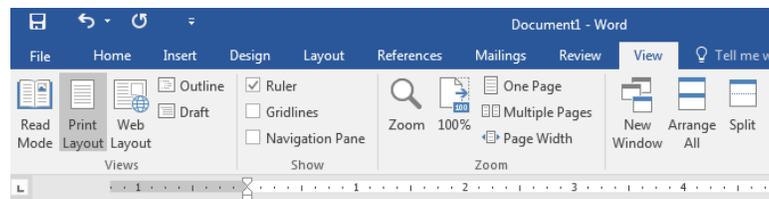


1.1.4 The Ruler

The ruler is found below the Ribbon.



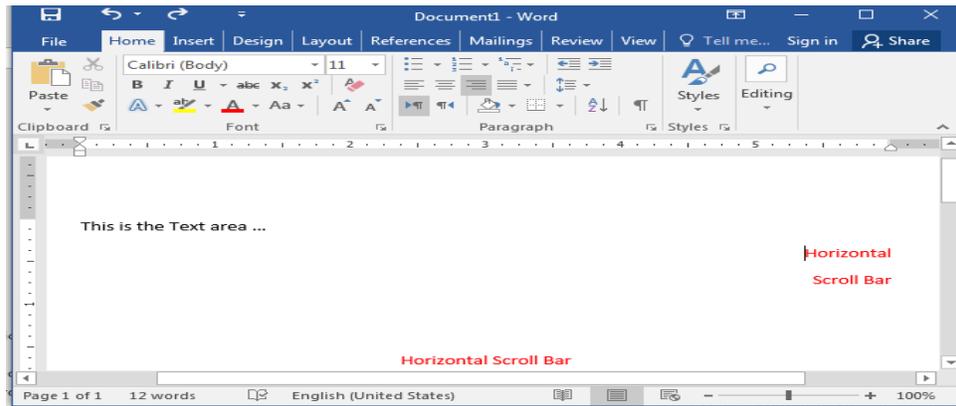
You can use the ruler to change the format of your document quickly. If your ruler is not visible, follow the steps listed here:



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.

1.1.5 The Text Area

Below the ruler is a large area called the text area. You type your document in the text area. The blinking vertical line in the upper-left corner of the text area is the cursor. It marks the insertion point. As you type, your text displays at the cursor location. The horizontal line next to the cursor marks the end of the document.

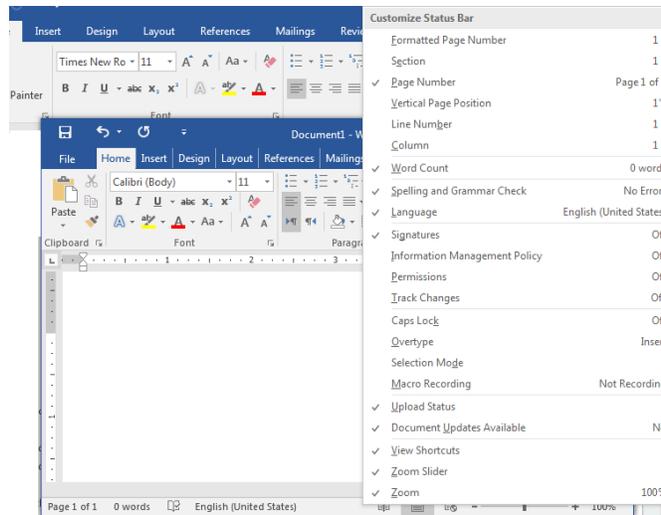


1.1.6 The Vertical and Horizontal and Vertical Scroll Bars

The vertical and horizontal scroll bars enable you to move up, down, and across your window simply by dragging the icon located on the scroll bar. The vertical scroll bar is located along the right side of the screen. The horizontal scroll bar is located just above the status bar. To move up and down your document, click and drag the vertical scroll bar up and down. To move back and forth across your document, click and drag the horizontal scroll bar back and forth. You won't see a horizontal scroll bar if the width of your document fits on your screen.

1.1.7 The Status Bar

The Status bar appears at the very bottom of your window and provides such information as the current page, language and the number of words in your document. You can change what displays on the Status bar by right-clicking on the Status bar and selecting the options you want from the Customize Status Bar menu. You click a menu item to select it. You click it again to deselect it. A check mark next to an item means it is selected.



In Word 2016, you can display your document in one of three views: Web Layout, Print Layout, Reading mode.

1. *Web Layout* 

Web Layout view enables you to see your document as it would appear in a browser such as Internet Explorer.
2. *Print Layout* 

The Print Layout view shows the document as it will look when it is printed.
3. *Read mode* 

Reading Layout view formats your screen to make reading your document more comfortable.

1.2 Basic Functions in Word 2016 (File Menu):

1.2.1 Create a New Document:

When you open Word in a new default document called Document1 is created and so you can start entering your text immediately but if you want to open another new document you can do one of the following ways:

1. Go to **File** menu and choose **New**.
2. From keyboard press **Ctrl + N**.

1.2.2 Entering and Inserting Text:

After creating your new document, you can start entering your text. The insertion point, or *cursor*, "blinks" at the top of the document where the text you are typing will be displayed. When you have entered enough text for one line, the cursor automatically wraps (moves) to the next line. If you want to start a new paragraph, press the Enter Key couple of times. You can also place the cursor in any location where you want to insert new text.

1.2.3 Moving Around Document:

When you want to move through your document you can use one of the following methods:

1. The cursor in different locations to add text.
2. Click the **Scrollbar** to change which part of the document is shown.
3. Press the **arrow keys** ← → ↑ ↓ on the keyboard to move the cursor through the document.
4. **Ctrl-Home / Ctrl-End**: moving the cursor to the beginning/end of the document.
5. **Page Up / Page Down**: moving you to previous/ next page.

1.2.4 Selecting Text:

1. **Select a paragraph**: you can simply triple-click anywhere within the paragraph.
2. **Select a Word**: you can simply double-click anywhere within the paragraph.
3. **Select all text**: to select all features is a quick way to highlight all of the text within the entire document. From keyboard press **Ctrl+a**.
4. **Select text using click + Shift Key**: Click to place the insertion point in front of the text that you want to select, then press and hold the shift key on your keyboard, then click with the mouse pointer at the end of the range of text that you want to select.
5. **Select non-subsequent text using ctrl key**: Highlight the text that is to be modified then press and hold the Ctrl key on your keyboard, then highlight the additional text that is to be modified.

1.2.5 Moving Text:

To move text from place to another, select the text you want to move then press and hold down the left mouse button over the selected text; then drag the pointer to the new location, and release the mouse button to drop the text in that location.

1.2.6 Saving a Document:

3.2.2 To save your document:

1. Form **File Button** select **Save** or **Save As**: for the first time there's no difference between them, both allow you to save your document in the place you want and the name you choose, for the next times there's a difference. Save As: make a

new copy from document and leave the original document as it while Save: save the currently processing document over the original after updated.

2. From Quick Access Toolbar *save* icon. 
3. From Keyboard Press *Ctrl+s*.

Tip: Word Document Extension

Word documents usually saved with *extension* doc (*.doc), you can save your document with another extensions such as html, txt...etc

1.2.7 Closing a Document:

To close your document, you can follow one of these ways:

1. Click the Close  *button* in the document window. If you have edited the document since saving it last, Word asks whether you want to save it, click the Yes button to save your changes, and the document will close.
2. From *File Button* select *Close*.

TIP: Close and Exit

There is a difference between Close and Exit commands. Close means that you want to close the document you working on but you want to keep Microsoft Word 2016 running. While Exit close both the document and the program.

3.3

1.2.8 Opening a Document:

To open a preexisting document, you can do one of the following:

1. From *File Button* Menu select *Open*.
2. From Quick Access Toolbar *open* icon 
3. From Keyboard Press *Ctrl+o*.

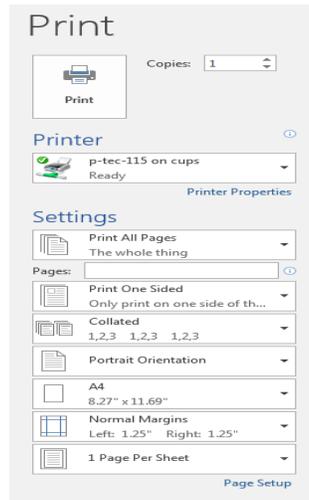
1.2.9 Previewing and printing a Document:

It's always better to check your document before you print it, print preview command enable you to see how pages in document will be look like and let you do your formatting instead of doing a lot of printing and waste many papers and ink. To preview your document:

1. From *File Button* select *Print*.
2. From Quick Access Toolbar *preview and print* icon 

3. From Keyboard Press **Ctrl+P**.

Word makes printing a document easy and enables you to select the printer and font settings. You can print the whole document, a single page, specific page ranges, specific separate pages, or selected text. You can also specify the number of copies to print and collate the copies as you print. To print your document, do one of the following:

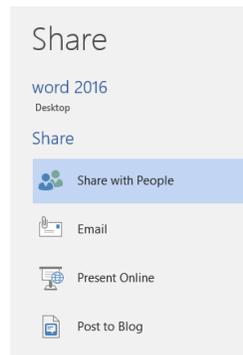
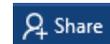


1.2.10 Sharing a Document:

In Word 2016 for Windows, it's easier than ever to share your documents. When you share your files using OneDrive or Office 365 SharePoint, you can invite people to the document from right within Word, or send a PDF or Word file as an email attachment. To share your document:

1. From **File Button** select **Print**.

2. From Quick Access Toolbar select **share**



2 . Editing Document

There are many ways to edit documents. You can cut, copy, or paste text or objects, or overwrite them. Making mistakes in Word is not a big deal, you can undo these changes and if you change your mind you can redo them.

Finding and replacing text can be so hard, searching the document by you or replacing Word by Word is not an easy job especially if we talk about large documents, grammar and spelling mistakes need to be correct, in this part you will be able to do all these things easily without needing so much time.

2.1 Cut, Copy and Paste:

It's important to understand the difference between cut and copy. When you cut text, you remove it from its original location and place it in a new location. While copying text makes a duplicate text that can be placed in a new location, the original text remains in its primary location. Paste simply places the text you cut or copied in the new location that you specified. To apply these in Ms-Word Highlight the text to do the following:

1. Cut:

- From **Clipboard** group in **Home tab** use  , or use **Ctrl+x**, or after right-click select **Cut** from context menu.

2. Copy:

- From **Clipboard** group in **Home tab** use  , or use **Ctrl+c**, or after right-click select **Copy** from context menu.

3. Paste:

- From **Clipboard** group in **Home tab** use  , or use **Ctrl+v**, or after right-click select **Paste** from context menu.

TIP: When Cut, Copy, Paste be inactive

For the first time when you open **MS-word 2016** document to begin processing, cut, copy and paste will be in inactive state. Copy and cut convert to active state when the text highlighted. After select copy or cut, paste becomes active too.

When cut, copy, and paste comeback to inactive state?

2.2 Overwriting or delete:

Sometimes you will need to modify or delete text in a document. You can do these by many ways but the easiest is to overwrite text or delete it with the Delete command. Overwriting replaces the existing text with new text as you type while deleting completely removes the text from the document.

1. Overwrite:

- Highlight the text that you want to overwrite.
- Start entering the new text.

2. *Delete:*

- Highlight the text that you want to delete.
- Press the *delete key* from keyboard.

TIP: Backspace and Delete

You can use either backspace or delete to remove text completely from your document. Backspace key delete characters to the left of the insertion point while the Delete key delete characters to the right of the insertion point.

2.3 Undoing and Redoing Changes:

Word provides an easy way to undo or reverse many of the actions you made. It also provides an easily way to redo actions that you have been recently undone.

1. **To Make Undo** you can do one of the following:

- From ***Undo icon*** on quick access toolbar. 
- Or from keyboard use ***Ctrl+z***.

2. **To Make Redo** you can do one of the following:

- From ***Redo icon*** on quick access toolbar. 
- Or From keyboard ***Ctrl+y***.

TIP: Undo/ Redo More than One Action

To ***Undo*** or ***Redo*** more than one action you can repeat the command or simply click the arrow that appear next to ***Undo/ Redo*** and choose from the list the actions that you want to Undo or Redo.

2.4 Finding Text:

When you are working with a long document it can be time consuming to find a specific word or words. The find feature will help you locate specific text within document. To find a specific text, you can use one of these methods:

1. From **Editing** group in **Home tab** select **Find**  **Find**, In the **Find what field**, type the word you want to locate. Click **Find Next button** until you locate the appropriate occurrence of the word you are searching for.
2. Or **Ctrl+f** from keyboard, In the **Find what field**, type the word you want to locate. Click **Find Next button** until you locate the appropriate occurrence of the word you are searching for.

2.5 Replacing Text:

Similar to the find feature, the replace feature will perform a search for a specific word and replace it with another word. To replace a specific text, you can use one of these methods:

1. From **Editing** group in **Home tab** select **Replace** . In the **Find what field**, type the word you want to replace and in **Replace with field** type the word that you want to use as a replacement. Click **Find Next button** until you locate the appropriate occurrence of the word you are searching for. Click **Replace button** if you want to use the replacement word instead. Click **Replace All button** to replace all matching words.
2. Or **Ctrl+f** from keyboard, In the **Find what field**, type the word you want to replace and in **Replace with field** type the word that you want to use as a replacement. Click **Find Next button** until you locate the appropriate occurrence of the word you are searching for. Click **Replace button** if you want to use the replacement word instead. Click **Replace All button** to replace all matching words.

TIP: Replace All

Replace All Button can be very helpful, but sometimes the replace all button will prompt ***MS-word*** to replace variations in the document that might not have occurred to you. For example, if you try to replace "Form" with "From", words such as "Formula" will become "Fromula" and "Transform" will be "TransFrom".

2.6 Using Autocorrect Options:

AutoCorrect corrects common errors as you type, such as misspelled words and incorrect capitalization. When you install MS-word the AutoCorrect feature is turned on by default. AutoCorrect includes many default entries that represented a list of common typing errors. To use Autocorrect do the following:

1. Click the **File button**
2. Select **Word Options**
3. Click **Proofing** in the left pane
4. Click the **AutoCorrect Options** button
5. Select the **AutoCorrect tab**.
6. Examine the check boxes.
7. Scroll down and examine the default entries listed under **Replace and with**. This list represents commonly used symbols and typing mistakes.
8. If you consistently make an error that is not included in the list, you can create a custom entry. In the **Replace field**, type the word you often misspell.
9. In the **with field**, type the correct spelling of the word and click the add button.
10. Click Ok. Now when you type the word incorrectly, Ms-Word will automatically replace it with the customized correction.

2.7 Checking Spelling and Grammar:

You may search the document for the spelling and grammar errors. When MS-Word finds a possible error, you can correct it and continue your search. To check spelling and grammar in your document follow the steps below:

1. Click to place the insertion point at the beginning of the document.
2. Click the **spelling and grammar button**  in the **Proofing group** in **Review Tab**. This will open MS-Word's dictionary and automatically begin searching for possible spelling and grammatical errors.
3. If **Ms-Word** flags something that is correct, click **Ignore Once** to force the spell check to proceed to the next potential error or **Ignore All** which will skip every instance of the word in the document.
4. To correct a spelling error, click on the correct spelling from the list of suggestions and then click Change. You may also type in your own changes in the top window within the Spelling and Grammar dialog box and click Change.
5. To close the dictionary, click the close Button.

3 . Formatting Text

There are many ways to format documents in Microsoft Word. For example, you can change the font, font size, and font color; highlight the text; add a border, shade the background, adding bulleted lists, numbered lists, and indenting text.

This part will show many tools that will make your text nice and well arranged.

3.1 Changing Text Font, Size, color, and Shading:

A font is a set of all characters available in one typeface and size, including uppercase letters, lowercase letters, punctuation, and numerals. To change the appearance of text, you may change the font as well as font style. Be sure to choose a font that is legible and practical. To change do as shown below:

1. Highlight the text that is to be modified.
2. After right-click select **Font** from context menu.
3. Specify the font typeface, size and color and then click ok.

You can also change the font Typeface, size, and color from **Font group** in **home tab** by using the following icons.



3.2 Applying Bold, Italic and Underline:

You can change also font style (Bold, Italic, Underline) as shown below:

1. Highlight the text that is to be modified.
2. After right-click select **Font** from context menu.
3. Specify the whether you want it italic, bold, underline and then click ok.

You can also change make this from **Font group** in **home tab** by using the following icons.  Where **B**: Bold, **I**: italic and **U**: underline

3.3 Applying Font Effects:

From **Font group** in **home tab** by using the following icons.

 Which:

- **abc**: Draw line through the middle of the text.
- **X₂**: subscript (create small letters below the text base line).
- **X²**: subscript (create small letters above the text base line).

3.4 Copying Formatting:

If you want to copy character formatting this tool will be very helpful.

1. Highlight the text that contains the formats you want to copy.
2. Click the **format Painter button** in the standard toolbar. 
3. Click, hold and drag the paintbrush mouse pointer over the text you want to format.

4 . Formatting paragraph

4.1 Changing Alignment:

To change alignment, Highlight the text that is to be modified and Click the desired alignment button:

1. Align Right  : with right alignment the right side of the paragraph is aligned with the right margin or indent.
2. Align Left  : Left alignment is word's default alignment for body text. The Left side of the paragraph is aligned with the right margin or indent.
3. Center  : with center alignment, each line of paragraph is centered between the left and right margins or indents.

4. Justify : with justified alignment the paragraph is aligned with both the left and right margins or indents.

4.2 Adding Numbers and Bullets Lists:

1. Select the words you just typed.
2. Choose the Home tab.
3. In the Paragraph group, click the down arrow next to the Bullets button  or numbering . The Lists Library appears.
4. Click to select the type of style you want to use. Word adds styles to your list.

Note: As you move your cursor over the various Lists styles, Word displays the bullet style onscreen.

4.3 Change paragraph indent, direction, line spacing, shading, and border:

You can also change all of the above from **Paragraph group in home tab** by using the following icons.



4

5 . Formatting Documents

There are many techniques for formatting document in Microsoft Word. For example, pictures, symbols, charts and other objects can be inserted to enrich documents, you can also insert a page break and start text on a new page, insert a section break and have double columns in your document, in addition to these formatting techniques; you can change your page margins.

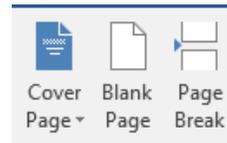
Furthermore, finishing touches, such as page borders, page numbers, headers and footers...etc, can be used to enhance your document.

5.1 Insert pages

From **Insert tab** you can insert:

1. cover page: fully formatted cover page, you fill the title author, date, and other information.
2. blank page: insert a new blank page in the courser position
3. Page break: star the next page at the current position of the courser.
To force text to be on the top of the following page, you may insert a manual page break. As you edit the document, you may have delete and reinsert page breaks depending on the flow of text. It may be

helpful to wait until you are in the final stages of formatting your document. To insert manual page break:



5.2 Tables:

A table is a grid that is made up of columns and rows. The intersection of a column and a row is called a cell. Gridlines are the lines within the table that separate each column and row. Tables are much more effective than tabs for aligning information in columns and rows.

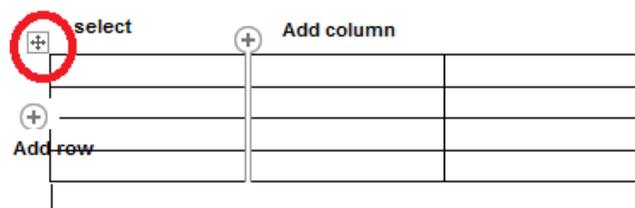
1. To Insert Table:

- From the **Insert tab**, trace to **table** and select **Insert table**.
- Specify the Number of columns and Number of rows.
- Click OK.

2. Insert a Row or Column:

- **Select** row or column.
- Right click on mouse then select to **Insert** and select one of the following (Table, Columns, Rows, or Cells).

Note: you can insert by Click to place your insertion point where you want to insert a row or column. Then Click on plus icon to insert row and column in certain place.



3. Delete a Row or Column

- **Select** row or column.
- Right click on mouse then select to **Delete** and select one of the following (Table, Columns, Rows, or Cells).

4. Table Design

Select the table then use the Table **Design** Tab to change the Table Style



5. Text Direction

- The text direction command will change the orientation of text within a cell.
- Right-click the cell and select **Text Direction**.
- Click to select the desired **Orientation**.
- Click **OK**.

6. Merging Cells

- The merge cells command will combine multiple cells into one cell.
- Select the cells you want to merge together.
- From the **Table** menu, select **Merge Cells**.

Note: table can be inserted to the document in many ways, one by menu, and another by **drawing table's** icon.

5.3 Inserting Picture:

1. Insert Picture from File:

- Click where you want to insert the picture in your document.
- From **Insert** tab go o **Illustration group** and click **Insert picture Icon**.

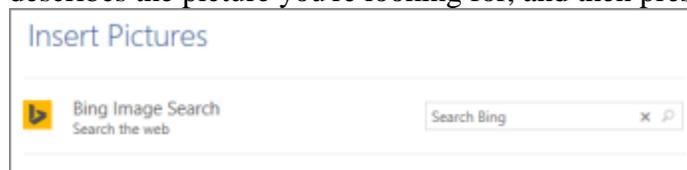


- Navigate to the folder or disk drive where the image is stored and then click to select the picture you want to insert and click **insert**.

Now try to resize your picture and move it to another place, can you?

2. Insert online Picture: inserting a picture from an online source like Bing.

- Click where you want to insert the picture in your document.
- From **Insert** tab go o **Illustration group** and click **Insert Online Pictures**.
- In the **Bing Image Search box**, type a word or phrase that describes the picture you're looking for, and then press ENTER.



- In the list of results, click an item, and then click **Insert**.

5.4 Inserting Date:

1. Click to place the insertion point where you want to insert the date.
2. From **Insert** tab, select **Date and Time** from **text group**. 
3. Click to select one of the desired available formats.
4. If you want the date to be automatically updated to the current date each time you open the document, click to select the **Update Automatically Checkbox**, and then click Ok.

5.5 Inserting Symbols:

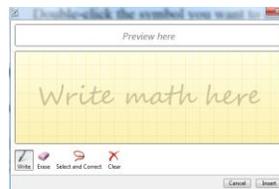
The Symbol command enables you to insert special characters, international characters, and symbols such as the registered trademark (®) and trademark (™) symbols. You can easily add these and other special characters to your Word documents.

1. Click to place the insertion point where you want to insert the date.
2. From **Insert** tab, select **Symbol** from **Symbols group**. 
3. Double-click the symbol you want to insert into your document then **Close**.

5.6 Inserting Equations:

The Equation command enables you to insert Equation:

1. Click to place the insertion point where you want to insert the date.
2. From **Insert** tab, select **Equation** from **Symbols group**. 
3. Select insert equation then type a math equation.
4. Or Select a Ink equation to hand write a math equation.



5.7 Insert WordArt:

WordArt can be added to your document using a button on the *Insert* command tab.

1. From the Insert command tab, in the Text group, click 

The *WordArt Gallery* dialog box appears.



2. From the *WordArt Gallery*, select the desired style
The *Edit WordArt Text* dialog box appears.

3. In the *Text* box, type your text
4. To format your text, from the *Font* or *Size* pull-down lists, make the desired selections
5. To change the font style, click **BOLD** or **ITALIC**
6. Click **OK**, your WordArt is placed in the document and the Format command tab appears.

5.8 Insert Shape:

1. On the **Insert tab**, in the **Illustrations group**, click **Shape**. 
2. In the Choose a Shape Graphic gallery, click **Hierarchy**, click a shape and then click OK.

5.9 Insert Smart Art:

1. On the **Insert tab**, in the **Illustrations group**, click **SmartArt**. 
2. In the Choose a SmartArt Graphic gallery, click **Hierarchy**, click a Smart art and then click OK.

To add your text to the chart objects, do one of the following:

- Click in a shape in the SmartArt graphic and type your text.
- Click [Text] in the Text pane and type your text.
- Copy text from another location or program, click in the Text pane, and paste your text.

5.10 Insert Chart:

1. On the **Insert tab**, in the **Illustrations group**, click **Chart**. 

2. In the Choose a Chart Graphic gallery, click **Hierarchy**, click an organization chart layout (such as Column Chart), and then click OK.

To add your text to the chart objects, do one of the following:

- Click in a shape in the SmartArt graphic and type your text.
- Click [Text] in the Text pane and type your text.
- Copy text from another location or program, click in the Text pane, and paste your text.

