COMPUTER BASICS

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Ministry of Health & Population
وزارة الصحة والسكان

HEALTH COMMUNICATION CAPACITY COLLABORATIVE
Egypt

Acknowledgments

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First Year

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Contents

Chapter 1
Introduction to Computers

Introduction

The introduction of automated computing has radically changed not only how humans solve problems but also what kinds of problems we can solve. Computing has changed the world more than any other invention of the past hundred years; it is present in nearly all aspects of life.[1]

Everyone should study computing because nearly all of the most exciting and important technologies, arts, and sciences are, and likely will be, driven by computing. Understanding computing helps to illuminate deep insights and questions into the nature of our minds, our culture, and our universe.

Computers have been used for medical applications since about the 1950s. The health-care industry uses computers for a wide variety of applications, most commonly in electronic medical records and clinical decision support systems. Electronic medical records and their associated tools enable physicians to integrate data from individual patient histories and related case histories, making it possible for them to provide the best possible treatment and care for their patients. Personal digital assistant (PDA) or mobile devices are widely used by physicians and nurses for tasks such as looking up drug information, reading health journals and textbooks, viewing practice guidelines, using medical calculators, and reading and sending email.

Computer systems are useful for hospital administration, from hospital bed tracking and inventory control to admissions, facility scheduling, and billing and payroll.

The growth of the Internet has made previously limited services more accessible to both providers and patients. It has:

- enabled the growth of telemedicine, including teleradiology, remote surgery, and patient monitoring, expanding access to patients and providers in more remote areas;
- provided greater access to peer-reviewed journal articles through online databases, such as PubMed;
- enabled patients to research their own symptoms through a wide range of websites that provide an almost unlimited amount of health information;

[1] Adapted from: Evans, D. (2013) *Introduction to Computing,* Available from http://www.computingbook.org/Computing.pdf

- made it possible for patients to compare the price, quality, and availability of hospitals and doctors;
- enabled the development of online portals like WebMD, which give patients the options of entering and tracking their own medical histories;
- made it possible for companies to offer websites where critically ill patients and their caregivers can post updates on their status and, thus, communicate important information to concerned friends and relatives; and
- with the aid of super computers, helped biomedical research to unravel the mysteries of genetic diseases.

The potential role for computers expands beyond the management of electronic records, supplies, and facilities. Medical nanotechnology can be used to monitor bodily functions and alert the patient or physicians of critical changes in the patient's health. For example, a tiny chip can be implanted in a patient to continuously measure blood-sugar levels and trigger insulin release, as necessary. Another technical development is a wearable personal monitoring instrument that continuously measures blood pressure, pulse, body fat percentage, and so on. Such data can be automatically uploaded wirelessly to a person's electronic medical record, where a program analyzes the data at regular intervals and sends notifications to the individual and their physician if something is wrong or abnormal.

Some clinics and physician offices have made it possible for patients to even schedule appointments via the Internet, similar to how you would make a hotel reservation. Some offices now ask patients to sign in via touch pads, rather than pieces of paper. In the future, we may be asked to sit in a special chair that will measure our vital signs and enter them into our electronic record.

The term "health information technology" (Health IT) refers to the electronic systems health care professionals—and increasingly, patients—use to store, share, and analyze health information.

Health IT includes:[2]

- **Electronic health records** (EHRs) – EHRs allow doctors to keep better track of your health information and make it easier for your doctor to share information with specialists.
- **Personal health records** (PHRs) – A PHR is similar to an EHR, except that you control what kind of information goes into it. You can use a PHR to keep track of information from your doctor visits, but the PHR can also reflect your life outside the doctor's office and your health priorities, such as tracking what you eat and how much you exercise. Sometimes, your PHR can link with your doctor's EHR.
- **Electronic prescribing** (E-prescribing) – E-prescribing allows your doctor to communicate directly with your pharmacy. By eliminating the paper prescription, patients are no longer responsible for making sure the prescription is given to the pharmacist (eliminating potential loss) and pharmacists no longer have to worry about misreading a paper prescription (reducing physician to pharmacy communication error).