5.11 Insert Screenshot:

Screenshots are useful for capturing snapshots of information that might change or expire

On the **Insert tab**, in the **Illustrations group**, click **Screenshot**.



When you click the Screenshot button, you can insert the whole program window or use the Screen Clipping tool to select part of a window. Only windows that have not been minimized to the taskbar can be captured.

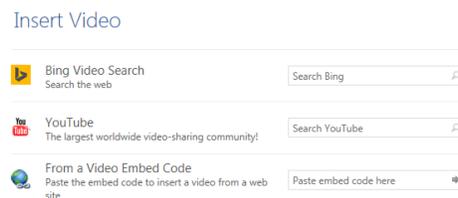
When you choose Screen Clipping, your entire window will temporarily become opaque or “frosted over”. After you select the part of the window that you want, your selection will show through this opacity.

Open program windows are displayed as thumbnails in the Available Windows gallery and when you pause your pointer over a thumbnail, a tooltip pops up with the program name and document title.

5.12 Insert Online Video:

To find and insert then online video from media YouTube or Bing.

1. On the **Insert tab**, in the **Media group**, click **Online Video**.



2. In the Bing Image Search box, type a word or phrase that describes the picture you're looking for, and then press ENTER.

3. In the list of results, click an item, and then click **Insert**.

5.13 Insert a Hyperlink:

Hyperlinks are words, icons, pictures, or other graphics that are used to navigate the Web. A hyperlink can take you to another location on the same Web page or to a different Web page.

1. Highlight the text you want to make a Hyperlink.
2. From the **Insert** tab in links group select **Hyperlink**. 
3. In the **insert Hyperlink window**, click to select **Existing File or Web Page**.
4. In the **Text to display field**, verify the text you highlighted appears (this is the text in
5. The document you want to associate the link to.
6. In the **Address field**, type the address of the Web page to which you want to link.
7. Click **OK**. The text within the document will change color and become underlined in order to be a recognizable link.

Use Hyperlinks

To use a hyperlink, the mouse pointer must become an icon of a pointing finger when it is placed directly on the link. If you insert hyperlinks into your document, you will need to educate your audience so they will know how to activate them.

1. Press and hold the **Ctrl** key on your keyboard and **click the hyperlink** simultaneously.
2. The linked file will open in its source application. After you click the hyperlink the color of the hyperlink changes indicating it has been used.

5.14 Insert a Bookmark:

A bookmark identifies a specific word, section, or place in your document so you can easily find it again without scrolling through the document. For example, you might create a bookmark to identify text that you want to revise later.

To add a bookmark, you first mark the location in your document you want to go to. After that, you can jump to the location or add links to it within your document. To insert Bookmark:

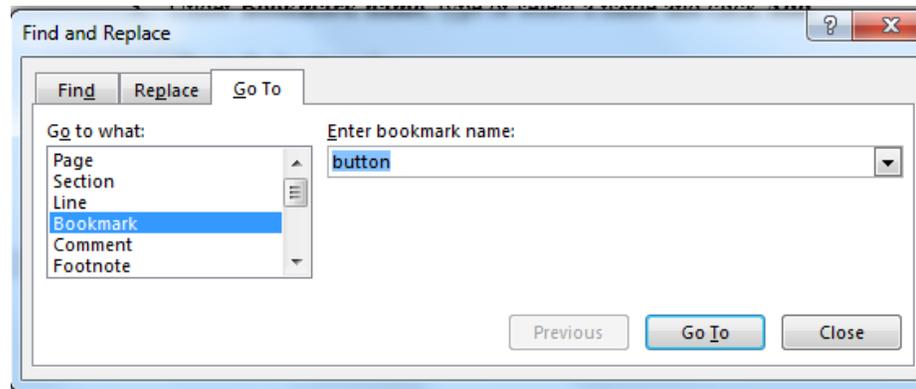
1. Select text, a picture, or a place in your document where you want to insert a bookmark.
2. Click **Insert** select Bookmark. 

3. Under **Bookmark name**, type or select a name and click **Add**.

Go to the bookmark

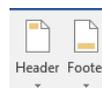
After creating your bookmarks, you can jump to them at any time or add links to them within your document.

4. Type Ctrl+G to open the **Go To** tab in the **Find and Replace** box.
5. Under **Go to what**, click **Bookmark**, select the bookmark name, and then click **Go To**



5.15 Inserting Header and Footer:

1. On the **Insert** tab, in the **Header & Footer** group, click **Header** or **Footer**.



2. Click the header or footer design that you want.

Change the Header or Footer for Part of the Document

You may use the same header and footer throughout a document or change the header and footer for part of the document. For example, you may want a unique header or footer on the first page of a document, or to use different headers and footers on odd and even pages.

1. First page:

- On the first page of the document, double click the header or footer area.
- Under **Header & Footer Tools**, on the **Design** tab, in the **Options** group, select the **Different First Page** check box.
- Create a header or footer, or make changes to the existing header or footer, on the first page.

2. Odd and even pages:

- Double-click in the header or footer area.
- Under **Header & Footer Tools**, on the **Design** tab, in the **Options** group, select the **Different Odd & Even Pages** check box.

Note: The existing header or footer is now configured for odd-numbered pages only.

3. Under **Header & Footer Tools**, on the **Design** tab, in the **Navigation** group, click **Next Section**  to advance the cursor to the header or footer for even-numbered pages, and then create the header or footer for even-numbered pages.

5.16 Inserting Page Numbers:

1. On the **Insert** tab, in the **Header & Footer** group, click **Page Number**



2. Click **Top of Page** or **Bottom of Page**, depending on where you want page numbers to appear in your document.
3. Choose a page number design from the gallery of designs.

6 . Design page

6.1 Add Watermark:

A watermark is text or a picture that appears behind the text in a document. Watermarks are often used to add graphics to document without obscuring or taking room away from text.

From the **Design** tab in **page background groups** press **watermark** and select **Custom watermark**.



1. **To insert a picture as a watermark:**

- Click the **Picture Watermark radio button**.
- Click Select **Picture button**.
- Navigate to the folder or disk where the image is stored.
- Click to select the picture that you want to insert.
- Click **Insert**.
- Click **Ok**.

2. **To insert text as watermark:**

- Click the **Picture Watermark radio button**.
- Click Select **Text button**.
- Enter the text that you want to include as a watermark.
- Select any additional desired options (Font, Size, or Color).
- Under Layout, specify if you want the watermark to be Diagonal or Horizontal.
- Click **Ok**.

Tip: Viewing Watermark

To see watermark you must be sure that your document is in Print Layout View.

6.2 Add Page Color:

To add a Color for the whole page:

1. From **Design** tab in **Page Background** groups select **Page Color**



2. select the desired color.

6.3 Add Page Border:

To add a border for the whole page:

1. From **Design** tab in **Page Background** groups select **Page Border**



2. Click to select the desired setting, style, color and width ...etc.
3. In the **preview pane**, verify your selections and then click Ok.

7 . Page Layout

7.1 Inserting Section Break:

Sometimes sections of long documents must be formatted differently. In order to setup different formatting for different parts of the document, you must divide the document into sections. A section is all of the text between section breaks. To break a document into multiple sections:

1. Click to place the insertion point where you want to insert the section break.
2. From the **Page Layout tab** in **page setup groups** select **Break**.
3. Under **section break types**, click the option that describes where you want the new section to begin:
 - **Next Page:** inserts a section break and start a new section in the next page.
 - **Continuous:** inserts a section break and start a new section on the same page.
 - **Even / Odd Page:** insert a section break and start a new section on the next Even / Odd numbered page.
4. Click **Ok**.

Tip: Deleting a section Break

Formatting is stored in section breaks. When you delete a section break, you also delete the section formatting for the text above the (deleted) section break. As a result, text becomes part of the following section and assumes the formatting of that section when a section break is removed.

1. Click the **Show/Hide** button in the standard toolbar. 
2. Move the insertion point to the line below the section break code.
3. Press the **Backspace** key on your keyboard. If the insertion point is positioned in front of the section break code, press the **Delete** key on your keyboard.
4. Click **the Show/Hide** button again, to hide the codes.

7.2 Adding Columns:

1. Highlight the text that is to be formatted in columns.
2. From the **Page Layout tab** in **page setup groups** press **Columns** and select **more columns**. 
3. Click to select the desired **Number of Columns** or enter the number of columns.
4. Enter the desired column **Width** and **Spacing** between columns.
5. If you want a line between the columns, click the **line between checkbox**.
6. Click Ok.

7.3 Setting Page Margins:

You can adjust the top, bottom, left, and right margins for a single page or for your entire document. For example, you might need to fit a large amount of text on one page and therefore need to increase the margins for the document's printable area. To set your document margins:

1. From the **Page Layout tab** in **page setup groups** press **Margins** and select **Custom Margins**. 
2. Type the new margin settings (for example, 1 inch in the Left spin box and 1 inch in the Right spin box).
3. Click the OK button.

8 . References the documents

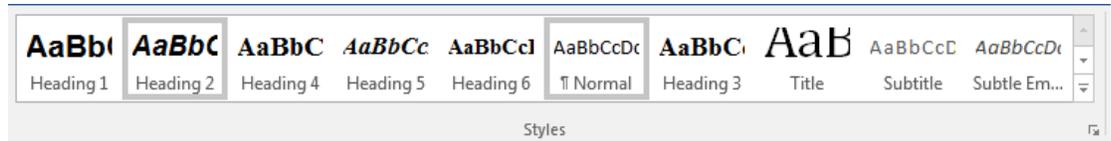
Now that you know how to edit documents, format text, and format your documents, it is time to do a little advanced work in Microsoft Word. In this part you will learn how to insert tables inside your document, create a table of content to your document and finally how to protect it.

8.1 Build a Table of Contents

To create a table of contents, you must apply heading styles (Heading 1 through Heading 9) to the headings that you want to include in the table of contents. Once you have applied the heading styles, you can build a table of contents.

To apply built-in heading styles:

1. Highlight the text that is to be included in the table of contents (topic heading, topic subheading, chapter title, etc.).
2. Apply a **Heading Style** (Heading 1 through Heading 9) from the Styles dropdown list in the **Home tab**.
3. Continue following steps 1 and 2 throughout the entire document applying a heading style (Heading 1 through Heading 9) to the text you want to include in your table of contents.



To Build the Table of Contents:

1. Click to place the insertion point where you want to insert the table of contents.
2. From the **References tab**, trace **Table of Contents**, and click **Insert Table of Contents**.
3. Click the **Table of Contents tab**.
4. Click to select additional options (Show page numbers, Right align page numbers, Tab Leader format, etc.).
5. In the Print Preview Pane, verify your selections.
6. Click **OK**.

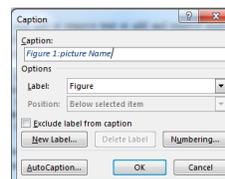
Update a Table of Contents

When you add or remove text or add and remove manual page breaks, the flow of the text on each page is subject to. As a result, you may need to update the table of contents to reflect changes to the pagination.

1. Place the mouse pointer directly on the table and contents, right-click and select **Update Field**.
2. Click to select one of the following: **Update page numbers only** or **Update entire table**.
3. Click **OK**.

8.2 Build a Table of Figures

To create a table of Figure, you must add captions for each photo in the document. From References select insert captions icon. then type picture name as bellow then press ok.



Once you have applied the Captions for all Figure. you can build a table of Figure.

To Build the Table of Figures:

1. Click to place the insertion point where you want to insert the table of contents.

2. From the **References** tab click **Custom Table of Figures**.
3. Click **OK**.

Update a Table of Figures

When you add or remove text or add and remove manual page breaks, the flow of the text on each page is subject to. As a result, you may need to update the table of figures to reflect changes to the pagination.

1. Place the mouse pointer directly on the table and contents, right-click and select **Update Field**.
2. Click to select one of the following: **Update page numbers only** or **Update entire table**.
3. Click **OK**.

8.3 Insert Endnote and Footnote

4.1 Footnotes and endnotes are used in printed documents to explain, comment on, or provide references for text in a document. You might use footnotes for detailed comments and endnotes for citation of sources.

1. click where you want to insert the note reference mark.
2. On the **References** tab, in the **Footnotes** group, click **Insert Footnote** or **Insert Endnote**.



8.4 Insert Citations and Bibliography

A bibliography is a list of sources, usually placed at the end of a document, that you consulted or cited in creating the document. In Microsoft Office Word 2016, you can automatically generate a bibliography based on the source information that you provide for the document.

Each time that you create a new source, the source information is saved on your computer, so that you can find and use any source you have created. To add a new citation to a document, you also create a new source that will appear in the bibliography



1. On the **References** tab, in the **Citations & Bibliography** group, click the arrow next to **Style**.
2. Click the style that you want to use for the citation and source.
3. Click at the end of the sentence or phrase that you want to cite.
4. On the **References** tab, in the **Citations & Bibliography** group, click **Insert Citation**.
5. Do one of the following:
 - To add the source information, click **Add New Source**.
 - To add a placeholder, so that you can create a citation and fill in the source information later, click **Add new placeholder**. A question mark appears next to placeholder sources in Source Manager.
6. Begin to fill in the source information by clicking the arrow next to **Type of source**.
7. Fill in the bibliography information for the source.

Create a bibliography

You can create a bibliography at any point after you insert one or more sources in a document. If you don't have all of the information that you need about a source to create a complete citation, you can use a placeholder citation, and then complete the source information later.

1. Click where you want to insert a bibliography, usually at the end of the document.
2. On the **References** tab, in the **Citations & Bibliography** group, click **Bibliography**.
3. Click a predesigned bibliography format to insert the bibliography into the document.

Exercises

1. Your mission is to prepare a letter to someone you know discussing five things you like about Birzeit University and three things you dislike about BZU. The contents of your letter can be fiction or nonfiction.
 - 1.1. Your name and address should be centered and in italics at the top of the page with a Comic Sans font of 14 points.
 - 1.2. Insert your e-mail address (if any).
 - 1.3. Insert today's date, align it right.
 - 1.4. The name and address of your letter's recipient should be left aligned with a Comic Sans font of 9 points.

- 1.5. At this point I would recommend saving your letter. Create a new folder on your student data disk called “BZU” and save this document as Word BZU in your Word exercises folder.
 - 1.6. The body of your letter should also use a Comic Sans font of 9 points.
 - 1.7. The first paragraph should contain the list of five things you like about BZU.
 - 1.8. The list should be numbered 1-5.
 - 1.9. Each item in the list must contain the phrase BZU
 - 1.10. The second paragraph should discuss three things you dislike about BZU.
 - 1.11. Each item should begin with a bullet.
 - 1.12. Each item must contain the phrase BZU.
 - 1.13. Close your letter with Sincerely, and your name left aligned at the bottom of the letter.
 - 1.14. Draw a smiley face at the bottom of the letter and colored it yellow.
 - 1.15. Put a border for the page and a beautiful background
 - 1.16. Check the spelling and grammar.
 - 1.17. Save your document again.
 - 1.18. Print your document.
2. Write an article to direct students to some Web sites so that they too can read about places of interest. And be sure to contain the following:
 - 2.1. The names of websites must be in word gallery with shadow, and 3D shape style.
 - 2.2. Insert a picture that express about each website.
 - 2.3. Any comments about any website must insert in a footnote. (You should insert at least one comment).
 - 2.4. Insert a suitable symbol beside each website.
 - 2.5. Insert table with a suitable Dimensions which contain the name of each paragraph and number of words in it.
 - 2.6. Insert a reference.
 - 2.7. The space between lines must be 1.5
 - 2.8. Insert a page number (at a top in Latin format).
 - 2.9. Write the comments in Arabic and English language.
 - 2.10. Write the date of writing this article in the header of the page and the day in the footer of the page (right).
 - 2.11. Make a table of contents for these paragraphs.

5 Experiment 4: References and Citation

5.1 Outcomes

5.2 Introduction

A citation is an entry of text that tells your reader where you got your information. Information like the author's name, the date of publication, the title of the document, page numbers, publishing information, what edition the source is, and a URL are often part of this entry. Essentially, your reader should be able to find your source on their own from the information in the citation.

5.2.1 WHEN DO I NEED TO CITE MY SOURCE?

Plagiarism is using another author's words, ideas, or work in print or speech as if they were your own. An author's original thought is protected as intellectual property under United States' copyright law, so plagiarism is essentially an act of fraud. To avoid plagiarism, you need to cite your source whenever you use anything you are borrowing from someone else. This includes using someone else exact wording, paraphrasing, an idea from another author, or even using a similar sentence structure. According to plagiarism.org, these are also considered plagiarism:

- failing to give credit when using or copying words or ideas from another author, including neglecting quotation marks
- giving inaccurate source information
- using so many words or ideas from another source that it makes up most of your work – whether you give credit or not

5.3 Footnotes and endnotes

The Merriam-Webster Online Dictionary defines a footnote as a note of reference, explanation, or comment usually placed below the text on a printed page. Footnotes are indicated by consecutively-numbered superscript Arabic numbers in the main text after the punctuation of the phrase or clause. Footnotes appear at the bottom of the page on with the superscript reference mark. A footnote can also have an associated citation at the end of the footnote text. Endnotes appear at the end of the document.

In each style, a reference mark appears in the body of the text, and a reference note (either a footnote or an endnote) containing a matching reference mark is used to document the reference

5.3.1 Adding footnotes or endnotes

Adding a footnote is a two-step process

Step 1: Adding the footnote reference mark in the body of the document

Place the cursor at the exact point in the sentence where the footnote reference mark should appear, after the punctuation. On the References tab, in the Footnotes group, click the Insert Footnote button. This places two reference marks. One reference mark is at the

cursor position in the body of the document; the other reference mark is in the footnote area at the bottom of the page.

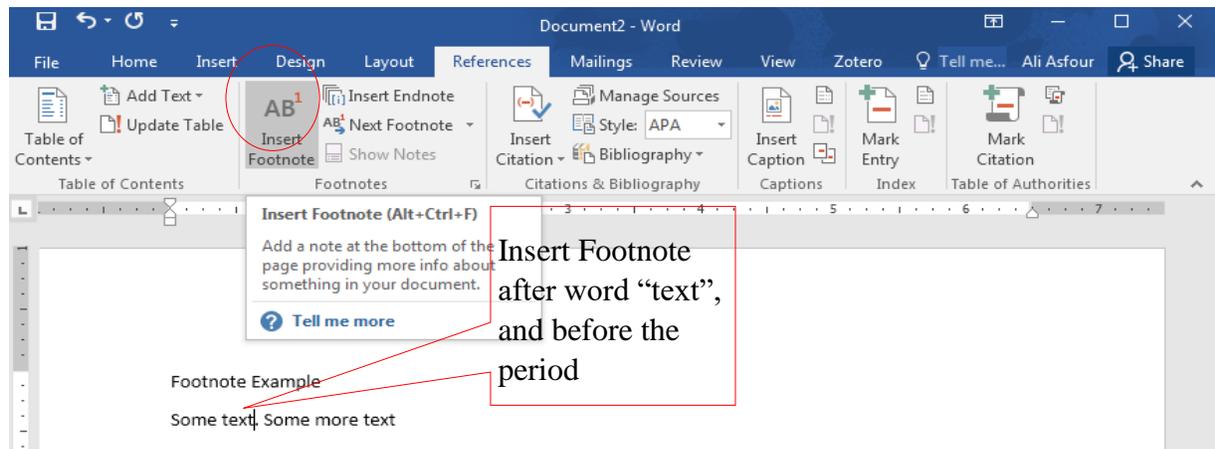


FIGURE 4. 1 INSERT FOOTNOTE

Step 2: Adding the footnote “text”.

When the reference mark is inserted into the body of the document, a placeholder for the footnote text is created at the bottom of the page on which the footnote should appear. To add the reference text into the footnote, click in the footnote placeholder and enter the desired text.

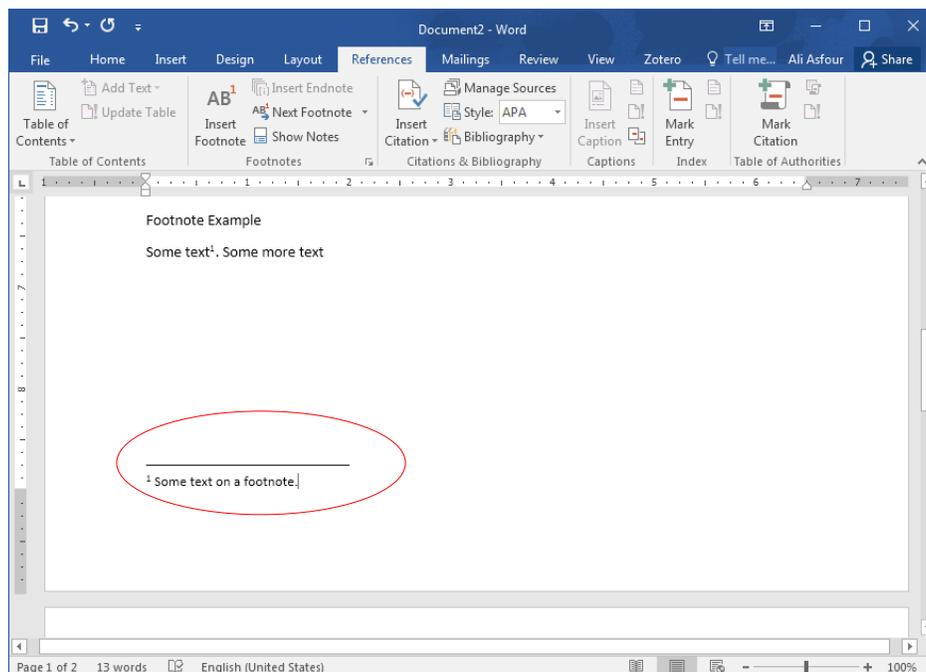


FIGURE 4. 2 ADD FOOTNOTE TEXT

To add another footnote, Repeat the How to add a footnote procedure above to add additional footnotes. To add an endnote, click the Insert Endnote button on the References tab and follow a similar procedure to adding a footnote. Endnotes and footnotes are handled the same within Word 2016, the only difference is the placement of the reference wording

5.3.2 Change the note number format

If you find that you need to change the number formatting style that is automatically applied to the footnote or endnotes text, you can do so after creating the notes.

1. On the References tab, in the Footnotes group, click the dialog box launcher (the small arrow in the lower right corner of Footnotes group)
2. Click either Footnotes or Endnotes from the location area at the top of the dialog box.
3. In the Number format area, select the format you want to use from the drop down list of choices and click the Apply button.

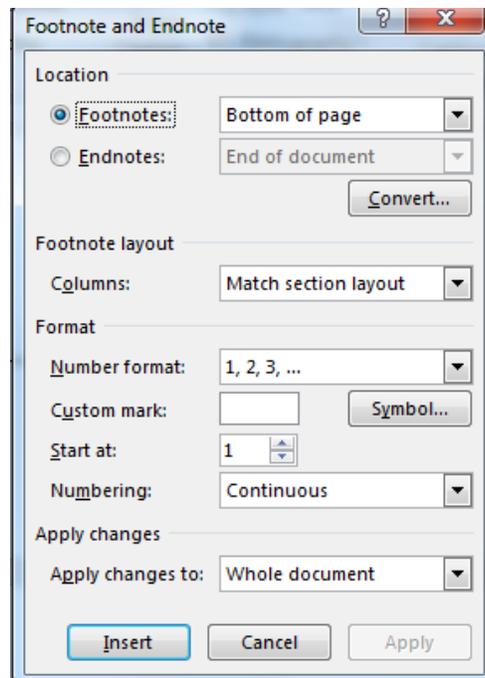


FIGURE 4.3 THE FOOTNOTE AND ENDNOTE DIALOG BOX

5.3.3 Change the footnote or endnote separator

If you need to change the footnote or endnote separator (the line above the reference text) or want to remove it completely, follow the steps listed below:

1. On the View tab, in the Document Views group, click Draft.
2. On the References tab, in the Footnotes group, click Show Notes.
 - a. If you used only footnotes in the document, this will open the Footnotes pane.
 - b. If you used only endnotes in the document, this will open the Endnotes pane.
 - c. If you used both footnotes and endnotes in the document, choose one of the reference areas to edit (View footnote area or View endnote area) in the dialog box that appears and click the OK button.

3. In the dropdown list in the foot notes / endnotes pane, select either the Footnotes Separator or Endnotes Separator depending on which one you want to modify or remove.
4. Delete the separator line, add in your own line, or leave the separator blank.
5. On the View tab, in the Document Views group, click Print Layout.

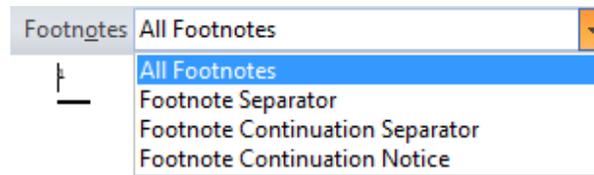


FIGURE 4. 4 EDIT FOOTNOTE AND ENDNOTE

5.3.4 Deleting footnotes and endnotes

Select (highlight) the footnote reference mark in the body of the document and press the Delete key. This will delete both the footnote/endnote reference mark in the body of the document and the associated footnote/endnote at the bottom of the page.

5.3.5 Browsing footnotes and endnotes

In lengthy documents with a large number of footnotes and/or endnotes, locating the reference marks in the document can be a challenge. Using the option available on the Ribbon, you can quickly navigate among the many reference marks in the document. To browse footnotes and endnotes, follow these steps:

1. Click anywhere in the beginning of the document.
2. On the References tab, in the Footnotes group, click the arrow to the right of the Next Footnote option.
3. In the drop down list, click the appropriate choice based on where you clicked in the document and the reference mark you are trying to locate.
4. The cursor moves into the document in the position of the footnote or endnote. Continue to click the Next option until you locate the necessary reference mark.

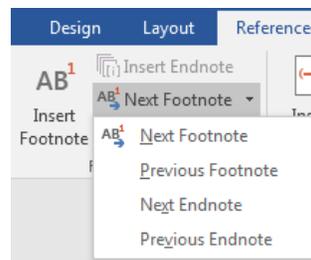


FIGURE 4. 5 BROWSING FOOTNOTES AND ENDNOTES

5.4 Captions

When adding images, tables, and other objects in your documents it is a good idea to label the objects with captions and reference them at some point in the document text. Although you

can complete these tasks manually, time is wasted updating references if the caption numbers change after adding or deleting images. Word has built-in automatic features to handle both these tasks.

5.4.1 Inserting figure numbers and captions

A caption is a numbered label inside a text box, such as Figure 1, that you can add to a figure, a table, an equation, or another object. If you later add, delete, or move captions, you can easily update the caption numbers all at once. To add captions to document objects, follow these steps:

1. Open a document that contains the object (image, table, etc.) you want to label or add one to an existing document.
2. Click once on the object to select it. Then, either:
 - a. Right click the object and choose Insert Caption from the context menu. –OR –
 - b. On the References tab, in the Captions group, click Insert Caption.

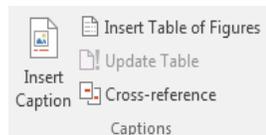


FIGURE 4. 6 FIGURE CAPTION

3. In the Label list, select the label that best describes the object, such as a picture or equation. In the Caption area, type any text, including punctuation that you want to appear after the label.
4. Select any other options you want from the Position list or the Numbering button.
5. Click the OK button when finished and the label is added to the object. Repeat steps 2-5 to add captions to any other objects in the document. Word will automatically number each additional caption.
6. To change any text inserted into a caption simply click once inside the caption and add or remove the necessary text.

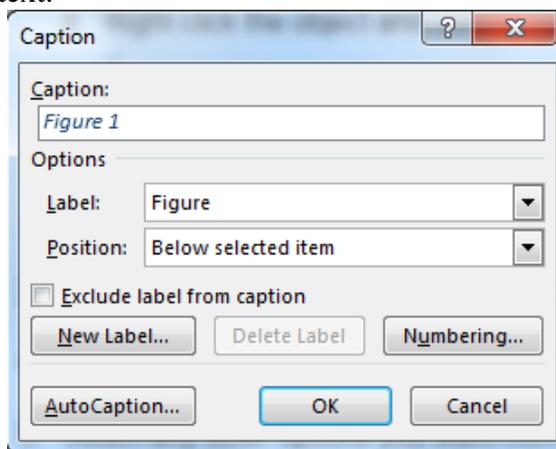


FIGURE 4. 7 CAPTION WINDOW

5.4.2 Deleting captions

You can quickly remove a caption from an object and then renumber the remaining captions to reflect the change. To delete a caption, follow these steps:

1. Determine if the caption is inside a text box or in-line with text.
2. Captions on images: Left click once inside the caption to activate the text box. Right click on the border of the caption (see the blue dotted line in Figure 13). Click Cut in the context menu that appears.
3. Captions on tables and equations: Simply drag across the selected text to highlight it and press the delete key on the keyboard.
4. If necessary, update the remaining captions in the document to reflect the deletion (see the section below).

5.4.3 Updating caption numbering

If you insert a new caption, Word automatically updates the caption numbers. However, if you delete or move a caption, you must manually update the captions. To update caption numbering, follow these steps:

1. Select a caption or captions to update. Do one of the following:
 - a. To update a specific caption, select it.
 - b. To update all captions, click anywhere in the document and press Ctrl+A to select the entire document.
2. Right-click, and then click Update Field in the context menu that appears.

5.4.4 Changing the caption style

The applied formatting for all captions in the document is based on the Caption style. For example, in the sample caption labeled Figure 1 found in Figure 13 above, the text is Times New Roman, bold, blue, and 9 point. You can change the applied caption style by following these steps:

1. On the Home tab in the Styles group, click the dialog box launcher.
2. In the list of available styles that appears in the Styles task pane, point to Caption, then click the small black down arrow at the right end of
3. Click the Modify... (see Figure 14) option in the list of available choices.
4. In the Formatting area, change the font face, size, color and style. The changes made in this area will automatically be reflected in all captions currently used in the document and any new ones you insert.
5. Click the OK button to apply the new caption formatting to the current document.

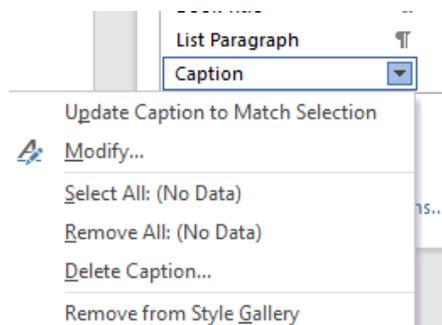


FIGURE 4.8 UPDATE CAPTION STYLE

5.4.5 Creating a table of figures

To create a Table of Figures:

1. Place the cursor after the word FIGURES.
2. From the References tab, from the Captions group choose Insert Table of Figures.
3. In the Table of Figures dialog box:
 - Check Show page numbers
 - Check Right align page numbers
 - Uncheck Use hyperlinks
 - Tab leader = dot (.....)



FIGURE 4.9 TABLE OF FIGURES OPTIONS

4. Under Caption labels, choose None. In this case, we want our Figures list to include any potential figures in the appendices — searching by label will only return figures in the main body of the text.
5. Click the Options button, check Style, and then select Figure Caption
6. Click OK, then OK again.
7. Save the file.

5.5 Citations and bibliography

If you need to write a research paper, chances are you'll also be required to include a **bibliography**. Or you might be asked to include a **works cited page** or a **list of references**. These are all just different names for the same thing: a list of **sources**—such as books, articles, or even websites—that you used to research and write your paper. A bibliography makes it easy for someone else to see where you found your information.

5.5.1 Choose a reference style

When you're creating a bibliography, you'll need to follow the guidelines of the required **style guide**. Different academic disciplines use their own styles guides, such as **MLA**, **APA**, and **Chicago**. Fortunately, Word comes with several **built-in** style guides; all you need to do is select the one you want to use, and Word will help you format your bibliography correctly.

To do this, click the **References** tab, then select the desired style in the **Citations & Bibliography** group.

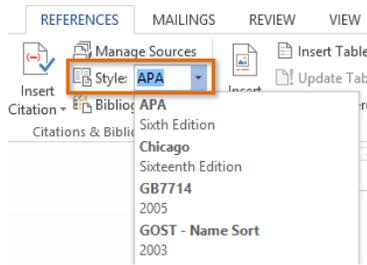


FIGURE 4. 10 REFERENCE STYLE

5.5.2 Add citations and sources

Whenever you use information from one of your sources, you'll need to give credit—or **cite** them. This is known as making a citation. You'll include citations whenever you use information from a source or when you quote a source directly.

To add a citation, select the desired location for the citation in your document, click the **Insert Citation** command on the **References** tab, and select **Add New Source**.

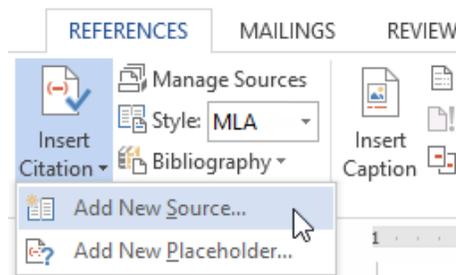
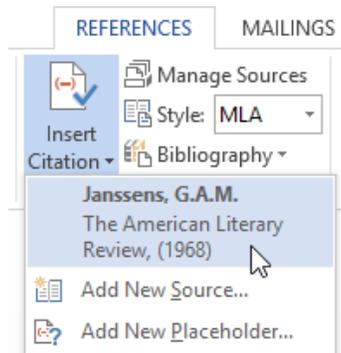


FIGURE 4. 11 ADDING NEW REFERENCE SOURCE

A dialog box will appear. Enter the requested information for the source—like the author name, title, and publication details—then click **OK**.

FIGURE 4. 12 REFERENCE DETAILS WINDOW

The citation will appear in the document, and the source will be saved. You can quickly add another citation for the source by clicking **Insert Citation** and selecting the source from the drop-down menu.

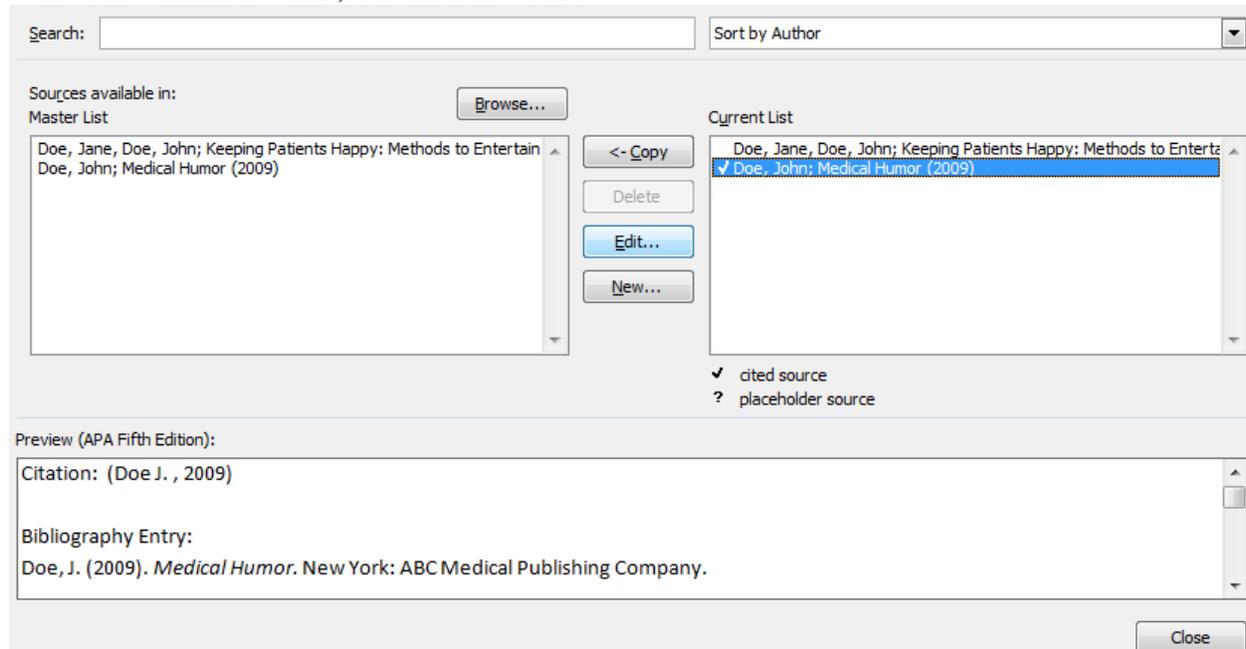


5.5.3 Editing source information

Editing that is already in the source management database is very easy.

Open the source management database. On the References tab, in the Citations & Bibliography group, click on the Manage Sources button to open the Source Manager dialog box.

For this example, let us assume that the publishing date for the book *Medical Humor* by Doe was incorrect. Instead of 2009, it should be 2005.



This will display the Edit Source dialog box, which allows editing the publication date of the source. Edit the Year field, then click the OK button.

Type of Source **Book**

Bibliography Fields for APA Fifth Edition

Author Doe, John

Corporate Author

Title Medical Humor

Year 2009

City New York

Publisher ABC Medical Publishing Company

Show All Bibliography Fields

Tag name Joh09

FIGURE 4. 13 EDIT REFERENCES

5.5.4 Insert the bibliography

Once you have added all of your sources, you can create your bibliography in just a few clicks! Just select the **Bibliography** command, then choose the desired style.

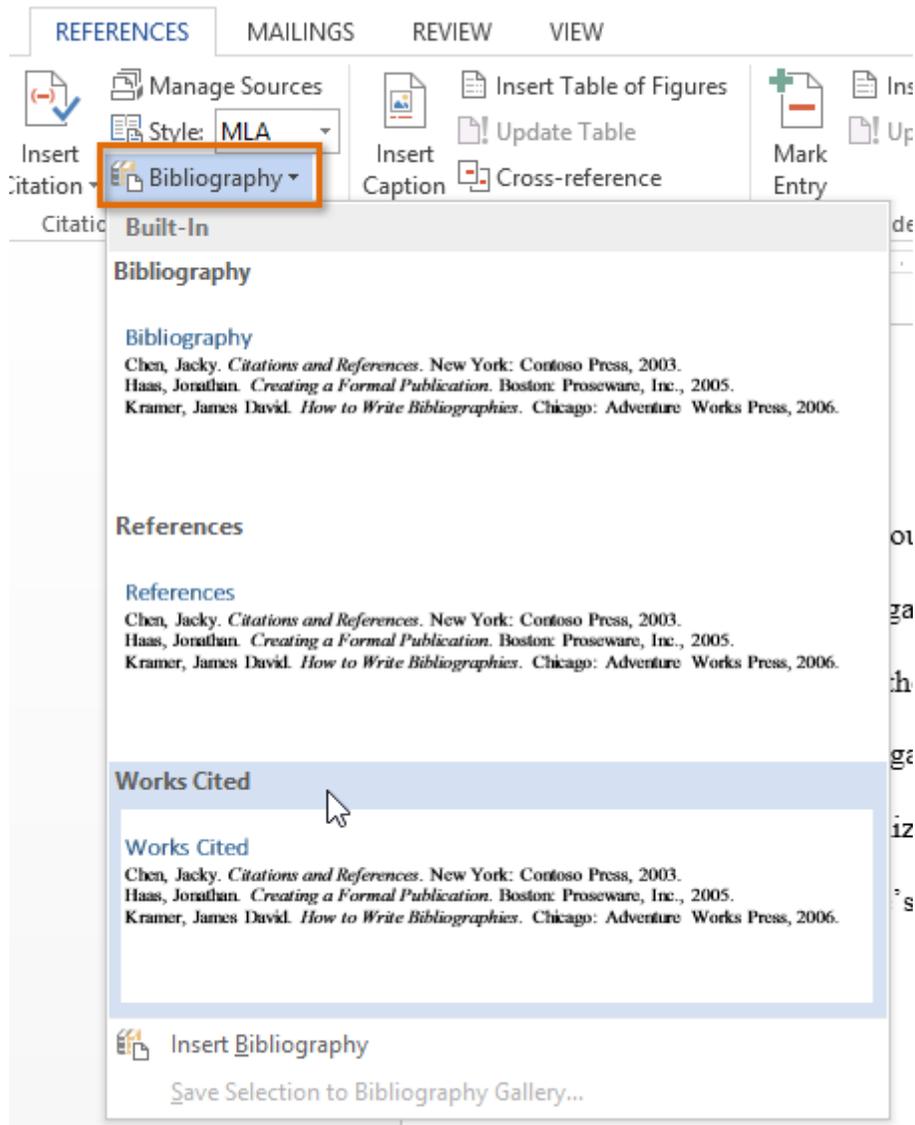


FIGURE 4. 14 INSERT BIBLIOGRAPHY

The bibliography will appear at the end of your document. Your sources will already be formatted to match the selected style guide. You should still double-check each of your sources against your style guide to make sure they're correct. If you need a quick reference for MLA, APA, or Chicago formatting.

If you add more sources to your document, you can easily **update** your bibliography—just click it and select **Update Citations and Bibliography**.

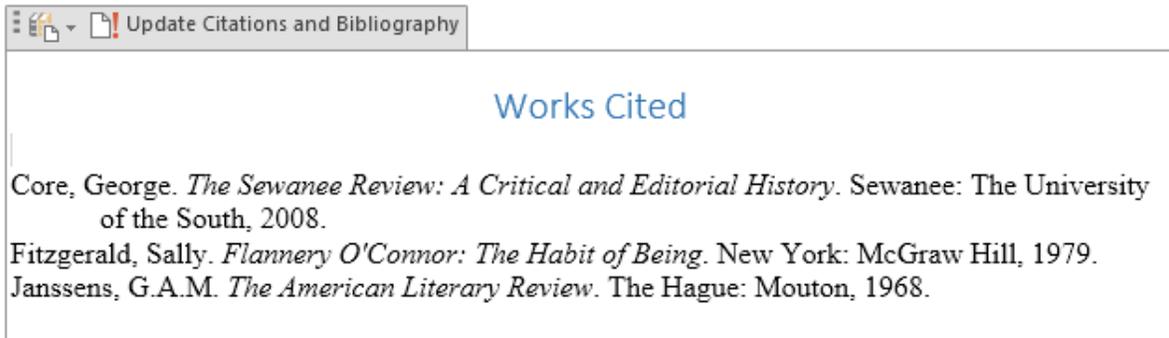
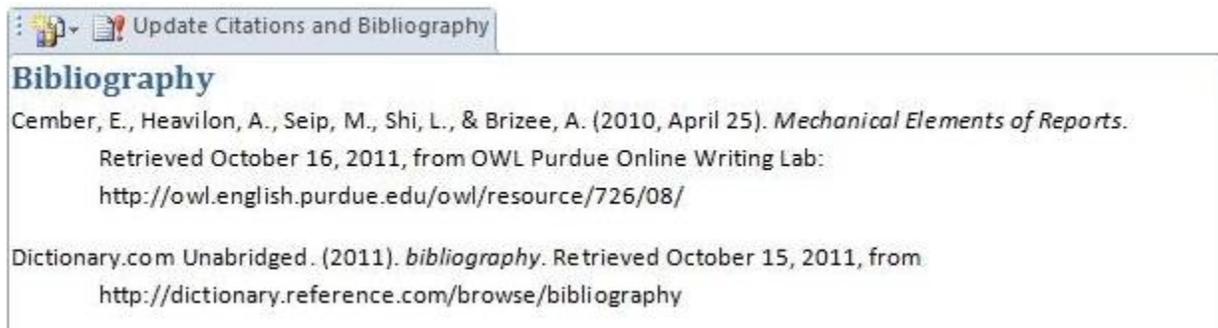


FIGURE 4. 15 LIST OF REFERENCES

5.5.5 Updating the bibliography or works cited page

Now that you have added a citation, you can update your bibliography or works cited page in the same way that you updated the table of contents. To do this, scroll to your bibliography page and use your mouse to click near the “Bibliography” or “Works Cited” heading. When the “Update Citations and Bibliography” tab appears, click it. Notice that your bibliography page automatically added the citation you created earlier and in the correct style format that you chose when setting up the bibliography in the first place.



5.6 Using Zotero to manage your citations

5.6.1 Introduction: What is Zotero?

Zotero is a research tool for managing online references. Developed by the Center for History and New Media at George Mason University, Zotero is a Firefox extension that provides users with automated access to bibliographic information for resources viewed online. Using “translators” for several hundred websites, online databases, and commercial sites such as Amazon.com, Zotero “senses” the bibliographic information contained in a web page and when the user clicks the Zotero icon gathers that information and places it in the user’s library of sources. In this way, online researchers can quickly and easily gather the information they will need later to review and cite references and create bibliographies. Zotero includes features to manage sources, and users can also manually enter sources. The result is a centralized location for gathering and storing references, significantly streamlining the research process.

5.6.2 Why Zotero?

As the quantity of online data and analysis has skyrocketed, and as access to those resources nears ubiquity, the tools to manage those sources have failed to keep pace. Research today takes

place at an ever-increasing pace, and having to record sources and organize references manually can be a considerable bottleneck. By automating the tasks of gathering, managing, and citing online references, Zotero and other online reference tools facilitate a more efficient research process. Formatting of citations is consistent, and typos and other mistakes common in a manual reference system are largely eliminated.

Centralizing all of a scholar's academic sources in a single location, and providing simple tools to annotate and manage those sources, also adds a new layer to the research process. The ability to cross-reference sources, assign tags and other information to them, and quickly search a library of sources has the potential to uncover unseen connections and patterns. Moreover, the timeline feature allows researchers to see the progression of scholarship on a topic over time.

5.6.3 Register for a Zotero account

1. Go to <http://www.zotero.org>
2. Click on **Register** (upper right corner of page) & fill out all the fields
3. Make a note of your username & password, and email your username (not your password!) to anouk.lang@ed.ac.uk
4. Log in to Zotero using your username and password

5.6.4 Install Zotero (add-on for your browser and MS Word)

1. Ensure you are using Firefox as a browser.
2. Go to <http://www.zotero.org> and click the big red **Download Now** button
3. You may need to allow Firefox to install Zotero. You may also get a dialogue box popping up; wait for the **Install Now** button to change from greyed-out to colored, then click it.
4. You'll need to close and restart Firefox to finish installation.
5. When Firefox restarts, you should see a Z in the upper right corner of your browser. Click this and your library should open in the bottom of the screen.



6. Now you need to log in to Zotero so that the version of your library that you see in the browser will sync with the cloud, which will allow you to access your references anywhere.

To do this, press the cog symbol at the top of the Zotero pane  (so about two-thirds of the way down the screen). Select **Preferences** Then **Sync**, put in your username and password, then **OK**.

7. To sync your library, click the green circular arrow at the top right of the Zotero pane (so about two-thirds of the way down the screen, at the right).



5.7 Collecting references

When you view a webpage with items that Zotero can collect, you will see the appropriate buttons added to your status bar, including:

Books 

Journal Articles 

Newspaper Articles 

Film 

5.7.1 ACTIVITY: DOWNLOADING A BOOK FROM GOOGLE BOOKS

1. Go to Google Books: <http://books.google.com/>
2. Type “History of Seattle” into the search bar and click on the first result.
3. Click on the book icon in the address bar and save the book to Zotero.
4. Look at the metadata that Zotero has captured for this record. Note that many fields, including “Place,” are empty. For sources with incomplete metadata (common in Google Books records), Zotero may be unable to automatically detect all data fields. These may require further record-keeping on your part.

5.7.2 Adding Existing PDFs to Zotero

Zotero makes it easy to manage the vast collection of PDFs you probably already have stored on your hard drive:

1. Click the green plus sign above the center panel in your Zotero window (you can also simply drag a file into the Zotero window).