[2] The three bulleted points are adapted from: Texas Health and Human Services, Health Information Technology. (2016). *What is Health IT?* Available from http://healthit.hhsc.texas.gov/what-health-it

Computer technology has made medical and clinical reference information easily accessible and searchable in any clinical setting. Examples of such reference information include drug databases, advisory systems, disease databases, and so on. This is perhaps the most widely accepted clinical use of information technology.

Computer Basics

A computer is an electronic device that stores or retrieves data, and processes data to get useful information for various purposes. A computer is composed of hardware and software.

Computer Types

Computers are available in a variety of sizes and configurations, such as microcomputers, mainframes, and supercomputers.

Microcomputers

Microcomputers are the most commonly used, as they are the cheapest, most portable, and the fastest evolving type of computer available. They are designed for use in homes, offices, and the field. Desktop computers, laptops, gaming consoles, sound and navigation systems for cars, PDAs, tablets, smartphones, and calculators are all types of microcomputers.

Desktop Computer

Laptop Computer

Gaming Console

Car Sound and Navigation System

PDA

Tablet

Smart Phone

Calculator

Mainframes

Mainframes can process and store a huge amount of data. They are large machines that must be accommodated in secured and air-conditioned rooms. Many large organizations—such as health institutions, banks, educational institutions, and insurance companies—use mainframes to store data and run their daily operations.

Mainframe Computer

Supercomputers

Supercomputers are the most powerful computers, in terms of performance and data processing. These computers are used for research and exploration purposes because they can hold and process massive amounts of data. They are used for personalized medicine, space exploration, earthquake studies, weather forecasting, nuclear weapons testing, and flight simulation.

Super Computers

Hardware

Hardware is the physical components of a computer, such as the system unit, mouse, keyboard, and monitor. Although we will focus our study on the PC (desktop and laptop), its components are very similar to the components of other types of computers.

Input Units

The input units are devices that allow users to enter data, information, or commands into the computer. These devices include the keyboard, mouse, touchpad, microphone, scanner, joystick, light pen, digitizer, bar code reader, and webcam.

Keyboard

The keyboard is a panel of keys used to input data into the computer.

Keyboard

Mouse

The mouse is the most popular pointing device used to move a cursor on the computer screen. It usually has two buttons, called the left and the right button, with a wheel located between the buttons.

Mouse

Touchpad

The touchpad is a pointing device that can translate the motion and position of a user's fingers to a relative position on the screen. It is commonly used in laptop computers.

Touchpad

Microphone

The microphone is used to input sound and store it in a digital form. Although it is commonly a built-in device in laptop computers, some people prefer to use an external microphone to extend reach or increase the quality of sound captured.

Microphone

Scanner

The scanner captures hardcopy images and converts them to digital form that can be stored on the disk.

Scanner

Controller

A controller is similar to a mouse. It is mainly used in playing computer games to control the movement of an object or person.

Controller

Light Pen

When the light pen is moved over the monitor screen and the pen button is pressed, its photocell-sensing element detects the screen location and sends the corresponding signal to the computer.

Light Pen

Digitizer

The digitizer is also known as graphics tablet. It converts graphics and pictorial data into binary inputs, and is used for fine works of drawing and image applications.

Digitizer

Bar Code Reader

The bar code reader scans a bar code image and converts it into an alphanumeric value for input into the computer.

Bar Code Reader

Webcam

A webcam is a video camera that feeds or streams images in real time to a computer. It is often connected to the computer by a USB cable but can be built into computers, usually laptops.

Webcam

Output Units

Output units are devices that allow information to display in a human readable form. Such devices include printers, speakers and monitors.

Monitor

The monitor is the main output device of a computer. It forms images from tiny dots, called pixels, that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels.

Monitor

Speaker

The speaker is the device that outputs sound from the computer.

Speakers

Printer

The printer is an output device that prints information on paper.

Printer

Projector

The projector is an optical device that projects an image or moving images onto a surface.

Projector

Storage Devices

A storage device is any computing hardware or digital media that is used for storing and moving data files and objects. It can hold and store information both temporarily and permanently, and can be internal or external to a computer.

Hard Drive

A hard drive permanently stores and retrieves data on a computer. It consists of one or more platters to which data is written using a magnetic head, all inside of an air-sealed casing.