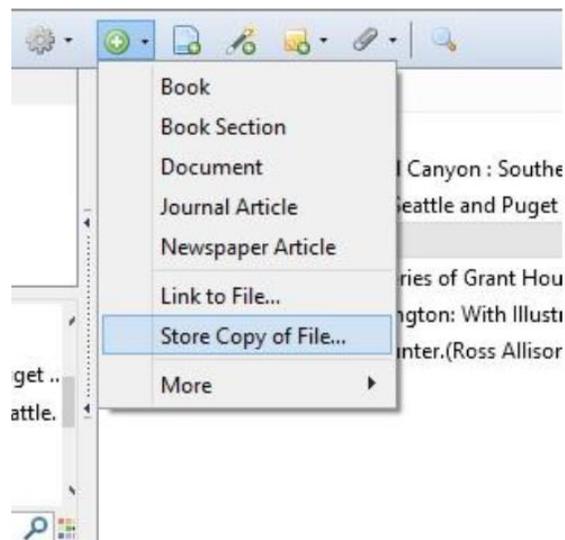


FIGURE 4. 16 ADD PDF TO ZOTERO

2. Select an article from your hard drive and drag it onto the center panel of your Zotero window.

5.7.3 Adding tags and notes

Tags are descriptive terms added to an item to make it more easily searchable. To add a tag, follow these steps:

1. select an item and click the tags tab in the right panel, then click add.
2. Select an item in your library, click on “Tags,” click “Add,” and enter a tag name
3. in the resulting box

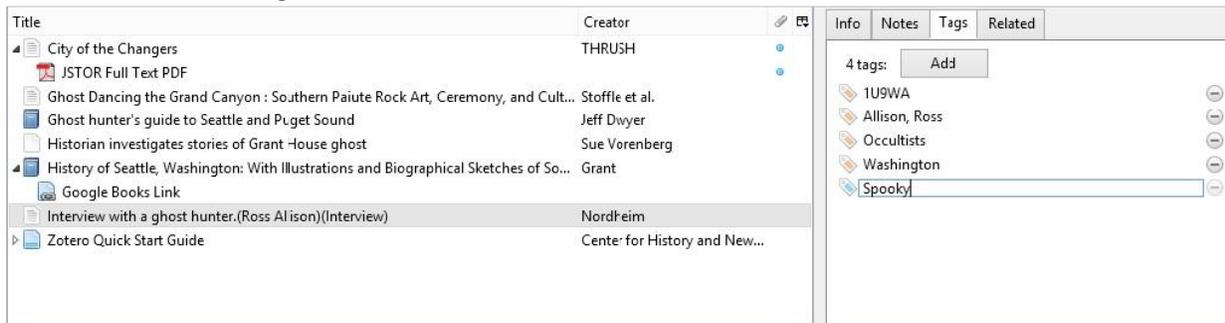


FIGURE 4. 17 ADDING TAGS AND NOTES

4. Select another library item and add the same tag.
5. Click on the tag you've added in the tag selector box in the left panel to see all items with that tag. You can then click the tag again to deselect it and return to the default view.

To add a note to a library item

1. right-click the item in the center panel and select “Add note,” or select the item in the center panel and go to “Notes” in the right panel, and click “Add.” This is a great place to put important passages/quotes from a source, which you can do while reading by enabling “edit in a separate window.”
2. From here, you can enter text that will not appear in your bibliography. Notes will appear when you click the triangle next to the item to which you have attached them.

5.7.4 Syncing your library

If you're using more than one computer in your research regularly, Zotero's sync feature can keep your library up to date on all of them. Zotero can store a copy of your library on the Zotero.org server and check it for updates whenever you open your library on a different computer. All your computers must be running the same version Zotero and be configured to sync to the server.

1. First, set up a Zotero.org user account at [Zotero.org/user/register](https://zotero.org/user/register). This is free.
2. Open Zotero preference (via the gear menu) and select the Sync tab. Enter your Zotero username and password

Note: you can choose Download files as needed to save bandwidth and disk space on devices where you don't require a full Zotero library synchronized.

3. Repeat this configuration on each of your computer. Any updates you make on one of your computers will be reflected on the other. This even works to s synchronize your library among Windows, Mac, and Linux computers.

5.7.5 Using Zotero in MS Word

5.7.5.1 Install the Zotero add-on for Microsoft Word

1. Go back to the Zotero website (<https://www.zotero.org/>) and press the **Download Now** button.
2. Scroll down and under where it says “Extend Zotero”, select the Microsoft Word plugins link.
3. Under the heading **Microsoft Word**, you will see **Windows** and **Mac** subheadings: select the relevant download link depending on your operating system.
4. Again, you’ll need to press **Allow** when the dialogue box pops up, and then wait for a second dialogue box to pop up with the **Install Now** button. Restart Firefox as requested.
5. Now start Microsoft Word, or close and restart it if it is already running. You will find your new Zotero buttons under the Add-Ins tab.

5.7.5.2 Using Zotero to insert in-text references

1. In Word, create a new document and fill it with some text.
2. Place your cursor at a point where you want a citation to appear, and press the leftmost button to insert a citation.



FIGURE 4. 18 IN TEXT REFERENCE

3. At this point you’re given the choice of citation style.
4. In the box that pops up, type a word that appears in one of the references you saved earlier. You should see the full reference appear as an option below the box.
5. Click on it, and you will see a blue bubble with a truncated version appear in the box.
6. At this point you can simply press return to add the citation to the document. Or, if you wish to add a page number or suppress the author’s name (because it is mentioned earlier in the body text), click the blue bubble to do one or both of those things.
7. If you wish to insert another citation, simply start typing a word from the author or title, and repeat steps 5 and 6.
8. Hit return twice and you will see the reference(s) appear in your document.
9. Another way to insert a reference, if you cannot remember a word from the title or author, is to press the **Insert Citation** button, click on the **Z** in the box and then select **Classic View**. This will bring up a dialogue box which allows you to browse your library.

5.7.6 Inserting in-text references and creates a bibliography in MS word

After you have finished inserting your references, you may want to create a bibliography or list of works cited. To do this:

1. position your cursor wherever you want the list of works cited to appear, and press the **Insert Bibliography** button. Figure 4.18

2. A list of all the works you have inserted as references is automatically generated, formatted in the output style of your choice. If you subsequently add in-text references or footnotes, the items will be automatically added to your bibliography. But if you delete an in-text reference or footnote, the item will remain in the bibliography unless you manually delete it.
3. If you click on a reference or an item in the bibliography, you will see that the item is greyed. MS Word pulls the data dynamically from your Zotero library, so if you alter something in Zotero in your browser, it will be automatically updated in MS Word. You can remove these codes, eg. before submitting a document to a publisher using the **Remove Codes** symbol (which looks like a broken link). Remember that once you do this, however, any updates you make to your Zotero library will not be reflected in the citations in the Word document.
4. Finally, there is another way to create a quick bibliography entry in Word. In Firefox, open the Zotero pane and right-click on the item you wish to refer to. Select **Create bibliography from item**, choose the citation style you want, and under **Output Method** select **Copy to clipboard** and then **OK**. You can then paste this directly into a Word document (or browser search bar, or anything that takes text input). Choose **Paste Special > Unformatted Unicode Text** if you don't want the double-spaced hanging indented formatting to which Zotero defaults.

5.8 Table of contents

A table of contents helps readers navigate the basic structure of a document. To simplify your document creation process, Word automates the generation of a table of contents. This feature allows you to easily and efficiently create and update a table of contents.

Before Word creates the table of contents, you must decide which material will be included and how it will appear. To indicate which elements should be included, you should designate each element using Heading styles. For example, a main section in your document may be labeled Heading 1 and all subtopic headings below it might be labeled Heading 2. Once the table of contents is generated, these heading and style designations will be reflected as levels in the table.

5.8.1 Adding section and subsection headings

The first step to successfully creating a table of contents in Word is to separate your document into logical sections. Some of the sections may also be divided into relevant subsections. Practice with a sample Word document using the steps listed below.

1. Open a document that contains multiple pages and paragraphs.
2. Take time to add appropriate main section headings and several subheadings throughout the document. Do not format the font appearance of the headings at this time. In Figure 17, you will notice the headings added above each paragraph.

What Is Books & Beyond?

Bookstore or Music Shop?

Some people say it is a bookstore. Some call it a music shop, while others think of it as a great place to meet and have refreshments. Books & Beyond has become a unique phenomenon that not only offers this area's largest selection of sale books, but has also branched into the world of music, with an inventory of CDs and tapes ranging from New Age to Alternative Rock and everything in between¹ What makes us different is our atmosphere. We encourage our visitors to relax with a book in one of our quiet rooms, or take some reading material into our Coffee and Juice Bar to read while snacking.

Food for Your Mind

Have you ever wanted to spend some quiet time away from home? Many of us find that solitude buried in the pages of a good book or lost in the sounds of musical instruments.

5.8.2 Applying heading styles (marking your document)

The second step of building the table of contents involves marking your document so Word knows what wording to use to build the table of contents. Word thinks of your section headings in a hierarchical manner. Heading 1 is used for the highest level of heading (e.g., page titles or main section areas). Heading 2, 3, and so on, up to 9, would be used to identify subheadings under your main heading. Keeping this structure in mind, format the headings and subheadings in your document with the appropriate styles by following these steps:

1. Click once anywhere within the first main heading that you want to assign to a style.
2. On the Home tab, in the Styles group, choose Heading 1 from the style gallery

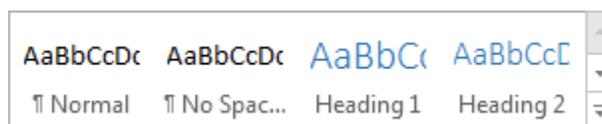


FIGURE 4. 19 HEADINGS

3. Repeat for each of your main section headings.
4. Then, format each of your section subheadings in the style of Heading 2 or Heading 3.
5. Continue to apply the appropriate heading style to each of your document section headings and subheadings. Note the highest heading level you use; you will need to refer to it when inserting the table of contents in the next section.

What Is Books & Beyond? ← Heading style 1

Bookstore or Music Shop? ← Heading style 2

Some people say it is a bookstore. Some call it a music shop, while others think of it as a great place to meet and have refreshments. Books & Beyond has become a unique phenomenon that not only offers this area's largest selection of sale books, but has also branched into the world of music, with an inventory of CDs and tapes ranging from New Age to Alternative Rock and everything in between.¹ What makes us different is our atmosphere (*see Figure 1*). We encourage our visitors to relax with a book in one of our quiet rooms, or take some reading material into our Coffee and Juice Bar to read while snacking.

Food for Your Mind ← Heading style 2

Have you ever wanted to spend some quiet time away from home? Many of us find that solitude buried in the pages of a good book or lost in the sounds of musical instruments. Maybe you want

5.8.3 Inserting the table of contents

Once you have appropriately formatted your document with headings using the various Word heading styles, you can add the table of contents at the beginning of your document. The table of contents will be built based on the heading numbers (styles) you have used throughout the document. These heading numbers are also referred to as levels. To insert a table of contents in your document, follow these steps:

1. Move to the page in your document where you want to add the table of contents. If necessary, insert a blank page.
2. Type in a page heading near the top of the page (e.g., Table of Contents).
3. Position the cursor below the page heading.
4. On the References tab, in the Table of Contents group, click Table of Contents.
5. Click Insert Table of Contents...at the bottom of the gallery.
6. In the Table of Contents dialog box (see Figure 20), choose a format from the General area in the lower left corner. Options include: Classic, Modern, Simple, and more. The choice you make here determines the initial appearance of the table.
7. In the Show levels spin box, choose the highest heading level (style) you want visible in the table. The number should correspond with the highest heading level used in the document.
8. Under the Print Preview area, check the boxes to "Show page numbers" and/or "Right align page numbers".
9. If necessary, choose a Tab leader from the drop down list.
10. Click the OK button and the table of contents is added to the page.

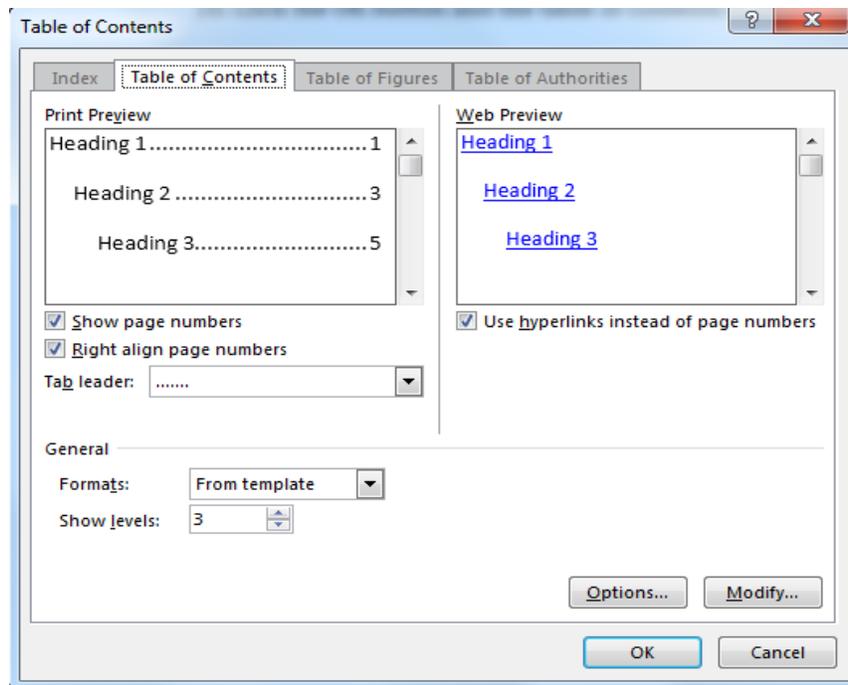


FIGURE 4. 20 INSERT TABLE OF CONTENT

5.8.4 Updating the table of contents

If you change the page numbers or headings in a document containing a table of contents, you have the option of updating the table of contents to reflect those changes. Follow these steps to change the document and automatically update the table of contents:

1. Make a change to one of the existing document section headings or subheadings. Or, insert/remove a section heading or subheading.
2. On the References tab, in the Table of Contents group, click Update Table.
3. Choose an option in the Update Table of Contents dialog box:
 - a. If only page numbers have changed in the document, select Update page numbers only (see Figure 21).
 - b. If headings have changed, select Update entire table.
4. Click the OK button.
5. View the page in the document that contains the table of contents. The changes in the heading and subheading text you made will be reflected in the updated table of contents.

5.9 Exercises

6 Experiment 5: Microsoft Excel 2016

6.1 Outcomes

- Create and save document to a specified area.
- Locate and open an existing document.
- Identify different tools, menus, Bars of excel file.
- Identifying parts of the worksheet (columns, rows, cells, labels, etc.)
- Identify the properties of cells, columns, rows.
- Format (delete, insert, select, move, copy, paste) cells, columns, sheets and rows.
- Use Auto Fill procedure.
- Identify cell reference.
- Create and write correct formulas.
- Identifying excel Error types.
- Identify functions of new icons like percentage, currency, and comma.
- Draw and format charts.

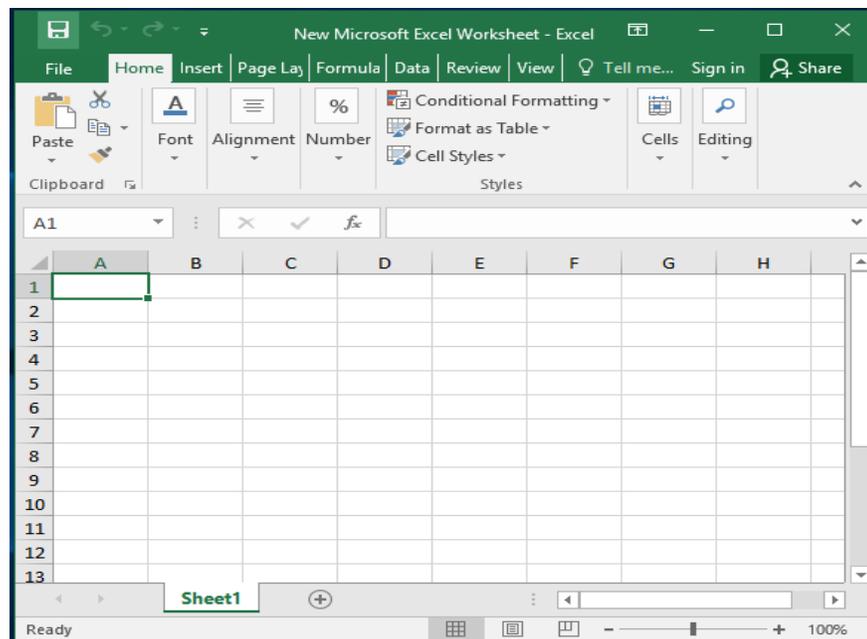
6.2 Introduction

Microsoft Excel is an excellent spreadsheet program for manipulating data. Excel has the tools to manage data and perform complex mathematical functions, which may otherwise take hours to complete.

However, the menu bar and shortcuts for Microsoft Word is nearly very similar to those for Microsoft Excel. Thus, this experiment will mainly concentrate on new things found in Excel.

When you come familiar with Excel basics, you will find it easy to learn and can be fun to use.

Excel Interface



Features of Excel

An Excel file is called a **workbook**. A workbook can contain one or more worksheets. For organizational purposes, it is helpful to separate different sets of data by using different worksheets. A worksheet consists of 256 columns and 65,536 rows, for a total of 16,777,216 cells per worksheet. The extension of excel is **xlsx**.

Parts of the Worksheet

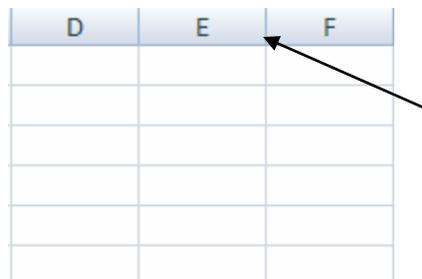
1. **Column** – A vertical group of cells in a worksheet. A letter ranging from A to IV identifies each column.
2. **Column Headings** – Sequential letters at the top of the worksheet.
3. **Row** – A horizontal group of cells in a worksheet. The row number identifies each row.
4. **Row Headings** – Sequential numbers along the left side of the worksheet.
5. **Cell** – Intersection of a column and row. Referred to by the column letter and then the row number. Example: A2
6. **Label** – Identifies information on the spreadsheet. For example a column might be labeled expenses.
7. **Value** – The raw data in a spreadsheet

6.2.1.1

- **Columns**

1.1 To change column width

1. Place the mouse pointer on the column heading divider line that divides the column that you want to change from its neighbor to the right.



2. When your mouse pointer changes to a two-way arrow, click, hold, and drag the column divider line to the right or left.
3. To change the width of multiple columns, click, hold, and drag through the column headings that you want to change (select non-adjacent columns by pressing and **Column Heading Divider Lines** holding the **CTRL** as you click). Then click, hold, and drag any divider line.

1.2 To insert a column

1. In the column heading area, right click on the column heading to the right of where you want to insert the new column
2. Choose **Insert**

1.3 Deleting a Column

1. To delete a column, in the column heading area, right click on the column heading that you want to delete.
2. Choose **Delete**

1.4 Hiding a Column

1. To hide a column, in the column heading area, right click on the column heading that you want to hide.
2. Choose **Hide**

1.5 Unhiding a Column

1. To unhide a column, select the two columns where the hidden column is situated between them.
2. Right click on the column heading then choose **Unhide**

1.6 Applying and Modifying Cell Formats (Currency, Percent, and Decimals.....)

1. Select the cell or range of cells.
2. Right click on the selected cells and choose **Format cells**.
3. Select the desired **Category**.
4. Click **OK**.

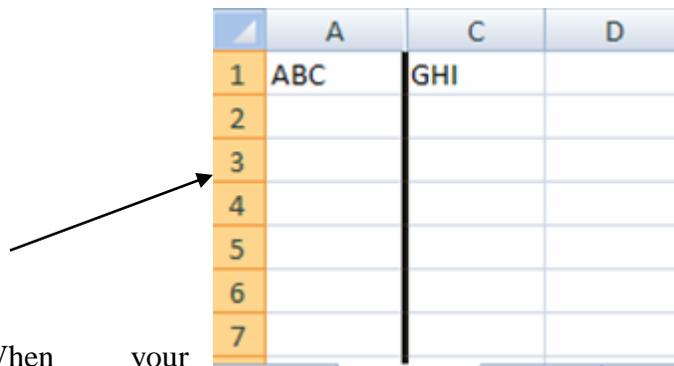
You may also choose from the **Home** menu the icon you want

- Currency Style. 
- Percent Style. 
- Increase/Decrease Decimal. 
- Comma style to remove currency, percentage symbols. 

2. Rows

2.1 To change Row Height

1. In the row heading area, place the mouse pointer on the divider line under the row you want to change.



The image shows a portion of an Excel spreadsheet. The columns are labeled A, C, and D. The rows are numbered 1 through 7. Row 1 contains the text 'ABC' in column A and 'GHI' in column C. Row 3 is highlighted in orange. A black arrow points to the vertical divider line between row 3 and row 4 in the row heading area.

	A	C	D
1	ABC	GHI	
2			
3			
4			
5			
6			
7			

2. When your mouse pointer changes to a two-way arrow, click, hold, and drag the row heading divider line up or down.
3. To change the height of multiple rows, click hold, and drag through the row headings that you want to change (select non-adjacent rows by pressing and holding the CTRL key as you click). Then click, hold, and drag any divider line.

2.2 Inserting a Row

1. Right click on the row heading below where you want to insert a new row and choose **Insert** from the shortcut menu box.

2.3 Deleting a Row

1. Right click the row heading of the row you want to delete and click **Delete** from the shortcut menu.

2.4 Hiding a Row

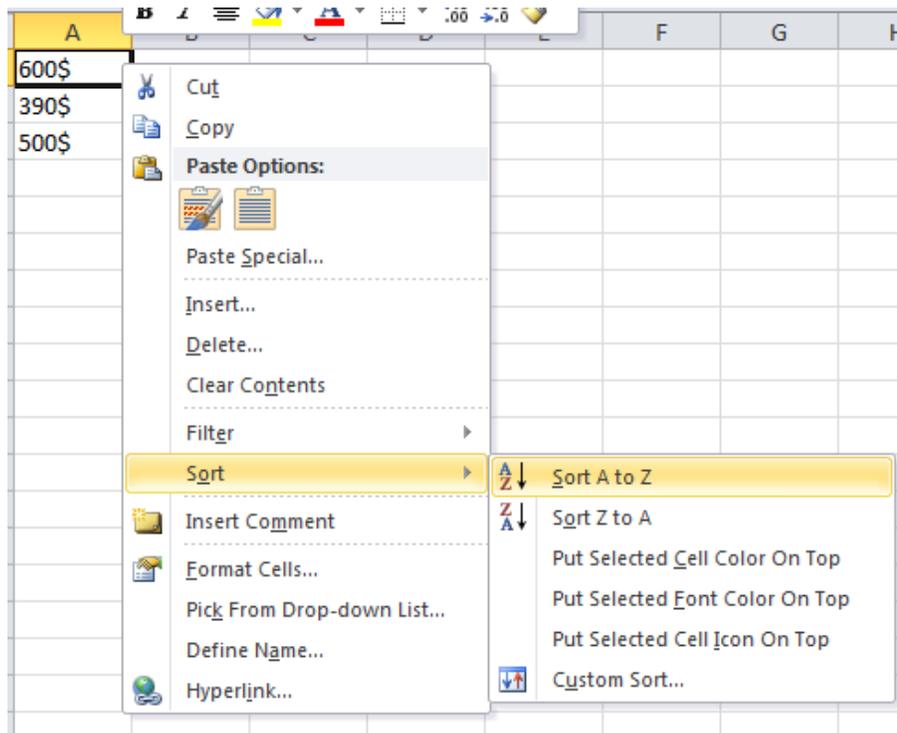
1. To hide a row, in the row heading area, right click on the row heading that you want to hide.
2. Choose **Hide**

2.5 Unhiding a Row

1. To unhide a row, select the two rows where the hidden row is situated between them.
2. Right click on the row heading then choose **Unhide**

2.6 Sorting

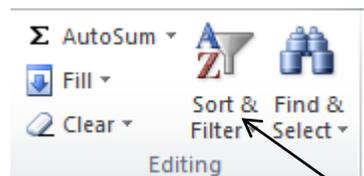
To Sort rows in **ascending** (A to Z) or **Descending** order based on the content of one column follow the steps shown in the figure



2. Right click on any

cell in the column you want to sort.

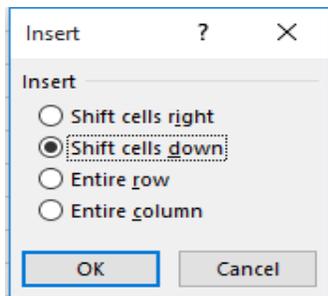
3. Choose **sort** then (**sort A to Z**) or (**sort Z to A**)
4. You can also use the sort icon in the **Home menu**



3 .Cells:

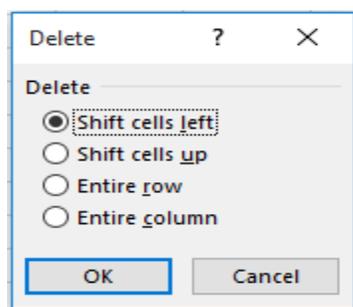
3.1 Inserting Cells

1. Click where you want to insert the cell or select a range of cells that you want to insert.
2. **Right-click** on the selected cell(s) and choose **Insert**. The Insert dialog box will appear.
3. Make a choice for how you want the cells to be shifted and click “ok”.



1.2 Deleting Cells

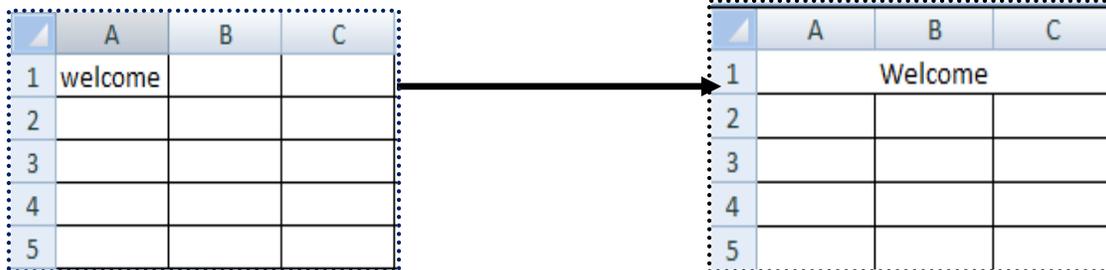
1. To delete a cell, select and highlight the cell you wish to delete.
2. **Right click** on it and choose **Delete**.
3. The Delete dialog box will appear.



4. Make a choice for how you want the cells to shift and click okay.

3.3 Merge and Center Cells:

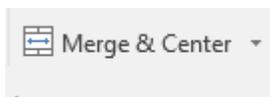
To merge cells as seen below, do the following:



	A	B	C
1	welcome		
2			
3			
4			
5			

	A	B	C
1	Welcome		
2			
3			
4			
5			

1. Select the cells you want to merge.
2. Click the **Merge and Center** button in the **Home** menu.



3. Type the title.

1.4 Moving Cells through Cutting:

Cutting cell content means that the data will be moved to another cell.

1. Select the cell or cells you want to cut.
2. Right click on the selected cells then click **cut**.

3. Select the location to move the data to then right click on that then choose **Paste**.
4. The short cut key for cutting is Ctrl+X.

1.5 Moving Cells Drag and Drop:

If you are moving the cell content only a short distance, the drag-and-drop method may be more efficient.

1. Simply click and hold the highlighted border of the selected cell.
2. Drag it to the destination cell with the mouse.
3. Release the mouse button and the selected data moves.

1.6 Moving Cells using Copy and Paste:

When you want the same data to be present at several locations, it is best to copy this data rather than type it at each location. You can copy data within a worksheet, across worksheets, across workbooks, and even to and from other applications.

1. Select the cells you wish to copy.
2. Right click on the selected cells then choose **Copy**
3. Select the location where you would like the copied cells to appear.
4. Right click on that place then choose **Paste**.
5. The shortcut keys copying and pasting are **Ctrl+C** to Copy and **Ctrl+V** to Paste.

4. Worksheet:

An Excel workbook may contain many worksheets. To navigate to a new worksheet, click on the desired sheet tab (bottom left corner of the screen).



4.1. To insert a new single worksheet:

1. Right click on any sheet then choose **insert**
2. From the window which will be shown choose **worksheet**
3. Click **OK**

You can also insert a new sheet by pressing the icon





4.2. Rename a Worksheet:

- Double-click the sheet tab that you would like to rename.
- Type a new name over the current name and press **Enter**.

4.3 Moving a Worksheet:

1. Click and hold the mouse button on the sheet tab that you would like to move.
2. Drag the sheet to its new location, a small black insertion arrow shows where the worksheet will be inserted.

4.4 Delete a Worksheet:

1. **Right Click** on the sheet you want to delete.
2. From the menu choose **delete**.

4.5 Selecting with the SHIFT key:

The shift key is used to select all the cells in a row column or range from one point to another.

1. Select the starting cell.
2. Hold the **SHIFT** key.
3. Click the ending cell of the selection.

Marcel Dekker	reprints for lopez
Federal Express	letter to gartside
OU Printing	Undergraduate Flier
Phone Bill	March
Phone Long Distance	March
University Printing Resources	paulos teaser
Academic Press	jain reprints
Computer Services	Eudora Manual
Communication Network Services	April
Communication Network Services	April long dist
Communication Network Services	May
Communication Network Services	May Long Dist
Projected Phone Bill	June
Projected Phone Long Distance	June
Metered Mail Charges	March
Projected Metered Mail Charges	April
Projected Metered Mail Charges	May
Projected Metered Mail Charges	June
University Printing Resources	Certificates

4.6 Selecting with the CTRL key:

The control key lets you select non-adjacent cells.

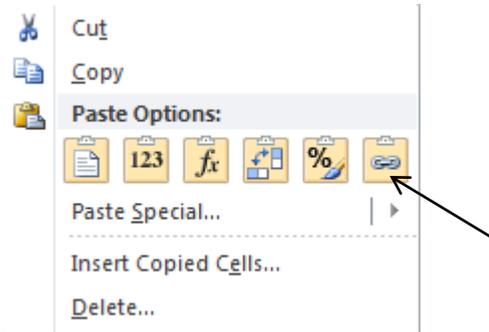
1. Select a cell.
2. Hold the **CTRL** key, select another cell.
3. Continue holding **CTRL** and selecting cells until all the cells you want selected are.

Phone Bill	March
Phone Long Distance	March
University Printing Resources	paulos teaser
Academic Press	jain reprints
Computer Services	Eudora Manual
Communication Network Services	April
Communication Network Services	April long dist
Communication Network Services	May
Communication Network Services	May Long Dist
Projected Phone Bill	June
Projected Phone Long Distance	June
Metered Mail Charges	March
Projected Metered Mail Charges	April
Projected Metered Mail Charges	May
Projected Metered Mail Charges	June
University Printing Resources	Certificates
MillerUpton Wallbaum	photos
Alden Library	binding theses

4.7 Pasting Linked Data

When you paste data from one cell to another you can link the data so if is changed in the original cell it will change in any copied cell.

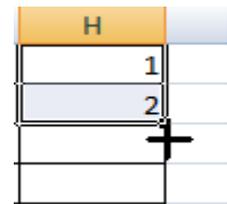
1. Highlight the data you want to copy.
2. Right click and choose **Copy**.
3. Go to the cells you wish to copy to.
4. Right click and choose from **Paste options** choose the **link** button.



4.8 AutoFill:

Fills are a good way to save time when entering data. AutoFill allows you to fill a row or a column of adjacent cells with a series based on the information in a single cell. You can do this with dates, time, months, years, numbers, and even formulas.

1. Select the cell with data that you would like to begin your series with.
2. Place your mouse pointer in the lower right corner of the active cell.
3. The mouse pointer will change to a fill pointer. Click, hold, and drag the fill pointer into a row or column of adjacent cells.

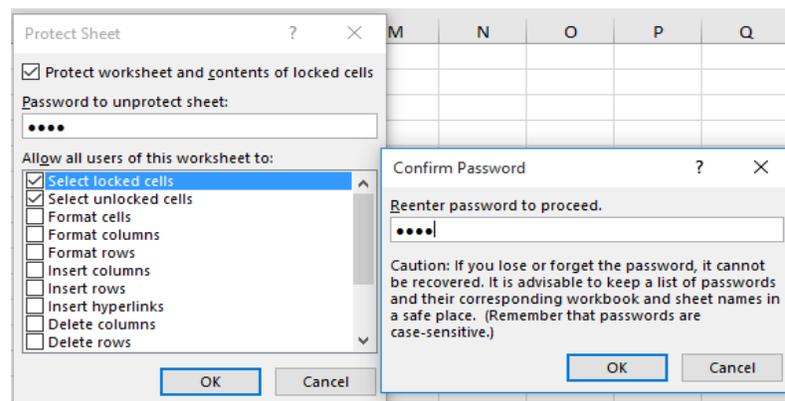


4.10 Protection:

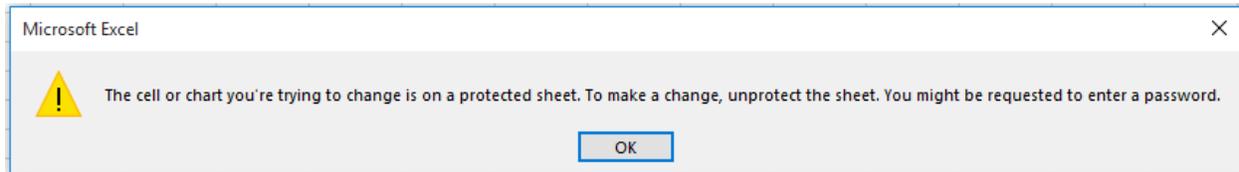
Protect a Sheet:

To protect a sheet so as nothing can be changed in the sheet content do the following

1. On the **Review** menu, choose **Protect Sheet**.
3. Enter a password.
4. Check the boxes you want.
5. Click **OK**.
6. A confirm Password dialog box will appear.
7. Enter the same password and click **OK**.



Note: An Error message will appear if you try to change or add anything to the protected sheet



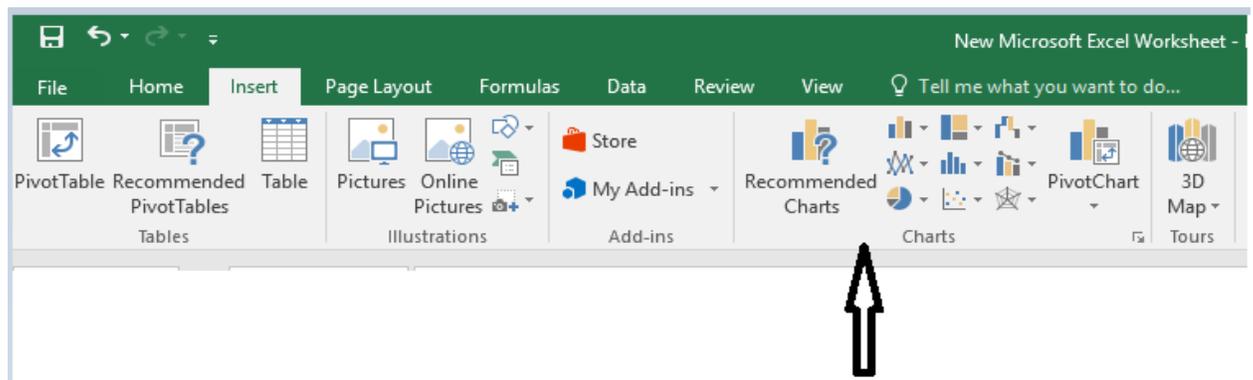
4.12 Chart Wizard

In Excel you can create charts from your worksheet data. A wide range of standard, business, and technical charts are available. It is important to accurately represent your data using the appropriate chart. There are three types of basic charts:

1. **Bar charts:** illustrate individual values at a specific point at time.
2. **Line charts:** illustrate changes in a large number of values over a long period of time.
3. **Pie charts:** show the relationship of each part to the whole.

To create a chart:

1. Select a cell in the data to be plotted.
2. From Insert Menu choose the desired chart

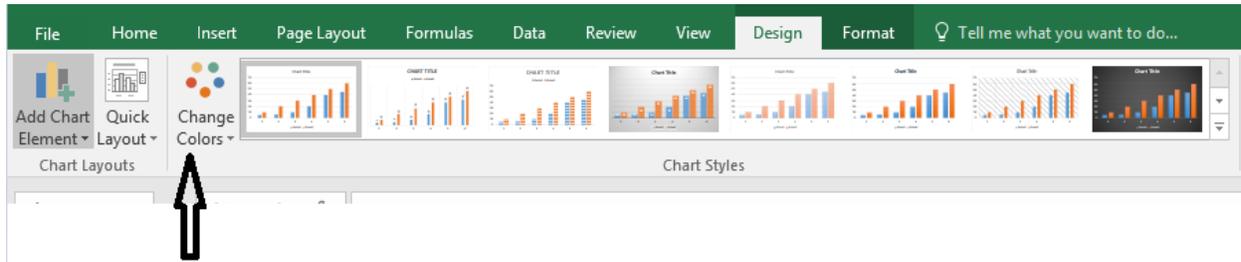


Editing the chart

Click once the chart so as to show the **Design** menu and **Layout** menu

From the **Design Menu**:

1. Select the color you want for the chart (the columns in this example)



4.13 Cell Reference

A *cell reference* identifies a cell or a range of cells on a worksheet and tells Microsoft Excel where to look for the values that you want to use in a formula. With references, you can use data contained in different parts of a worksheet in one formula. You can also refer to cells on other sheets in the same workbook or to other workbooks.

Excel uses cell references which refer to columns with letters (A through IV, for a total of 256 columns) and rows with numbers (1 through 65,536). To refer to a cell, enter the column letter followed by the row number.

Examples of references

- The cell in column A and row 10: **A10**
- The range of cells in column A and rows 10 through 20: **A10:A20**
- The range of cells in row 15 and columns B through E: **B15:E15**
- All cells in row 5: **5:5**
- All cells in rows 5 through 10: **5:10**
- All cells in column H: **H:H**
- All cells in columns H through J: **H:J**
- The range of cells in columns A through E and rows 10 through 20: **A10:E20**

4.14 Formulas

A formula is an equation that performs operations on worksheet data. Formulas can perform mathematical operations, such as addition (+), subtraction (-), multiplication (*), and division (/). Formulas can refer to other cells on the same worksheet, cells on other sheets in the same workbook, or cells on sheets in other workbooks.

The structure or order of the elements in a formula determines the final result of the calculation. Formulas in Microsoft Excel follow a specific order that includes an equal sign (=) followed by the elements to be calculated. *Example*: =A1+A2

Excel performs the operations from left to right. You can control the order of calculation by using parentheses to group operations that must be performed first.

Excel follows these rules:

Expressions within parentheses are processed first. Multiplication and division are performed before addition and subtraction. Calculations are performed from left to right. This is called the order of operations. An easy way to remember is the mnemonic.

4.14.1 Entering a Formula Manually

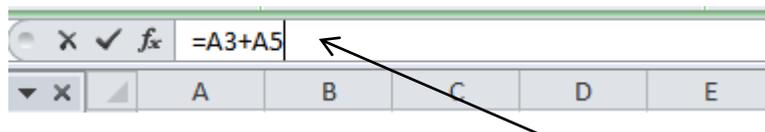
1. Click the cell in which you want to enter a formula.
2. Type “=”. The equal sign tells Excel that the succeeding characters constitute a formula.
3. Enter the formula. *Examples:* =A1+A2

=C7*F6

=F13/d5

4. Press **Enter**.

Note: Your formula will appear in the **Formula bar**



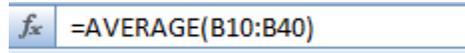
4.15 Functions

A *function* is a predefined formula that operates on values and returns a value. All functions consist of a function name followed by a set of *arguments* enclosed in parentheses. To use a pre-defined function:

1. Select the cell where you want the result to appear.
2. Click the **Insert Function** button. 
3. Click to select the desired *Function Category* (Most Recently Used.....)
4. Click to select the desired *Function Name* (Average, Sum, If, etc.).
5. Click **OK**. The **Functions Argument** box will appear.
6. In the formula palette, verify that the cells referenced are correct for the function. If the cells referenced are incorrect, specify the desired cells to be referenced.
7. Click **OK**

- **Using Average**

1. Select a cell.
2. Type = **Average**.
3. Select a range (B10:B40).
4. Type and press **Enter**.



- **Using MIN**

The MIN function returns the smallest number from a list of values.

1. Select a cell.
2. Type = **MIN**.
3. Select a range (D15:D40).
4. Type and press **Enter**.

- **Using MAX**

The MAX function returns the largest number from a list of values.

1. Select a cell.
2. Type = **MAX**.
3. Select a range (E5:E40).
4. Type and press **Enter**.

- **Using COUNT**

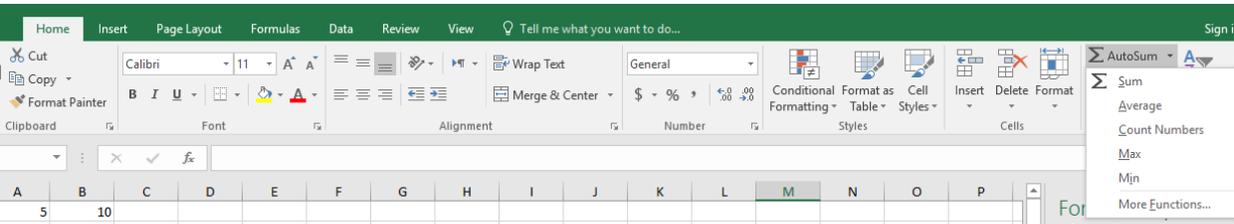
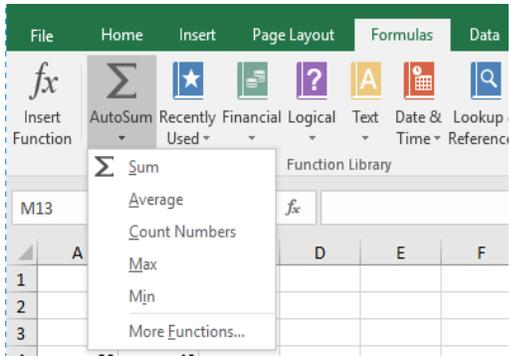
The Count function counts the number of cells that contain arguments.

1. Select a cell.
2. Type = **COUNT**.
3. Select range to average (C5:C20).
4. Type and press **Enter**.

- **Using AutoSum Menu**

AutoSum has pre-defined functions (MAX, MIN, SUM, AVERAGE, and COUNT) that automatically do calculations after selecting the wanted data.

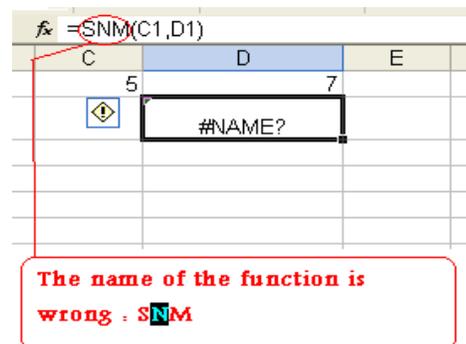
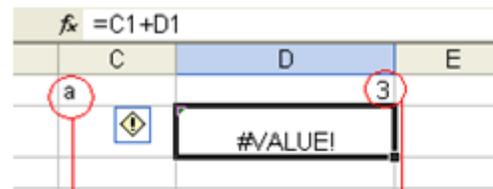
You can find the AutoSum icon in **Home Menu** or **Formula Menu**.



Error types:

Most common Errors:

- **#VALUE!** : You add a letter to number
- **#NAME?** : You write a wrong function name.



- **#DIV/0!** : when a number is divided by zero

	C	D	E
	#DIV/0!		

: the width column is too narrow

	C	D	E
	1234567	44552145	#####

6.3

The cell is too narrow

7 Experiment 5: Numbering Systems

7.1 Outcomes

7.2 Introduction

A Numbering system or a (Numeral System) in general is a system for expressing a count (ie.: A system for representing numbers). Our ancestors have used many systems in order to express number. The simplest way was using sticks:

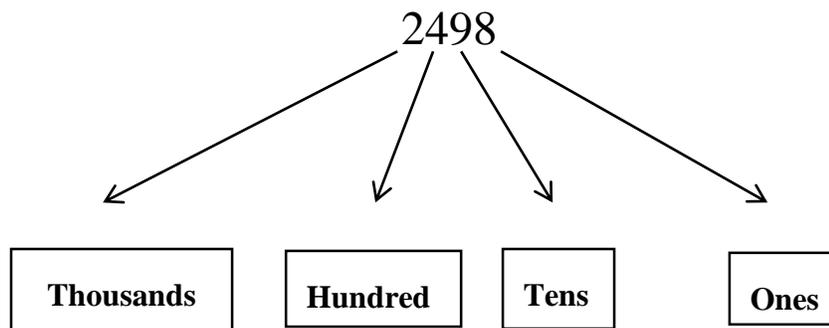
| One || Two ||| Three |||| Four ...etc.

But the main problem was when expressing large numbers (how many sticks do we need to represent 1 thousand?), so they started using symbols to represent a set of sticks, for example they used the symbol **V** to represent a set of five sticks and the symbol **X** to represent ten sticks.

7.3 Modern Numbering Systems

Counting and representing numbers is an important thing in our life that we use daily in markets, schools, work ... etc. The main numbering system that we use today is called the **Decimal System** which is known by all of us (0, 1, 2, 3, 4 ... 10, 11, 12 ... 20, 21 ... 99, 100, 101 ... etc.) but what does it exactly means?

We have learnt in schools that numbers are formed by sets of Ones, Tens, Hundreds, Thousands ... etc. Look at the example below that explains the meaning of the number two thousands four hundreds and ninety eight:



The decimal system has ten numbers which are 0,1,2,3,4,5,6,7,8,9 but what if it just has five numbers 0,1,2,3,4 ?, this is the question that we should answer in order to understand the theory of our modern numbering systems.

In the decimal system we start counting from 0 until 9 and after that we use the previous numbers to form the next ones: .i.e.(11 is formed by 1 and 1, 249 is formed by the numbers 2, 4 and 9). Considering that numbers grow from right to left and the most left digit has the greatest weight, we can design any numbering system. The example below demonstrates how to form a numbering system using just 5 numbers (0, 1, 2, 3, 4) the 5th numbering system.

The count starts as regular from 0, 1, 2, 3, 4. And after that we have to use these numbers to form the next ones. When we get to 4 in our system (which is the greatest number in our system), we set it to 0 and add 1 to the next left digit. The table below maps between the first 16 numbers in the decimal system and the 5th system.

Decimal System	5 th System
0	0
1	1
2	2
3	3
4	4

Decimal System	5 th System
5	10
6	11
7	12
8	13
9	14

Decimal System	5 th System
10	20
11	21
12	22
13	23
14	24

When the number became 4, we set it to 0 and we added 1 to the left side which became 10. We count again until 14 and we repeat the same steps and the number became 20. When the number gets to 44, we restart the first digit and add 1 to the next one and because the next one is full also (it reached to 4) we restart it again and add the one to the next digit and the number becomes 100 and this is how it keeps going with all the numbering systems.

7.4 The Binary System

The Binary system is the system that contains just 2 numbers (0 and 1) and it's the basic system that is used in the computers and the digital machines in general. This system is implemented straightforwardly in electronic circuits as (1 = True, 0 = False) or (1 = On, 0 = Off) and each digit is called a **Bit**. The count in Binary system follows the numeral systems rule as you open a new digit when the previous is full.

Decimal			Binary			
	0	Zero				0
	1	One				1
	2	Two			1	0
	3	Three			1	1
	4	Four		1	0	0
	5	Five		1	0	1
	6	Six		1	1	0
	7	Seven		1	1	1
	8	Eight	1	0	0	0
	9	Nine	1	0	0	1
1	0	Ten	1	0	1	0
1	1	Eleven	1	0	1	1
1	2	Twelve	1	1	0	0
1	3	Thirteen	1	1	0	1
1	4	Fourteen	1	1	1	0
1	5	Fifteen	1	1	1	1

7.5 Binary to Decimal Conversion

In order to convert a binary number to decimal you multiply each digit by 2 to the power the position. E.g:

- 1) To convert the number 101101 to decimal

$$\begin{array}{rcccccc}
 & & & & & & 1 & 0 & 1 & 1 & 0 & 1 \\
 \text{Position} & 5 & 4 & 3 & 2 & 1 & 0 & & & & &
 \end{array}$$

The equivalent number in decimal will be $1x2^0 + 0x2^1 + 1x2^2 + 1x2^3 + 0x2^4 + 1x2^5$
 $= 1 + 0 + 4 + 8 + 0 + 32 = 45$.

and we say $(101101)_2$ is equivalent to $(45)_{10}$ and we write it as $(101101)_2 \equiv (45)_{10}$.