Hard Drive

Floppy Disk Drive

A floppy disk drive enables a user to save data to removable diskettes.This type of drive is no longer included in new computers.

Floppy Disk Drive

Compact Disc, DVD, and Blu-ray Drive

These plastic discs can store large amounts of data. The primary differences between the type of discs are the types of technologies in which they can be used and the amount of data each can store.

Compact Disk

USB Flash Drive

A USB flash drive is a portable storage device that connects to a computer via a USB port. They are an easy way to store and transfer information. Flash drives are also known as memory sticks, sticks, thumbdrives, or jumpdrives.

Flash Drive

Central Processing Unit

The central processing unit (CPU) performs arithmetic and logical operations on data in order to convert it into useful information. It is considered the brain of the computer. The CPU performs multiple types of data processing operations. It stores data, intermediate results, and instructions (program) and controls the operation of all parts of the computer.

Motherboard

The motherboard serves as a single platform to connect all of the parts of a computer together. It connects the CPU, memory, hard drives, optical drives, video card, sound card and other ports and expansion cards directly or via cables. It is considered the backbone of a computer.

Random Access Memory

Random Access Memory (RAM) is the internal memory of the CPU for storing data, programs, and program results. It is a read/write memory that stores data while the machine is working. As soon as the machine is switched off, the data is erased.

Expansion Cards

An expansion card is a board that can be inserted into an expansion slot of a computer motherboard to add new functionality to a computer system. But in laptops and new systems, built-in functionality and capacity is generally cheapest and preferred.

Power Supply Unit

A power supply unit (PSU) converts alternating current electric power to low-voltage direct current power for the internal components of the computer. Laptops are capable of running from a built-in battery for a period of hours.

Case

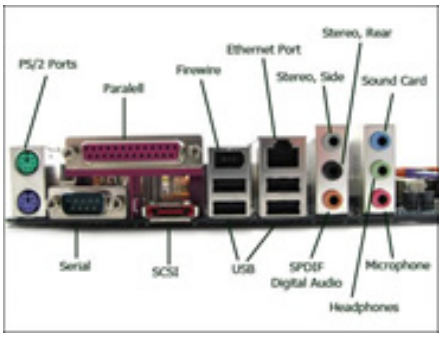
The computer case encloses most of the components of the system such as the motherboard, disk drives, and power supplies and controls and directs the flow of cooling air over internal components.

Case

Ports

The ports are physical docking points through which an external device can be connected to the computer.

A port can also be a programmatic docking point through which information flows from a program to the computer or over the Internet.



Ports

Software

Software is a set of programs designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem. Examples are operating systems, application software, device drivers, and utilities.

Operating System

An operating system is low-level software that supports a computer's basic functions, such as scheduling tasks and controlling peripherals, managing computer hardware and software resources, and providing common services for computer programs. Each computer type has a common operating system, such as Unix, Linux, Mac OS, and Microsoft Windows, and each operating system has a version based on the features and the environment it will be used in. In this manual, we will focus on Microsoft Windows.

Application Software

Application software products are designed to satisfy a particular need of a particular environment. All software applications prepared in the computer lab can come under the category of application software. In this manual, we will focus on some Microsoft Office applications.

Device Drivers

A device driver is a specific type of computer software that allows communication between the computer and an external device, such as a printer, by sending and receiving data.

Utilities

Utilities are system software designed to help analyze, configure, optimize, or maintain a computer.

They are also used to support the computer infrastructure. This is in contrast to application software, which is aimed at directly performing tasks that benefit ordinary users.

Units for Measuring Computer Storage or Speed

In computing and telecommunications, the units of measure are different based on what you want to measure.