2) To convert the number 11011011 to decimal

	1	1	0	1	1	0	1	1
Position	7	6	5	4	3	2	1	0

The equivalent number in decimal will be $1 \times 2^0 + 1 \times 2^1 + 0 \times 2^2 + 1 \times 2^3 + 1 \times 2^4 + 0 \times 2^5 + 1 \times 2^6 + 1 \times 2^7$

$$= 1 + 2 + 0 + 8 + 16 + 0 + 64 + 128 = 219.$$

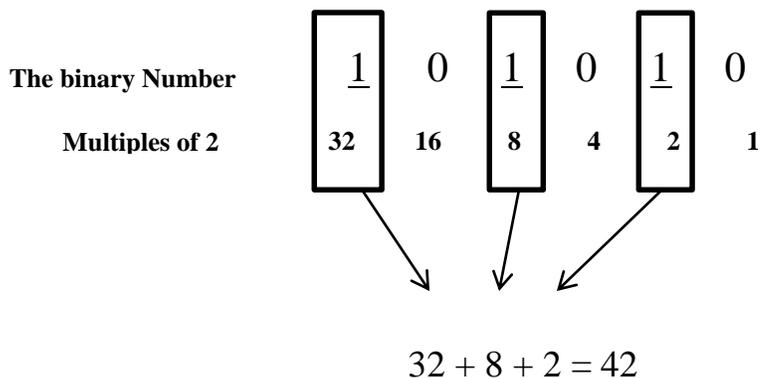
and we say $(11011011)_2$ is equivalent to $(219)_{10}$ and we write it as $(11011011)_2 \equiv (219)_{10}$.

From the 2 examples illustrated above we can notice that the numbers we added were 1, 2, 4, 8, 16, 32, 64 and 128 which are all multiples of 2 and this happens because we always multiply by 2 to the power of position.

$$2^0 = 1, 2^1 = 2, 2^2 = 4, 2^3 = 8, 2^4 = 16, 2^5 = 32, 2^6 = 64, 2^7 = 128, 2^8 = 256 \dots \text{etc.}$$

Another easy way to convert binary numbers is summing up the multiple of 2 if the bit is 1 otherwise we add 0. E.g:

To convert the number 101010 to decimal



7.6 Decimal to Binary Conversion

Since we multiplied by 2 when converting a binary number to decimal, here we should divide by 2 and follow the remainder sequence. E.g:

1) Convert the number 27 in decimal to binary

Result	Remainder
27 / 2	1
13 / 2	1
6 / 2	0
3 / 2	1
1 / 2	1
0	

$27/2 = 13$ and the remainder is 1, $13/2 = 6$ and the remainder is 1, $6/2 = 3$ and the remainder is 0, $3/2 = 1$ and the remainder is 1, $1/2 = 0$ and the remainder is 1.

This sequence of the remainder forms the binary number that is equivalent to 27 in the example above. The number is written from right to left if you read it from the top. From the previous example $(27)_{10} \equiv (11011)_2$.

3) Convert the number 61 in decimal to binary

Result	Remainder
61 / 2	1
30 / 2	0
15 / 2	1
7 / 2	1
3 / 2	1
1 / 2	1
0	

From the example above, $(61)_{10} \equiv (111101)_2$.

7.7 Exercises

- 1) Convert the following numbers from decimal to binary (18), (73), (101).
- 2) Convert the following numbers from binary to decimal (1111), (110001), (0010110).
- 3) What are the next 5 binary numbers that comes after this number (1101010).

8 Experiment 6: Microsoft Office Access (2016)

8.1 Outcomes

8.2 Introduction

8.3 Section(s)

8.4 Exercises

9 Experiment 7: Microsoft Office Power Point (2016)

9.1 Outcomes

- What is a presentation, its types and what should contain.
- To introduce the PowerPoint main functions.
- To be able to create a PowerPoint presentation document, add text animation, Slide transition.
- To add sounds, videos, pictures in addition to text in the presentation.
- To control the slides during the presentation.
- To use different views and printing options.

9.2 Introduction

PowerPoint is one of Microsoft Office applications; it is used to create the presentation slides with text, graphics and sounds. Slides are the individual parts of a presentation, they are similar to the individual pages in a print document, and they can contain text, graphics, and/or animation.

PowerPoint has features enable the slides, text and the graphics to be animated. When you play a PowerPoint presentation slides and the other objects can move automatically or with your mouse click, these movements called special effects (Slide Transition and Animation Effects).

What is a Presentation?

A presentation is a means of communication which can be adapted to various speaking situations, such as talking to a group, addressing a meeting or briefing a team. To be effective, step-by-step preparation and the method and means of presenting the information should be carefully considered.

Types of presentations

1. Quick 1-minute “what I do” talk.
2. 25-minute conference paper presentation.
3. Project presentation.
4. Thesis defense.
5. Job talk.

What they have in common:

1. Never enough time to talk about everything.
2. All of them reflect on you & need practice/polish.
3. Focus on a clear goal and message.

Top 10 pointers for a good talk

1. Be neat.
2. Avoid trying to cram too much into one slide, don't be a slave to your slides.
3. Be brief, use keywords rather than long sentences.
4. Avoid covering up slides.
5. Use a large font.
6. Use color to emphasize.
7. Use illustrations to get across key concepts, may include limited animation.
8. Make eye contact.
9. Be ready to skip slides if time is short.
10. Practice!!

What should my presentation contain?

1. Who am I?
2. What is the problem?
3. Why is it important?
4. What have others done?
5. What is my approach?
6. Summary, future work, backup slides.

9.3 Getting Started with Microsoft power point 2016

Click on the **start button**, point to **All programs** then **Microsoft office** and click on **Microsoft office power point 2016** .the window appears and your screen looks similar to the one shown below.

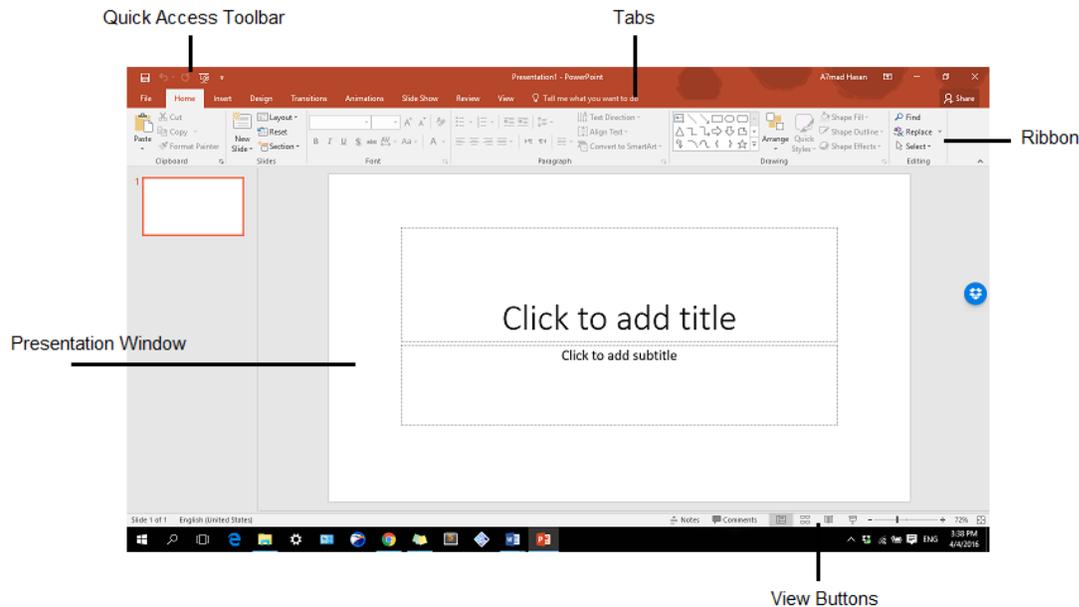


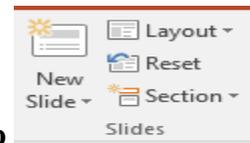
FIGURE 9-1:POWERPOINT 2016 WINDOW

9.3.1 Creating a New Presentation

Any presentation will consist of slides; these slides with their "**Types**" specify the way of data arrangements.

The first time you start the PowerPoint a slide of type "**Title Slide**" is created, then you can create more slides by:

- Go to **Home** in the **ribbon**, then to the **Slides group**



click on **new slide**



9.3.2 Normal slide:

Usually the first slide in a presentation is a "**Title Slide**", this slides type looks like the following figure:



FIGURE 9-2:TITLE SLIDE

It is used to introduce the presentation, click in the space labeled "**Click to add title**" and type a title for the presentation, for example type your favorite book title, do the same thing for the space labeled "**Click to add subtitle**" and you can type the author name.

9.3.3 Adding Bullets Slides

Bullets used to present key points in a presentation, it may be anything from standard points like ●, symbols like 😊 or shapes like 🍎.

1. Create a new slide (as described previously in this experiment).
2. A new slide will appear and a second slide will appear on the left screen, it should look like the one below:



FIGURE 9-3: ADDING BULLETS

9.3.4 Formatting Bullets:

Go to the "**Home**" tab, then to the "**Paragraph group**" and click on "**Bullets**" , then choose "**Bullets and Numbering**" a dialog like the following figure enables you to choose your bullets and customizing it.

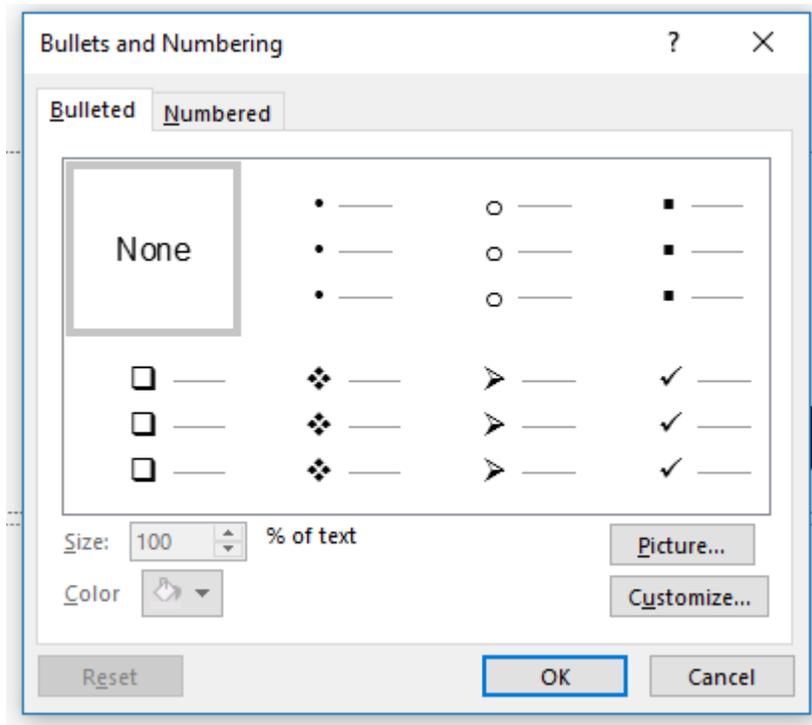
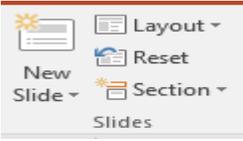
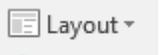


FIGURE 9-4: FORMATTING BULLETS

9.3.5 Changing Slide Layout:

When you create a new slide, you can change slide layout by:

- Go to **Home** in the **ribbon**, then to the **Slides group** , and then click on **Layout** , now you can select the layout you need and change the layout of selected slide.

9.3.6 Adding a ClipArt and Picture Slide:

Pictures not only add visual interest but also assist in getting your message across. Clipart is used to add pictures to your presentations.

PowerPoint 2016 offers you a number of different ways to add **clip Art and pictures** to your presentation.

- One of them is to select a slide layout that contains a placeholder for content such as clip art and pictures as shown below



FIGURE 9-5: ADDING A CLIPART AND PICTURE

- Go to **Insert** tab on **ribbon**, then to **Illustrations and Images** group, then click picture if you need to download picture from file or click on clip art to select one of Microsoft pictures

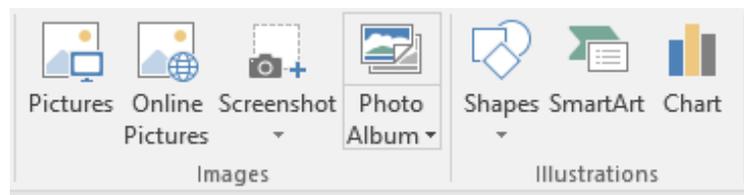


FIGURE 9-6: ILLUSTRATIONS AND IMAGES

9.3.7 Adding a WordArt Slide

WordArt is used to create special effects on the text; you can create curves, angles, waves, 3-D effects and many more.

- Create a new slide.
- Change the slide layout; choose the “**Blank**” layout. You should now have a slide that is completely blank.
- Go to **Insert** tab on the ribbon, then to **Text** group now select **word Art**

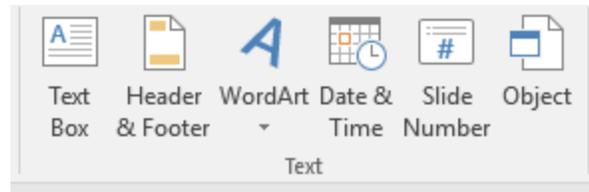


FIGURE 9-7: TEXT GROUP

- Choose a text layout and then click OK.
- From **format** tab you can choose formatting options and type your text then click OK. The WordArt will appear in the center of your slide.
- You can drag text to move it from one place to another, also you can rotate text, there are many things you can perform on your text as you needed.

9.3.8 Changing the text after formatting it using the WordArt:

Double click the text, and then you can write your new text.

9.3.9 Moving through presentation slides

Moving can be done by clicking its thumbnail on the left of the screen, also you can move between slides by using the **[Page up]** and **[Page Down]** Keyboard keys.

Advanced Option: You can move a selected object by pressing the arrow keys on the keyboard. This can help with precise positioning since each time you press the key, the object will move only a small amount. Holding down the **[Ctrl]** key at the same time will move in even smaller amounts.

9.4 Formatting Slides

9.4.1 Using Slide Templates

PowerPoint has a number of built-in design templates. These are intended to make it quick and easy to design a presentation that has a neat, consistent look on each slide. It can format all of the slides in even a very large presentation.

To use a design template in your presentation do the following:

- Go to the **Design tab**, then **Themes** group, and then click the more button  in the **Theme** group. A menu of themes appears. Click the theme you want.

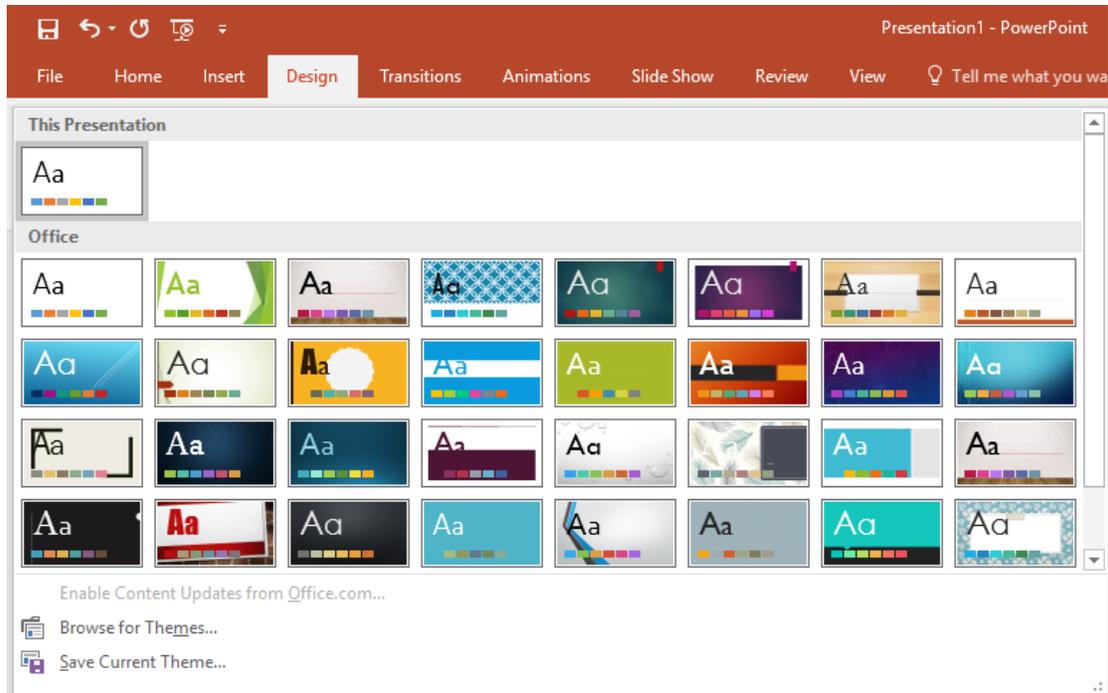
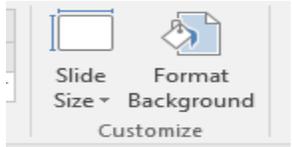


FIGURE 9-8 :SLIDE TEMPLATES

Note: Using a design template will replace most of the formatting that you may have already applied. You can always continue to modifying the formatting after applying a template but formatting changes before using the template will mostly be lost.

9.4.2 Add Background

You can add dramatic effect to your theme by applying a background

- Go to **Design** tab, then to **Customize** group , and

then click format background button , if you need apply selected background to all slides just click on **“Apply to All”** button.

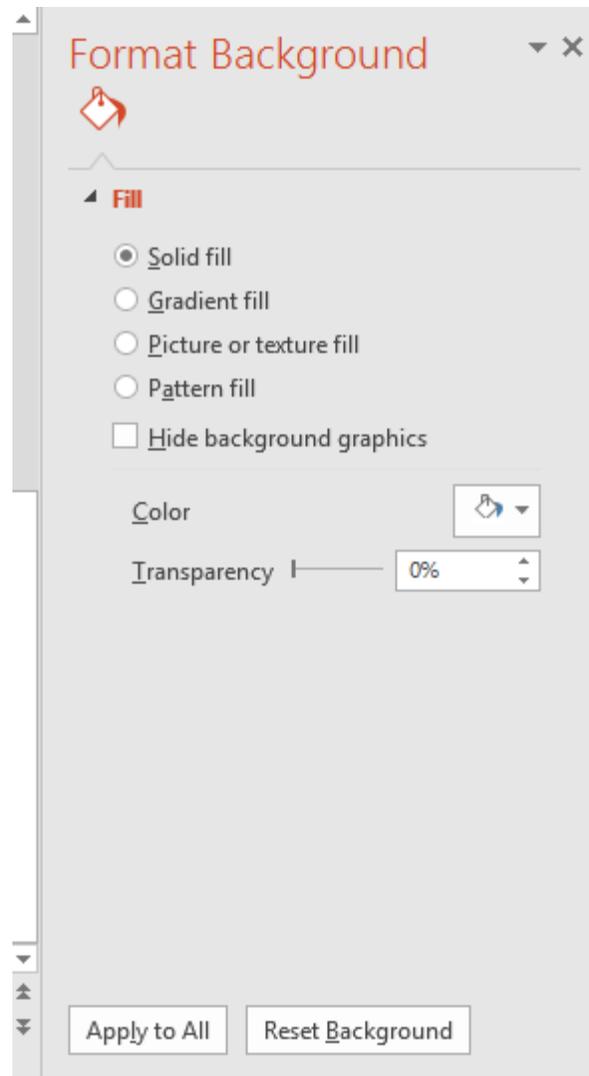


FIGURE 9-9: FORMAT BACKGROUND

9.4.3 Special Effects:

One of the main features of the PowerPoint is to create animated text such as sound and motion (Transition) for the text and the slides.

9.4.4 Slide Transitions

Transitions determine how your presentation moves from one slide to the next. For example, a slide can move up onto the screen and replace the previous slide.

- Choosing the slides:

Before you can apply a transition, you must select the slides to apply the transition to; this can be done using one of the following ways:

-Selecting slides in a group - Click on the first slide. Hold down **[Shift]** and click on the third slide. Those slides and any in between will be selected. Click in the blank space between the slides to de-select them all

-Selecting separate slides – click on the second slide. Hold down **[Ctrl]** and click on the fourth slide. Each time you click on a slide while holding **[Ctrl]** you will select the slide if it’s not already selected, and deselect it if it is already selected. Deselect all slides.

-Selecting all slides – Click on one slide then press **[Ctrl][A]**.All slides will be selected.

- Add Transition

-Go to **Animations** tab, and then to the “**Transition to This Slide**” group, then click the more button  in the “**Transition to this Slide**” group. A menu of transitions appears. To apply selected transition to all slides click

the Apply to All button  **Apply To All** .

-To add a sound to a transition

Go to **Animations** tab, then click the down arrow next to the **Transition Sound** field and then click the sound you want.

-To set the speed of transition

Go to **Animations** tab, then click the down arrow next to the **Transition Speed** field and then click the speed you want.

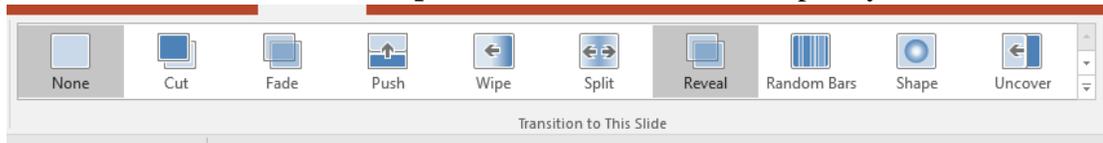
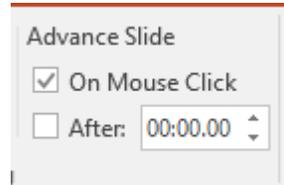


FIGURE 9-10:TRANSITIONS

You can choose the appearance way of the slide (Automatic after a specified period of time or

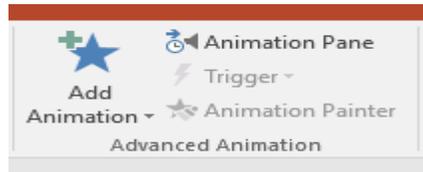


after a mouse click).

9.4.5 Animation Effects

Not only can whole slides have transition effects, but the individual objects on a presentation can also have animation effects. Many of these effects allow you to have certain objects hidden until you require them to be displayed. This can be especially useful for drawing attention to items in a bulleted list one at a time.

- Choose one of the presentation slides then choose the text/picture/chart etc, the object you want to give a motion (Transition).
- Go to **Animations** tab, then **Advanced Animation** group, then choose



"Add Animation",
figure

to get the following

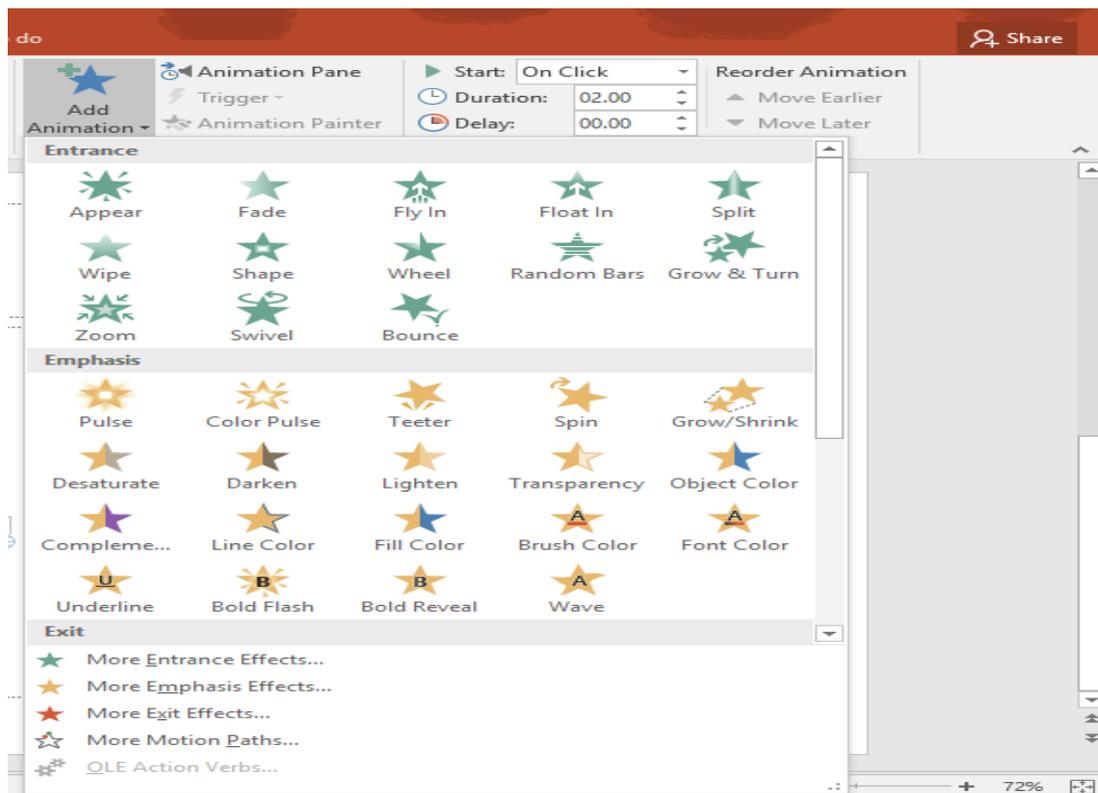


FIGURE 9-11 :ANIMATIONS

Try to choose some of these effects; once you did all the objects, some numbers should appear to the left of each object on the slide. These indicate the order each object will appear in the presentation.