Data Storage Units

The bit is the smallest unit to measure storage—it is just one binary digit (0 or 1). Eight bits equals 1 byte. All other units of measure are multiples of a byte:

- 1 bit (b) 0 or 1 = 1/8 of Byte
- 1 Byte (B) = 8 bits
- 1 Kilobyte (K = 1024 Bytes
- 1 Megabyte (MB) = 1024 KB
- 1 Gigabyte (GB) = 1024 MB
- 1 Terabyte (TB) = 1024 GB
- 1 Petabyte (PB) = 1024 TB
- 1 Exabyte (EB) = 1024 PB
- 1 Zettabyte (ZB) = 1024 EB
- 1 Yottabyte (YB) = 1024 ZB

Hard Drive Units

Hard drive storage units are measured as data storage units. Factors such as latency and data transfer rate, however, can affect hard drive performance. Latency is the delay caused by rotation of the disk to bring the required disk sector under the read/write mechanism. It depends on the rotational speed of a disk, which is measured in revolutions per minute (rpm). The data transfer rate is the rate at which the disk buffers, and it is measured in Mbits per second).

CPU Speed Units

The speed at which a CPU works is measured in hertz (Hz). Modern processors run so fast that gigahertz (GHz) is used instead. One gigahertz is one billion cycles per second. Factors that can control CPU performance include cache memory and multiple cores.

Network Speed Units

In telecommunications, data transfer rates are commonly measured as multiples of bits per second (bit/s) and bytes per second (B/s). For example, the data rates of modern residential high-speed Internet connections are commonly expressed in megabits per second (Mbit/s).

Additional Reading

- http://alfekrpc.ahlamontada.com/t1082-topic
- http://egygate.123.st/t1252-topic
- http://www.al-jazirah.com/digimag/09022003/alteb481.htm
- http://www.boosla.com/showArticle.php?Sec=Hardware&id=13
- http://computer.atlas4e.com/
- http://www.kutub.info/library/book/1884

Chapter 2
Operating Systems

Introduction

An operating system is low-level software that supports a computer's basic functions, such as scheduling tasks and controlling peripherals; manages computer hardware and software resources; and provides common services for computer programs. An operating system is an intermediate interface between users and hardware that can help users access hardware without needing to write tough codes. Each computer type has a common operating system, and each operating system has a version based on the features and the environment it will be used in. In this manual, we will focus on Microsoft Windows.

Operating System Features

Basic features for most operating systems can manage hardware resources, such as memory, processor, storage, and internal devices, and provide access to these resources for other software applications. In addition, operating systems control the system security and the file management.

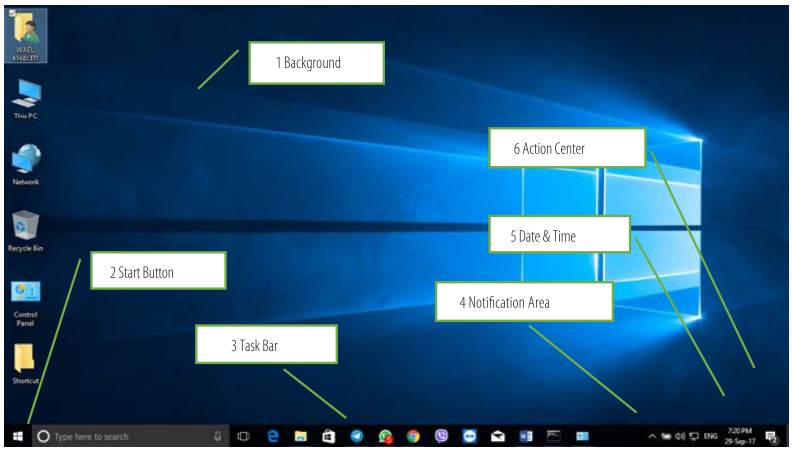
Microsoft Windows 10

Windows 10 (released in 2015) is still the most recent version of the Microsoft Windows operating system for PCs and tablets. There have been many different versions of Windows over the years, including Windows 8 (released in 2012), Windows 7 (released in 2009), Windows Vista (released in 2006), and Windows XP (released in 2001).

Windows 10 Desktop

While Windows 10 has the same appearance as the older versions, it has many new features.

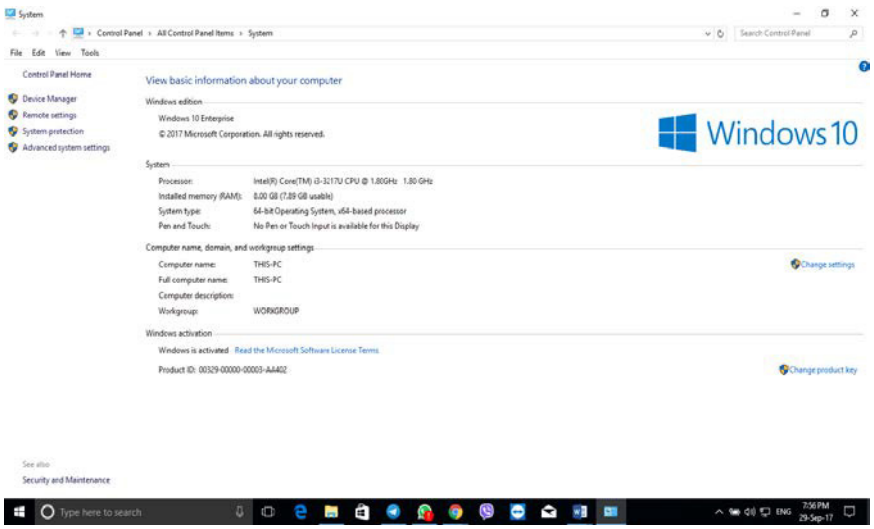
1. Windows Background
2. Windows Start Button
3. Windows Task Bar
4. Windows Notification Area
5. Windows Date and Time
6. Windows Action Center



Windows 10 Desktop

View Basic Information About Your Computer

To check your PC configuration, Right Click on the computer icon on the desktop or in the Windows Start Menu and select Properties, or use the WIN + Pause button. On the System window, you can view the basic information about your computer, such as Windows edition (which edition of Windows 10 is running on the computer), processor, system type (if your Windows is 32-bit or 64-bit), full computer name, Windows activation (if your Windows 10 is activated or not), and so on.

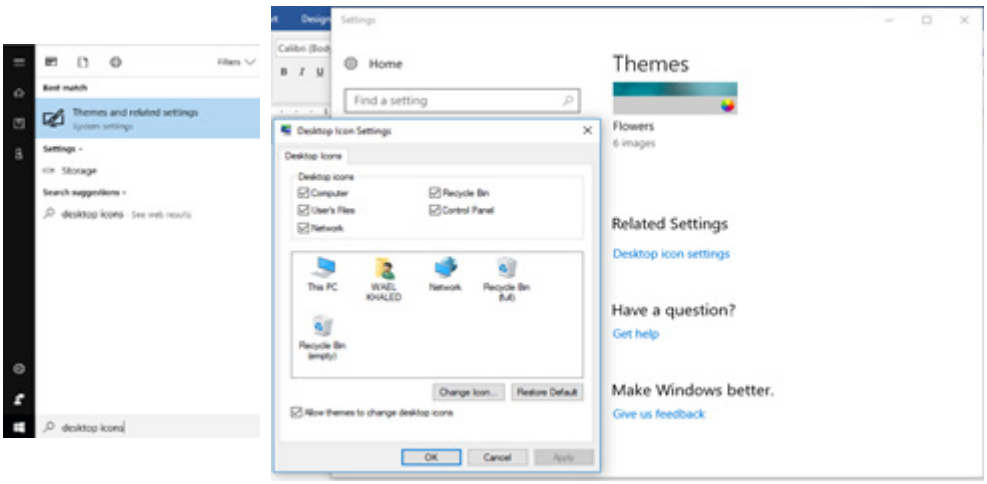


View Basic Information About Your Computer

Tip: You can use WIN + R to start run dialog and type msinfo32 or dxdiag to get more detailed system information.