Note the "**Add Animation**", now it has a description for the animations you chose, it may look like the following figure:

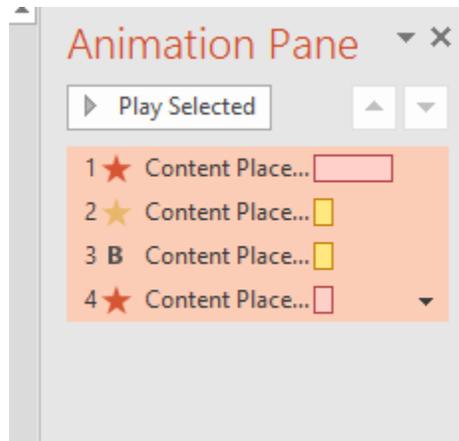


FIGURE 9-12 :ANIMATION PANE

This enables you to reorder the objects order of appearance by dragging and dropping any animation description, also you can choose when the animation can start and the speed of its motion.

Note: you can apply more than one animation effects on one object, but too many animation effects can make a very long and very tedious presentation. Use them for adding emphasis. Don't use them just because you know how.

9.4.6 Adding Sound to Slides

The PowerPoint helps you to add sounds to the presentation, from the **Insert** tab, go to **Media group**, and then choose **Audio** to get the following figure.

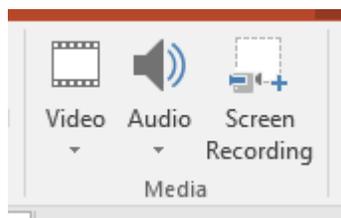


FIGURE 9-13 : MEDIA

- Select **Audio from My PC** to Navigate to the folder or disk drive where the sound is stored and then click to select the sound you want to insert and click **ok**.

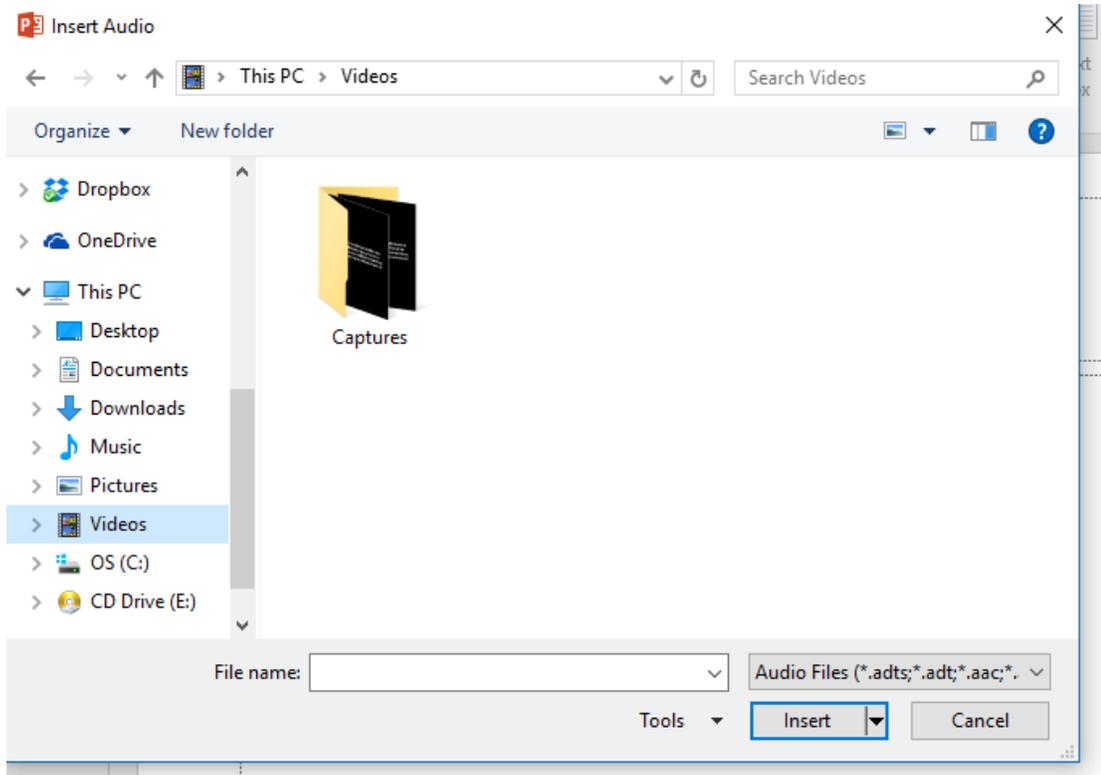


FIGURE 9-14: INSERT MEDIA

You will be asked whether you want the sound to play automatically or when you click on the icon if you click "**Automatically**" this will mean that the sound will play as soon as that slide appears in your presentation, the other option "**When Clicked**" means the sound will play when you click on the sound icon that appears 🗣️.

A sound icon will appear on the slide. While the presentation is playing, you can click on this icon to play the sound whenever you choose. When you are designing your slide, you can drag this icon to change where it is positioned on your slide (same as the animation it has an order in the presentation).

9.4.7 Viewing Presentations

Once the presentation is all ready, how can you show it??

- Choose the first slide, or the slide you want to start with.
- Click the icon in the bottom left corner of the PowerPoint window



or press the **[F5]** key.

- You can end the presentation at any time, press **[Esc]**. You can then press **[F5]** again to return to the presentation. Your presentation will also end once you have passed the final slide.
- During the slide show click your left mouse button or press the spacebar to advance to the next slide.
- If you want to move to the previous slide again, you can right-click on the screen and choose **Previous**. An even easier way to go backwards and forwards through the slides is to press the **[Page up]** key (for next slide) and the **[Page down]** key (for previous slide).
- If you would like to quickly get to a particular slide number, you can simply press the number of the slide you want to go to and then press **[Enter]**. For example, pressing **[3]** and **[Enter]** on your keyboard while in slideshow view will take you straight to the third slide. It doesn't matter if you've already passed the slide. If you have a lot of slides in a presentation it still works.

9.4.8 Changing the view

You can change the way the PowerPoint displays the slides, go to "**View**" tab and choose:

- Normal View to get same as the previous diagram.
- Slide Sorter View to see all your slides in a small size with a more functional page.
- Slide Show to plays your presentation from the current selected slide.

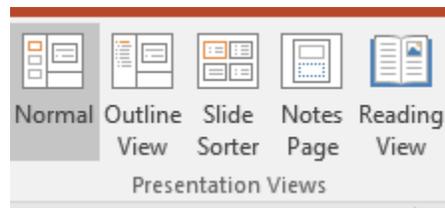


FIGURE 9-15 :PRESENTATION VIEWS

9.5 Printing Slides

If you are doing a presentation using PowerPoint, your listeners may appreciate having some notes to follow on with. It may even benefit you as a presenter to have a copy of your presentation printed out in front of you so you can remember what's next in the presentation.

- While your presentation is open, Select **Print** from the **File** menu or press **[Ctrl][P]**.

- Options similar to the following will appear.

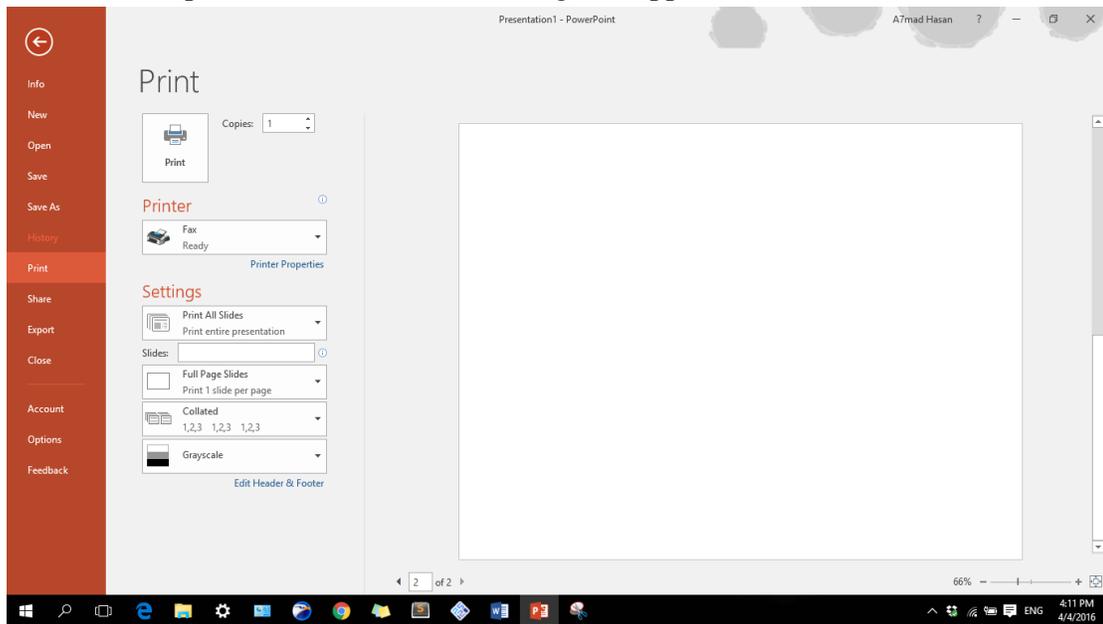


FIGURE 9-16 :PRINT YOUR PRESENTATION

- Under **Print what**, click the list and select **all slides**.

9.6 Slide Master

- What is this ?
The slide that stores information about the design template applied, including font styles, placeholder sizes and positions, background design, and color schemes.
- Create your own slide master
 - On the ribbon,select the View tab > in the Master Views group >Click Slide Master

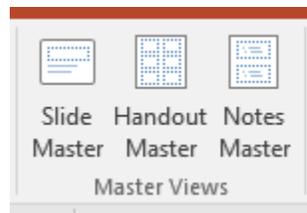


FIGURE 9-17 :MASTER VIEWS

- On the left of your screen you will now see a column with slide master thumbnails
 - The top slide thumbnail is your main slide master.
 - The rest only apply to slides using the corresponding slide layout.

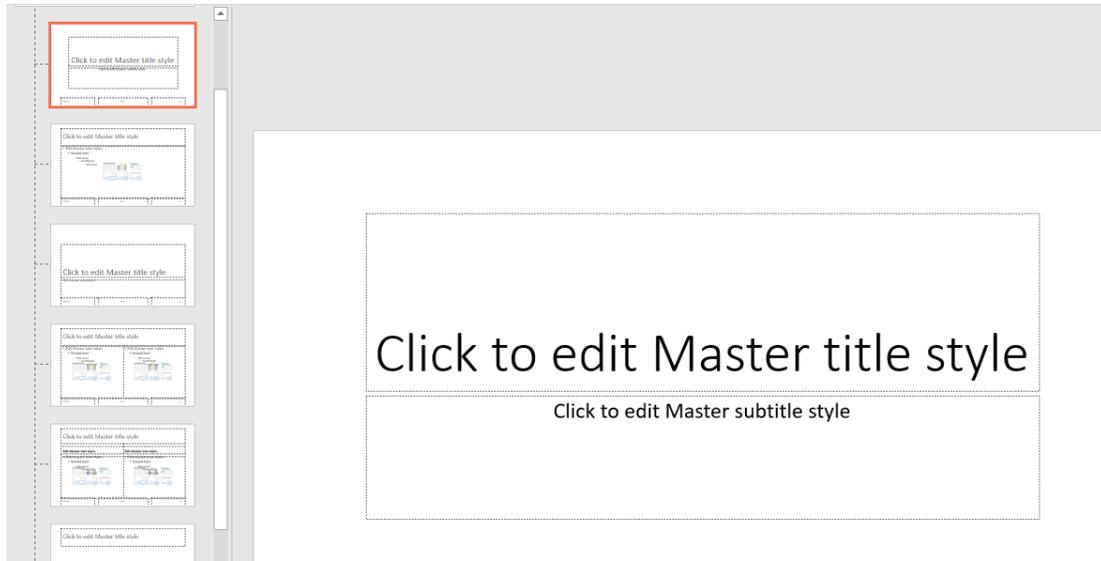


FIGURE 9-18 :SLIDE MASTER

iii. Work with main slide master

1. Select the slide thumbnail at the top of the column (there is a 1 to the left of the thumbnail)
2. Changing this slide will affect every other slide in your presentation.

iv. Text format on master slide

1. The master title style is the text formatting that is used for the title created on any slide
2. The main text style changes the look and feel of text in the main area of the slide.

10 Experiment 8: Statistical Package for the Social Science (SPSS)

10.1 Outcomes

- To be familiar with the fundamentals of the SPSS package..
- To know how to insert data using data editor.
- To use descriptive statistics to compute means maximum, and minimum for the whole data and for specific group of data.
- To create new variables using the compute option and assign mathematical values to new variables.
- To draw charts.
- To find frequencies for groups of data.
- Become familiar with the essentials of Google forms.

10.2 SPSS Introduction

SPSS stands for *Statistical Package for Social Sciences*. It was produced by IBM corporation. According to its name, the main usage is for statistical operations. It provides an easy way to enter data, and then apply some essential dataset functionalities, such as specifying data types, sorting, splitting, generating statistical reports, and much more of such important functions.

Before you begin using the program, get a good impression by being aware of usage scenarios and problems that SPSS provides solutions. Here is a list of such scenarios and problems where SPSS is considered as a good choice to address them:

1. In your graduation project, you have collected a set of questioners from a group of people, and you need to analyze them using descriptive analysis (Minimum, Maximum, Range, Variance, Standard Deviation, mean, *etc.*). Furthermore, you want to generate reports and charts to prove your theory. SPSS provides an easy and convenient way to enter your questioners and apply the mentioned operations on them.
2. Fraud detection and prevention. Give SPSS a set of users profiles correlated with their fraud history, a bank security analyst would be able to detect any potential fraud of any new bank transaction. Thus, giving the bank the ability to take proper actions before damages and loss occur.

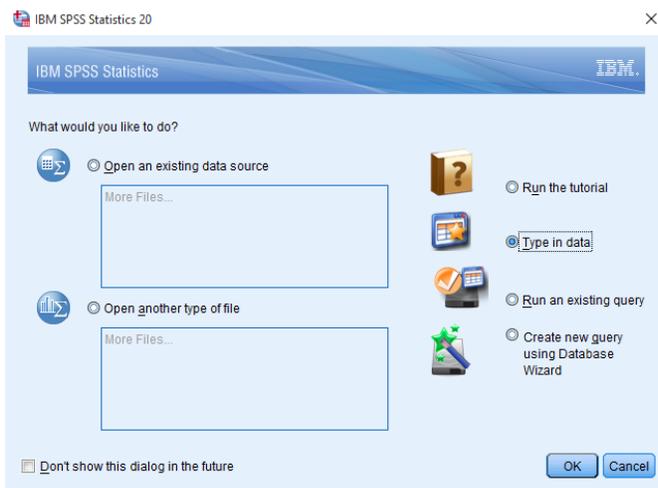
3. Medical researchers can use SPSS to convert the data they collect into useful information which helps in viewing of data from a different perspective which may lead to new theories and conclusions.

10.3 SPSS main components

You can find the program in *start menu* or on *desktop*. It has this icon



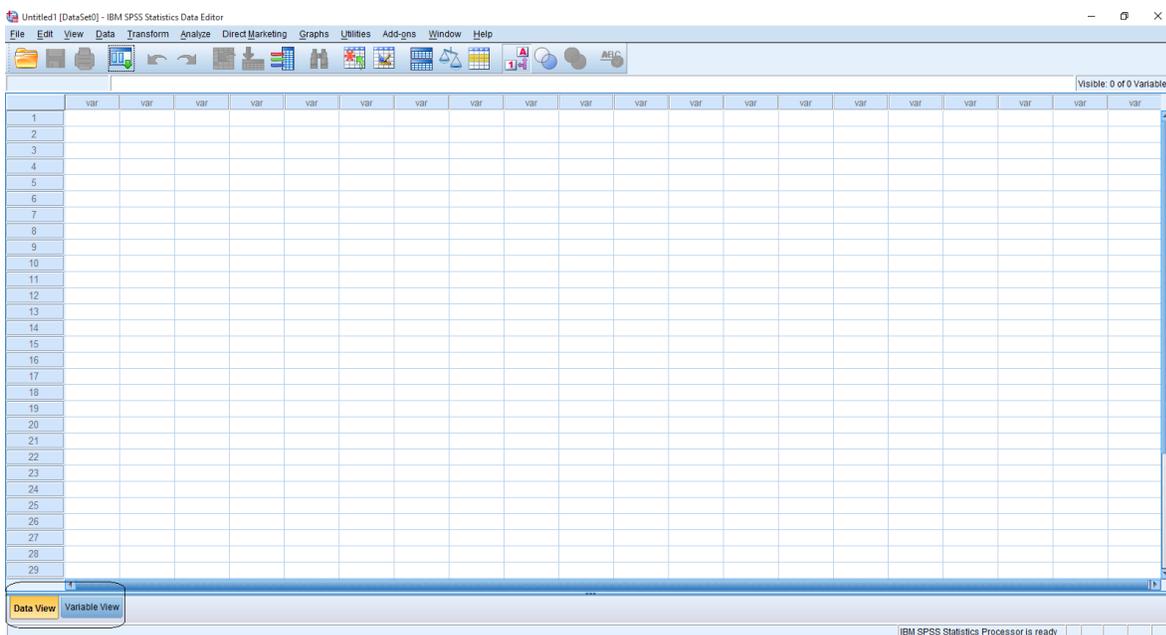
When you open (run) the program, the following dialog shows up:



Choose **Type in data** which allows you to enter data manually

Then the main window will show up. As you see in the next picture, the window has two main tabs in the bottom.

Data view and Variable view



With **Variable view** you can specify the variables used in your dataset, with their attributes. While in **Data view** you can enter the data itself.

To understand them well: Assume that you have gathered the following survey from 30 persons

Questioner	
Questioner Code	
Age	_____
Gender	<input type="checkbox"/> Female <input type="checkbox"/> Male
Educational Level:	
	<input type="checkbox"/> High school or Less
	<input type="checkbox"/> Diploma
	<input type="checkbox"/> Bachelor's degree
	<input type="checkbox"/> Professional degree
Job Title:	_____
Experience Years:	
	<input type="checkbox"/> 1-3 years
	<input type="checkbox"/> 4-7 years
	<input type="checkbox"/> 8-11 years
	<input type="checkbox"/> 12 or more
Salary:	_____

Age, Gender, Educational Level, Job title, Experience Years and Salary represent the variables. Each has its own attributes. At first, we define these variables in Variable view, then we see them as columns in Data view. While a row in Data view represent an instance or case, which according to the above example represents a person. Therefore, in Data view we will have 6 columns which represent the variables (which are defined in variables view) and 30 rows which represent the persons (the gathered surveys).

Variable view Elements

Variable View is where variables are defined by assigning variable names and specifying the attributes as the following:

Attribute	Default Value
Name- The name of the variable defined. . It is recommended to assign a brief and meaningful name (e.g., “Name,” “Gender,” and “GPA”).	none
Type- The variable type determines how the cases are entered. Generally, text based characters are of “String” type and number-based characters are of “Numeric” type. etc	numeric
Width- Total numbers of characters	8
Decimals- Number of characters beyond the decimal point	2
Label- Value labels allow users to describe what the variable name stands for. For example, if a variable has been defined as “Fav,” most likely others may not know what it stands for.	none
Value- allows you to provide labels for the various levels of a variable	none
Missing values- enables you to designate certain scores as missing	none
Columns- the width of the column used to fill this variable but that its effect will appear in the data view only.	8
Align- allows you to determine the alignment of your column	right
Measure- allows you to determine the kind of scale for the particular variable	scale

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										

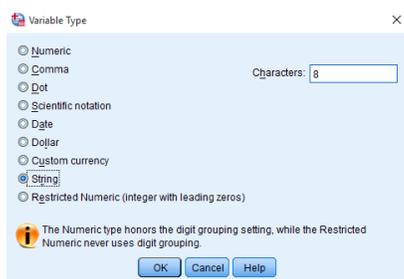
The Data Editor Menus:

- **File:** To open an existing file, to read data (from a text file or from an application (for example Excel) into Data Editor Window, to save the data file, and to exit SPSS windows.
- **Edit:** To make changes like copy, cut and paste to the Data Editor Window.
- **Data:** To define variables, insert variables or cases, sort cases, merge file, split files, select cases and use a variable to weight cases
- **Transform:** To do some computations on variables, to create new variables from existing ones or record old variables.
- **Analyze:** To do statistical analysis, from descriptive statistics to testing hypothesis.
- **Graphs:** To obtain high resolution plots and graphs, this can be edited in Chart Editor Window.
- **Utilities:** To run script and to display information on the contents of SPSS data files.
- **Windows:** To move to any open window or to see which window is active. The window with a check mark is the active one.
- **Help:** To get help on topics in SPSS and to ask the statistics coach some questions.

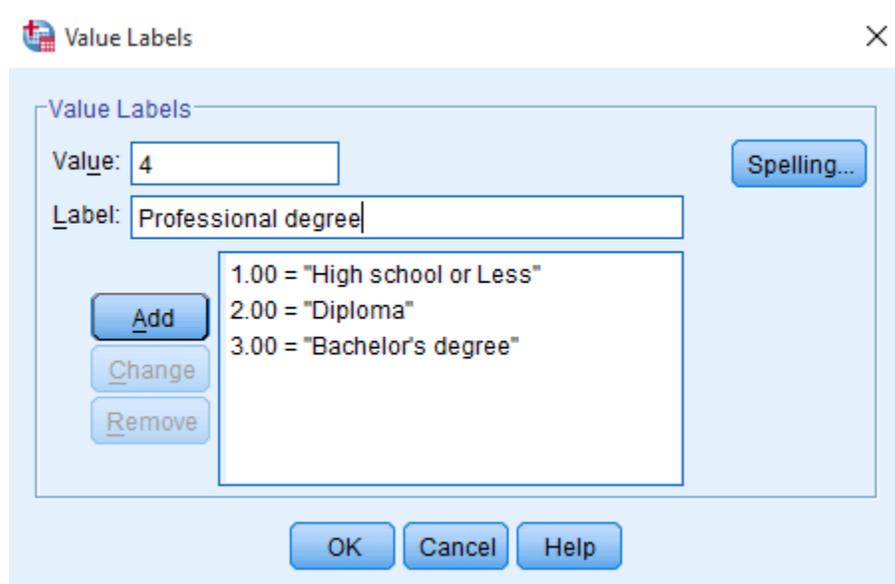
Defining the variables

Based on the given Questioner, we are going to do the following in the variable view:

1. In the space **Name**, type the variable name, the first character must be alphabetic; the remaining characters can be alphabetic, and /or numeric, (but the underscore” _ “or the period”. “can appear in the name) and no spaces can appear in the name, so for the first variable, let's type “Qcode” (Questioner Code).
2. Under the **Type** column, click the ellipses button . The Variable Type dialog box opens. From this figure choose the type that is suitable to your variable, in our example the type **String** would be suitable type for the Questioner Code variable. Then press **ok**.