Desktop Icons

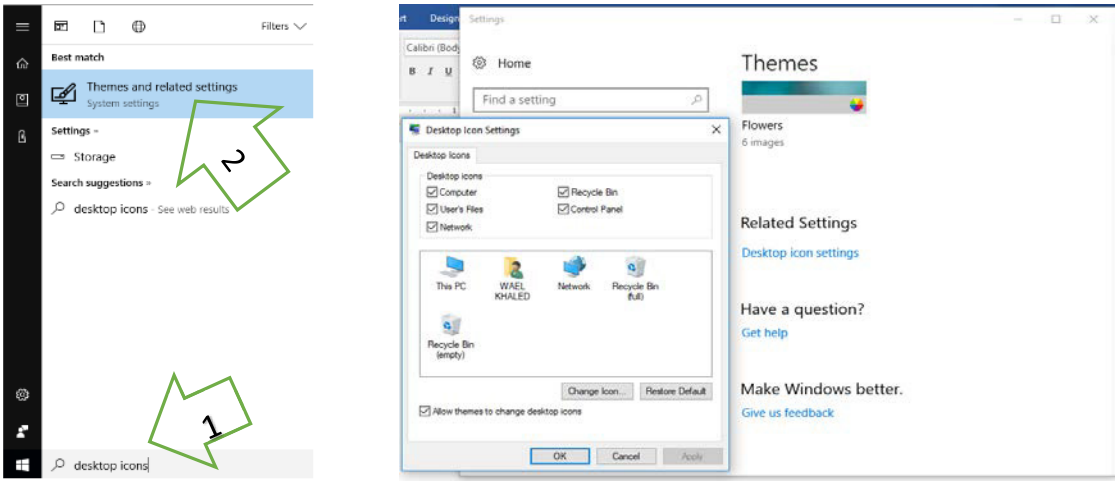
To customize your desktop icons on Windows 10, Select Start > Settings > Personalization > Themes > Desktop Icon Settings and you can configure your desktop icons. Or, you can use the new feature of Windows 10 and just select Start and type in the search area "Desktop Icons," then press Themes and Related Settings.



Desktop Icons

Display Setting

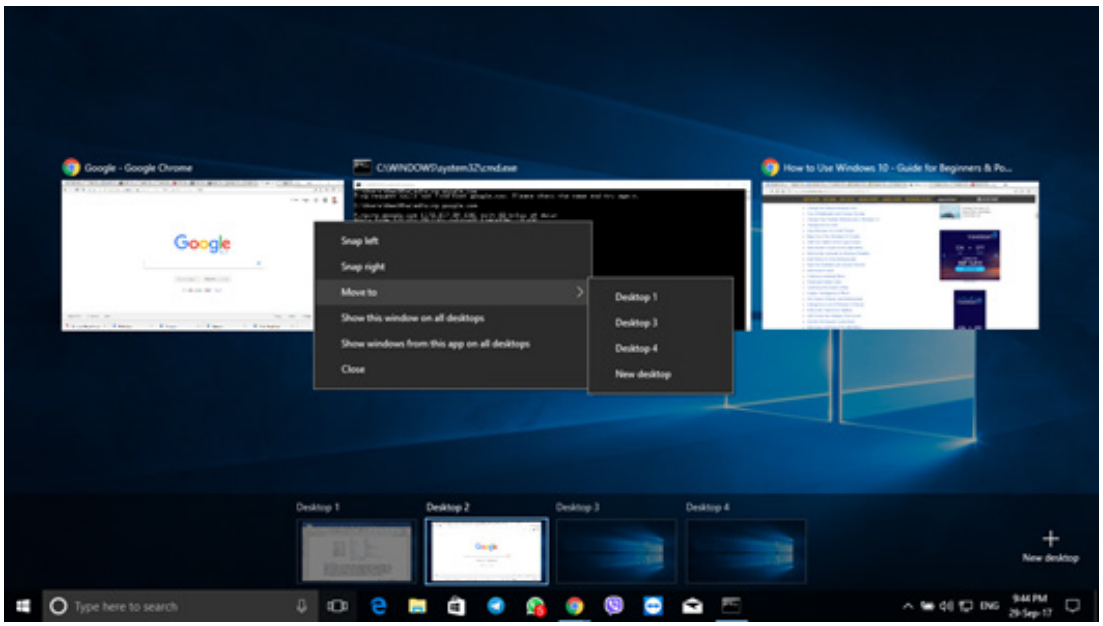
To open Display Setting, go to your Desktop, right-click your mouse and go to Display Settings. Here you can adjust the size of text, applications, and other items as well as change the orientation. To change the resolution settings, scroll down this window and click on Advanced Display Settings.



Display Setting

Virtual Desktops

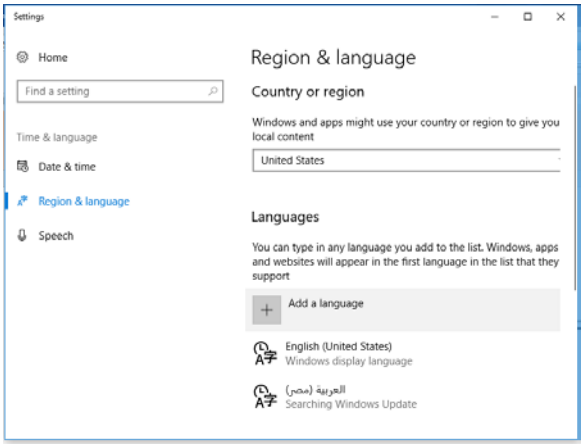
Windows 10 added this new feature to help organize your desktop. If you keep a lot of apps open on your PC, virtual desktops create multiple separate desktops that each can display different open windows and applications. You can switch between your applications by pressing the WIN + Tab button. You can add a new virtual desktop by pressing Ctrl + WIN + D button. You can also move your already opened applications by pressing right click in desktops mode and moving them to any new desktop.



Virtual Desktops

Region and Language Option

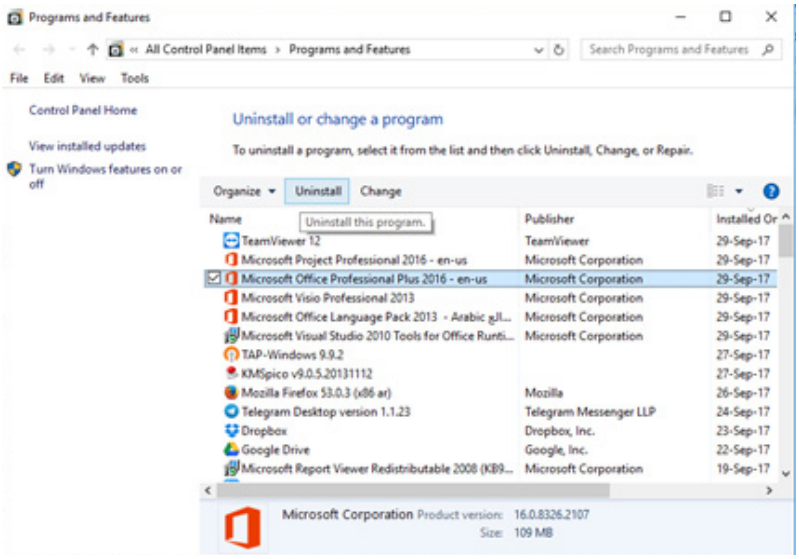
You can add multiple languages in Windows 10 by clicking the Windows logo > Settings > Time & Language > Region & Language > Add a Language. You can also change the time zone and other options.



Region and Language

Installing and Uninstalling Applications

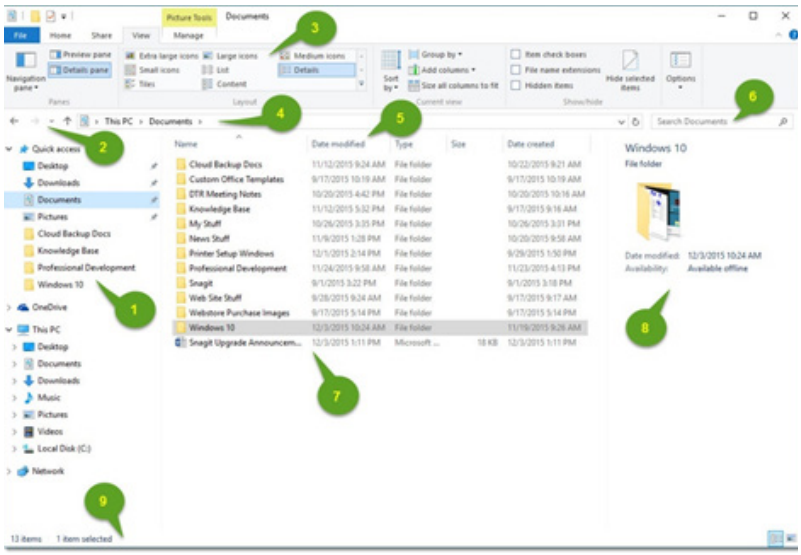
To install an application on Windows 10, just click on the executable file that came with your application (setup.exe, install.exe etc.) and follow the prompts. To check your installed application or to uninstall it, open the Start Menu > Settings > System > Apps & Features from the left pane. If you wish to uninstall the application, select it and click the Uninstall button that appears. Or you can use WIN + R, then type "appwiz.cpl". You can use the same windows to change your Windows features.