3. When choosing the string type, the maximum **width** of this string must be identified from the column width.
4. In this example the variable “Qcode” is String, so it’s never has **Decimal** points
5. Click on **Label** and type in “The Questioner code “. The Label slot usually contains a clear description for the variable to help the user understand what does this variable exactly mean.
6. From the **Align** column, the user choose the alignment of the inserted data; Left, Right or Center.
7. From the **columns** column, the user can modify the width of the column used to fill this variable but that its effect will appear in the data view only.
8. The rest of variables will be defined in the same manner but keep in mind the following points about them:
 - a. The second variable would be age which is **Numeric** type and zero Decimals
 - b. The third variable would be Gender. This variable is of 2 options (Male and Female) which is string. But for statistical reasons. We define their type to be Numeric, then from the values slot numeric values are assigned to each non-numeric values. When clicking the value slot, the following window will appear. In the Value slot the numeric value is added while in the Value Label slot the label that represents the numeric value. Then the Add button must be selected. In the Data View the Value Label icon  is used to represent the labels assigned to each numeric value. The same thing is applied on Educational Level and Experience Years, since we are providing a predefined values. Here is how value labels of Educational Level variable would be:



After defining the variables, the **Variable View** will be as the figure below:

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Qcode	String	8	0	Qcode value	None	None	8	Left	Nominal	Input
2	Age	Numeric	8	0	Age value	None	None	8	Right	Scale	Input
3	Gender	Numeric	8	0	Gender value	{1, Male}...	None	8	Right	Scale	Input
4	EduLevel	Numeric	8	0	Educational Level	{1, High school or Less}...	None	15	Right	Scale	Input
5	Title	String	20	0	Job Title	None	None	14	Left	Nominal	Input
6	Years	Numeric	8	0	Years of Experience	{1, 1-3 years}...	None	8	Right	Scale	Input
7	Salary	Numeric	8	2	Monthly Salary	None	None	8	Right	Scale	Input
8											
9											

Input Data to Data view

After you finish defining the variables, you can switch to Data View to enter the cases (Quersted answers of the questioner). Let's enter the following data:

The screenshot shows the IBM SPSS Statistics Data Editor window. The menu bar includes File, Edit, View, Data, Transform, Analyze, Direct Marketing, Graphs, Utilities, Add-ons, Window, and Help. The toolbar contains various icons for file operations and data manipulation. The main window displays a data grid with 14 rows and 8 columns. The columns are labeled Qcode, Age, Gender, EduLevel, Title, Years, and Salary. The data is as follows:

	Qcode	Age	Gender	EduLevel	Title	Years	Salary
1	100	25	Male	Bachelor's degree	Bank Teller	1-3 years	3000.00
2	101	32	Male	Professional degree	Financial Analyst	12 or more	6000.00
3	102	27	Female	Bachelor's degree	Business Analyst	4-7 years	4000.00
4	103	44	Male	Bachelor's degree	Accountant	12 or more	5500.00
5	104	30	Female	Diploma	Executive Assistant	8-11 years	2700.00
6	105	45	Female	Professional degree	Marketing Manager	8-11 years	6000.00
7	106	33	Male	Bachelor's degree	Web Developer	4-7 years	4300.00
8	107	24	Female	Bachelor's degree	Bank Teller	1-3 years	3500.00
9	108	36	Male	Bachelor's degree	Management Trainee	8-11 years	4200.00
10	109	22	Male	High school or Less	Mail Sorter	1-3 years	2500.00
11							
12							
13							
14							

Insert new cases and variables between existing cases or variables:

In the **Data View**, select any cell in the row below the position where you wish to insert the new case or select any cell in the variable to the right of the position where you wish to insert a new variable. From the **Data** menu, click on **insert case** or **insert variable**.

Or use the Icon  To Insert a case,  to insert a variable.

Sort Cases

1. From the **Data** Menu, choose “ **Sort cases**”
2. You can choose which variables by which you will sort your data. Simply select the desired variables and click on the arrow in the center of the screen to move it to the **Sort by** field. Press **OK**

3. Descriptive Analysis

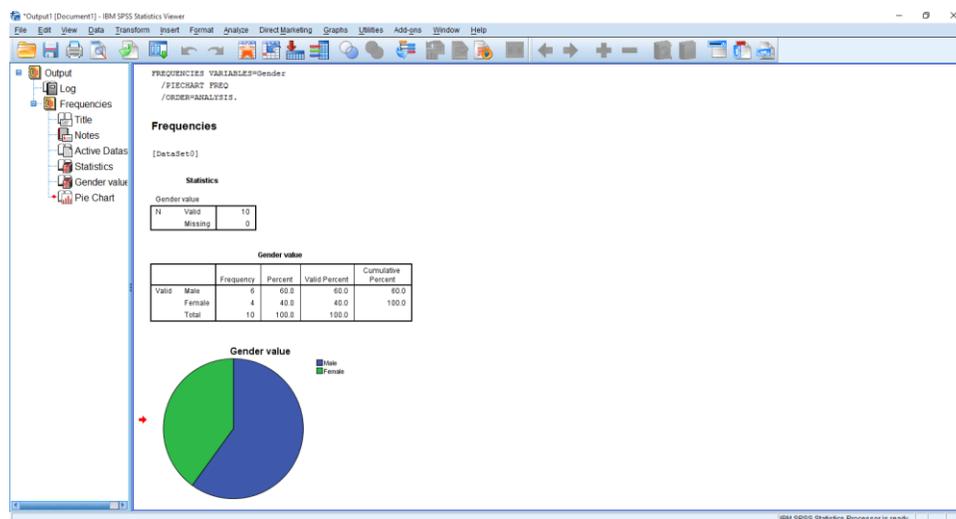
After data has been entered, users may analyze the data by using descriptive statistics.

Descriptive statistics are the most commonly used statistics for summarizing data **frequency** or **measures of central tendency (mean, median, mode and standard deviation)**

1. Frequencies

The frequencies procedure provides statistics and graphical displays that are useful for describing many types of variables. For a first look at your data, the Frequencies procedure is a good place to start. In our example, we can use frequencies to know the percentage of males and females in our sample. To find this following the coming steps:

- Click an **Analyze**, then **Descriptive Statistics**, then **Frequencies**
- Highlight the variable for which you the frequencies are needed and move it into the variable column (Lets choose gender).
- Click on **Charts** and select the type of the chart required, you can choose either Bar, Pie, or Histogram Chart. Lets choose Pie chart. Then presses continue then **OK**. An output window will show up as the following:



Computing Means and Standard Deviation

Once data is inserted, performing statistical procedure is relatively simple. The mean and standard deviation for each of the variables from Salary study will be computed. Mean, minimum, maximum, and standard deviations will be computed separately for males and females

Computing the Mean and Standard Deviation for the whole data

- Click on **Analyze**, then **Descriptive Statistics**, then **Descriptive**.
- Highlight each of the variables for which you are interested in computing descriptive statistics(e.g. Age, salary, Experience years) and move them into the **variable(s)** column. Note that you can move all of these variables over at one time by clicking and dragging over the items that you want to select.
- Click on **Options** and select the desired statistic. At minimum, you should select the Mean, maximum, minimum, and Std. Deviation. Now, click on **Continue** and then **OK**.
- The output should look like that below. You may have fewer or more statistics depending on your selection in the Options menu. Note that the variables labels appear on the printout.
- Output form the analysis: If you would like a hard copy of this output, you can **print** it by clicking on the print icon on the tool bar. Also you can **save** the output by clicking on the disk icon. Note that SPSS automatically adds the “.spv” suffix to your output file name.

The following result will be added to the Output window when apply a descriptive analysis on Salary and Age.

➔ Descriptives

[DataSet0]

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Monthly Salary	10	2500.00	6000.00	4170.0000	1303.03066	1697888.889
Age value	10	22	45	31.80	7.969	63.511
Valid N (listwise)	10					

Computing Means and Standard Deviations for males and females separately

It is important to calculate the Mean, Maximum, Minimum and Standard Deviations for groups of data. In our example, it might be important to find them when requested are Males and Females. To do this, the following steps must be followed:

- First click on **Data** and then **Split File**. This allows you to split the file according to a particular variable and conduct separate analysis for each level of the variable.
- Next select **Organize output by groups** and move Gender from the variable list to the **Group Based on** list, then click on **OK**.

- Now, click on **Analyze, Descriptive Statistics, and Descriptives**. Select the desired variable(s) and Options.
- Note in your output that two sets of data summaries are presented one for females and the other for males.

The following is how the previous analysis would be after splitting the file based on gender variable (male and female):

➔ **Descriptives**

[DataSet0]

Gender value = Male

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Monthly Salary	6	2500.00	6000.00	4250.0000	1360.51461	1851000.000
Age value	6	22	44	32.00	7.874	62.000
Valid N (listwise)	6					

a. Gender value = Male

Gender value = Female

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Monthly Salary	4	2700.00	6000.00	4050.0000	1405.93978	1976666.667
Age value	4	24	45	31.50	9.327	87.000
Valid N (listwise)	4					

a. Gender value = Female

4. Computing a New variable from existing ones

Assume, a new variable “Tax of salary” is need in our research. To create this variable and compute its numeric value the following steps must be followed:

1. Click **Transform** and then **Compute Variable**.
2. Type the name of the variable that you wish to create (in this case, we will name it “Tax”) in the **Target Variable** field. In the **Numeric Expression** field, the required mathematical expression is written. The operations listed on the bottom of this screen can be used in calculations.
3. On the **Type &label** field .Longer label for the new variable can be added. Then, press **continue** Finally press **OK**. The new variable will appear in the data file

“If/Then” variables computations

Sometimes you may wish to include only data that fits a certain criteria in your new variable:

- a) In compute variable dialog, click on the “**If...**”button.
- b) In the “**If Case**”box, click on “**include if case satisfies conditions**”.
- c) Next, write an expression that suits your purpose using the calculator and the lists of variables and functions. For example ,we will compute $(\text{salary} / 1.145) * 0.145$ only if the participant Gender is 'Male' , after this information has been entered , click “**Continue**” to return the familiar “**Compute variable**” window , where you will enter the computation for the new variable.



This how the compute variable dialog would be:



Arithmetic and Statistical functions:

The following are some of arithmetic and statistical functions that can be used in the compute window to calculate the mathematical expression for the new variable.

Function Name	Usage
ABS(expr)	Absolute value (-3.7 will become 3.7 ,for instance)
RND(expr)	Rounding
TRUNC(expr)	Truncation (decimal values are simply cut off)
MOD(expr,divid)	Remainder of the first argument (expr) when divided by the second
SQRT(expr)	Square root of expression
SUM (expr1, expr2.....)	Sum of the expression enclosed in the parentheses
MEAN (expr1, expr2.....)	Mean of the expressions enclosed in the parentheses
MIN (expr1, expr2.....)	Minimum value of the expressions enclosed in the parentheses
MAX (expr1, expr2.....)	Maximum value of the expressions enclosed in the parentheses

5. Creating Simple Bar Graph

Data are often best communicated in visual form. SPSS has a variety of graphs that can be used to display data. A simple bar graph of the data can be drawn by following the steps listed below

- a) Click on **Graphs**, then **Legacy Dialogs** and choose **Bar** .
- b) In the Bar Charts menu, click on **Simple** and then **Define**.
- c) In the Define Simple Bar menu, first select **Other Statistics** (this enables you to plot the means of your groups) and then select your dependent variable measure (“ salary”) and move it into the variable field. The default will be to compute the mean of the variable, but you can modify this (to select the median, mode, or other summary statistics) by clicking Change statistic. Given that we wish to calculate the mean, we will leave it as is.
- d) Now move the independent variable (“Experience years”) into the **Category Axis** field.
- e) If you wish to create a title of your figure, click on **Titles**, and type a title.
- f) When you are ready, click on **OK**, and compare your figure with the one below

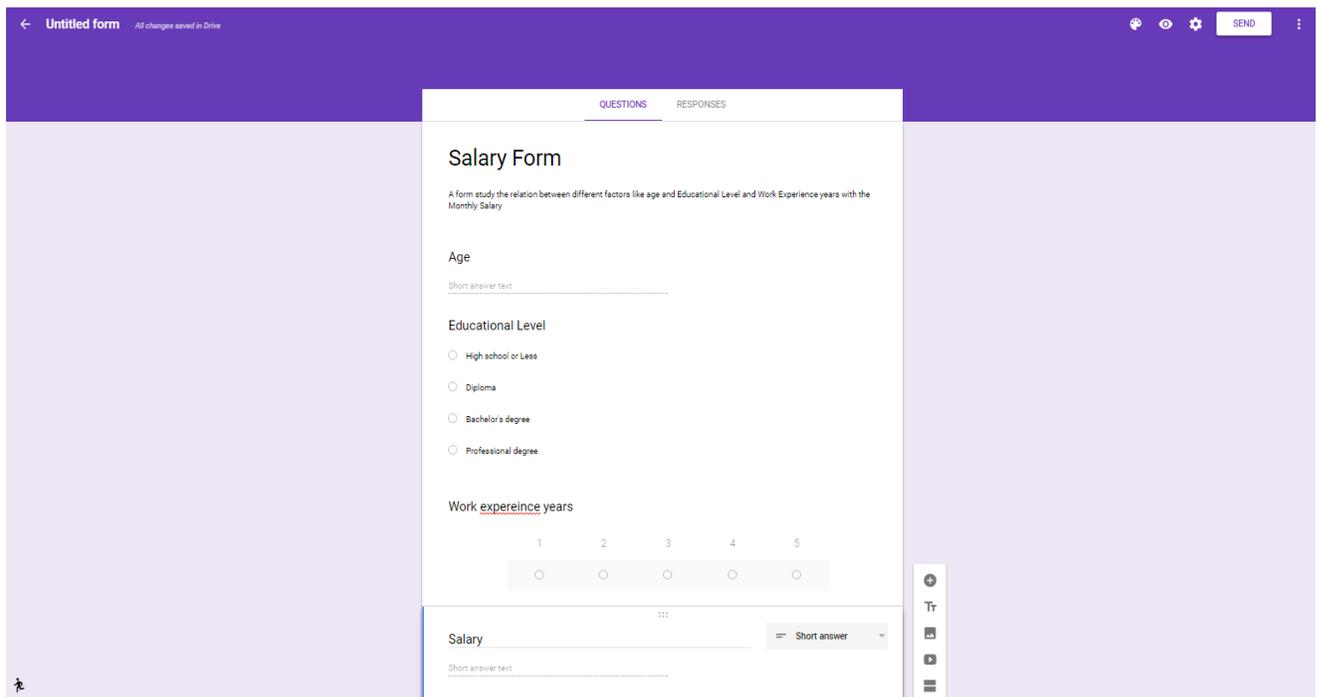
10.4 Google Forms

Create a form

We can use google forms to create a form in order to gather information from people online. This method could be better than distributing papers, since it is accessible for anyone who has internet connection.

- a) Go to <https://docs.google.com/forms>
- b) You must sign in using a google account.
- c) Create a new form, you can select a blank one, or a pre-designed form.
- d) Write Down the Title and the Description
- e) Add the variables. Each has the following attributes
 1. Name
 2. Type
 - i. Short Answer
 - ii. Paragraph
 - iii. Multiple choice (just like the idea of Label and Value applied on Gender and Educational Level and Work Experience Years)
 - iv. Scale (1-10)
 -
 3. Is required: determine whether the variable is optional or mandatory
 4. Hint text: a text shows up when you move the mouse over the variable when the user fills the form.

The form for our questionnaire would be like this:



The screenshot shows a Google Form titled "Salary Form" with the following content:

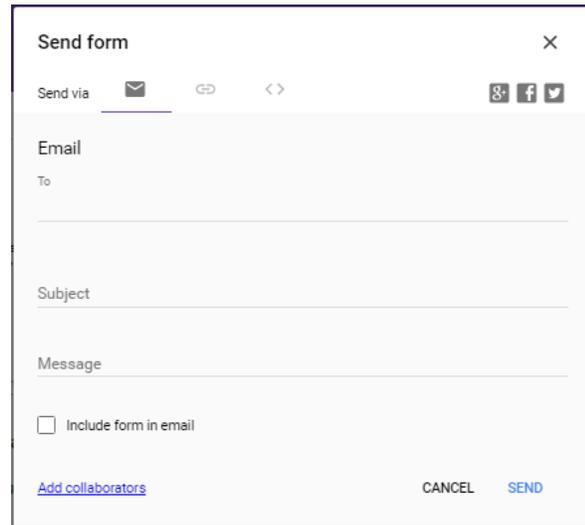
- Age**: Short answer text field.
- Educational Level**: Multiple choice options: High school or Less, Diploma, Bachelor's degree, Professional degree.
- Work experience years**: Scale from 1 to 5 with radio buttons.
- Salary**: Short answer text field.

The form is displayed in a purple-themed interface with a "SEND" button in the top right corner.

Publish the form

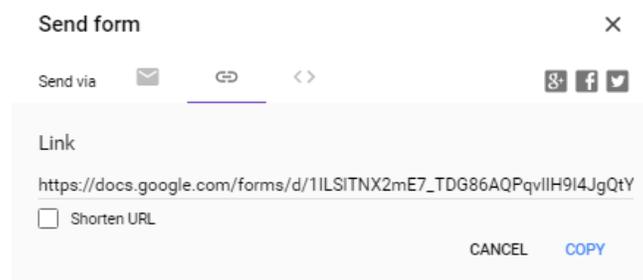
When we finish designing the form we click on send on the top right of the page, which gives us two main options to publish the form:

1. Via mail: send the form to someone using the recipient email.



The screenshot shows a 'Send form' dialog box with a close button (X) in the top right corner. Below the title, there are three options for 'Send via': an email icon (selected), a link icon, and a code icon. To the right of these icons are social media icons for Google+, Facebook, and Twitter. The main content area is titled 'Email' and contains three input fields: 'To', 'Subject', and 'Message'. Below these fields is a checkbox labeled 'Include form in email' which is currently unchecked. At the bottom left, there is a blue link 'Add collaborators'. At the bottom right, there are two buttons: 'CANCEL' and 'SEND'.

2. Via link: gives us a public web link that anyone request it can access the form.

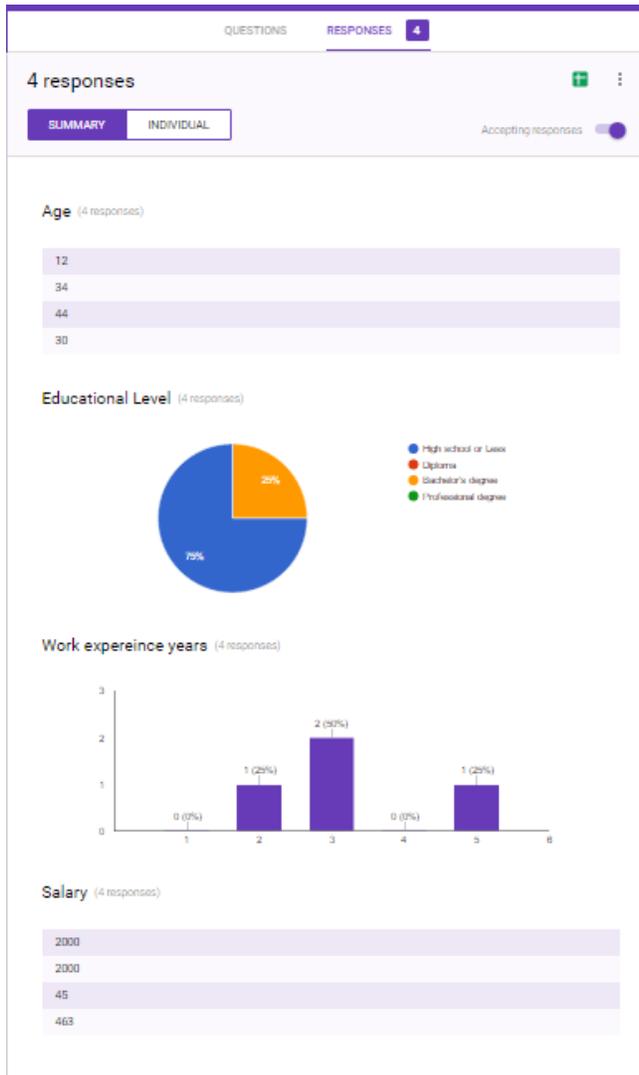


The screenshot shows a 'Send form' dialog box with a close button (X) in the top right corner. Below the title, there are three options for 'Send via': an email icon, a link icon (selected), and a code icon. To the right of these icons are social media icons for Google+, Facebook, and Twitter. The main content area is titled 'Link' and contains a text input field with the URL 'https://docs.google.com/forms/d/1ILSITNX2mE7_TDG86AQPqvIIH9I4JgQtY'. Below the URL is a checkbox labeled 'Shorten URL' which is currently unchecked. At the bottom right, there are two buttons: 'CANCEL' and 'COPY'.

Idea: we can publish this link on social media sites, to reach a lot of people

Monitoring the form

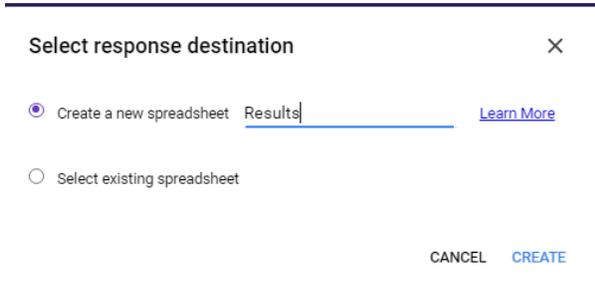
After publishing the form, we can check out the responses on Responses tab. The following is an example when a form get 3 responses:



We can select **Individual** to check out every single response.

Publish the form's responses

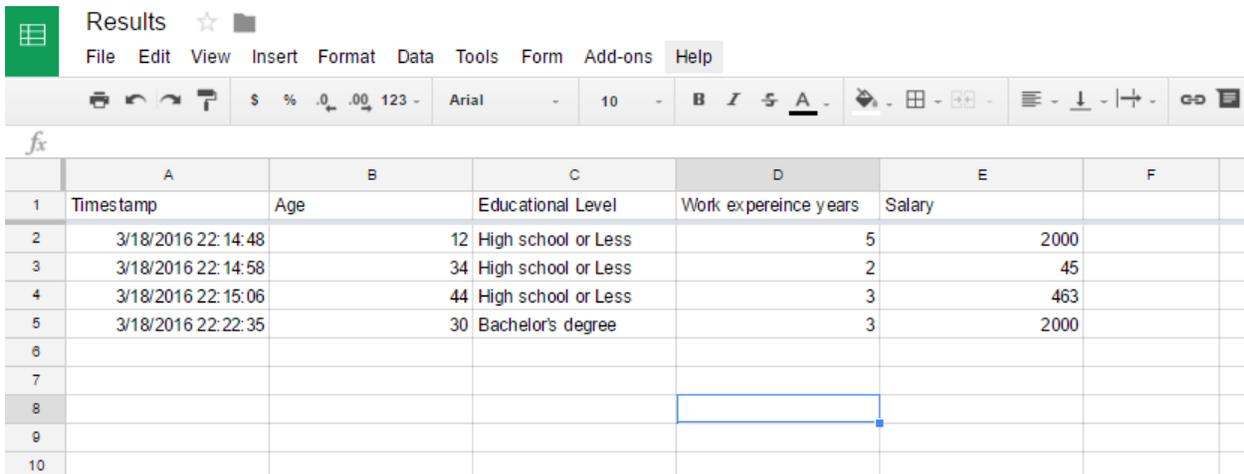
In responses tab, click on the icon , a new dialog will show up:



The dialog box titled "Select response destination" has a close button (X) in the top right corner. It contains two radio button options: "Create a new spreadsheet" (selected) with the text "Results" and a "Learn More" link, and "Select existing spreadsheet". At the bottom, there are "CANCEL" and "CREATE" buttons.

It will export the results either to a new spreadsheet or for an existing one. Lets create a new one called Results, then click on create.

A notification on the page bottom will appear, click on to go to the created spreadsheet. The following is how the sheet looks like:



The screenshot shows a Google Sheet titled "Results" with a menu bar (File, Edit, View, Insert, Format, Data, Tools, Form, Add-ons, Help) and a toolbar. The spreadsheet has columns labeled A through F and rows 1 through 10. The data is as follows:

	A	B	C	D	E	F
1	Timestamp	Age	Educational Level	Work experience years	Salary	
2	3/18/2016 22:14:48	12	High school or Less	5	2000	
3	3/18/2016 22:14:58	34	High school or Less	2	45	
4	3/18/2016 22:15:06	44	High school or Less	3	463	
5	3/18/2016 22:22:35	30	Bachelor's degree	3	2000	
6						
7						
8						
9						
10						

11 References

- [1] "Operating system," Wikipedia, February 2016. [Online]. Available: https://en.wikipedia.org/wiki/Operating_system. [Accessed February 2016].
- [2] K. Ward, "Understanding Shut Down Options in Windows 7," About Tech, December 2014. [Online]. Available: <http://windows.about.com/od/windowsforbeginners/a/Win7ShutDownOptions.htm>. [Accessed February 2016].