Programs and Features

Working with File Explorer

In Windows 10, we can use File Explorer in the same way as in the older Windows version to cut, copy, delete, paste, create shortcut, rename, view properties, and send files to other locations. You can open File Explorer by selecting the folder icon in the task bar or by pressing WIN + E button.



File Explorer

1. **Navigation pane:** From the Navigation pane, you can view your computer's file and folder structure and access files and folders.
2. **Forward and Back buttons:** Enable you to go to folders you've already opened. If you go to a different folder, you can choose the Back button to return to the last folder you accessed.
3. **Ribbon:** Enables you to perform layout, formatting, and sharing tasks, as well as see how File Explorer displays your files and folders.
4. **Address bar:** Enables you to go to a different folder in the same Explorer window.
5. **Column headings** Titles of each of the columns displayed in the file and folder list.
6. **Search box:** Allows you to search for subfolders, documents, images, programs, Web pages, and bookmarks in the current folder.
7. **File and folder listing:** Shows you the files and folders in the current folder (the folder you selected in the Navigation pane).
8. **Preview/Details pane:** Enables you to quickly preview an item, such as a photo. To open the Preview pane, click on the View menu at the top of File Explorer, then click on the Preview pane button.
9. **Status bar:** Displays information about a selected folder and its contents, such as the total number of items in the folder, the number of items selected and total file size.

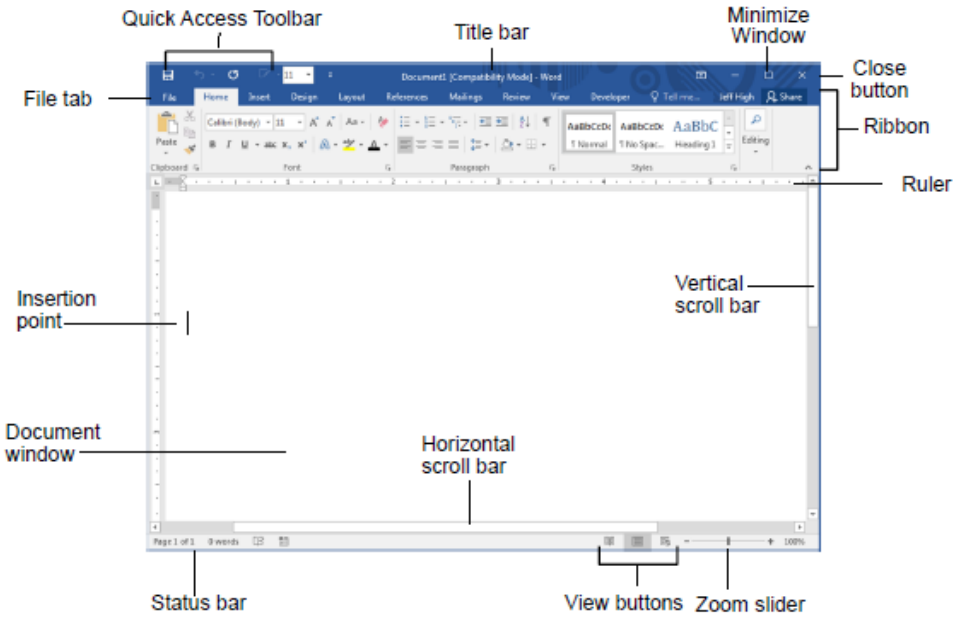
Additional Reading

- https://iabdelkadir.blogspot.com.eg/2017/02/windows-10-books.html
- http://www.arabes1.com/2015/08/windows-10-test-the-new-before-de-install.html
- http://www.kutub.info/library/book/19420

Chapter 3
Microsoft Word 2016

Introduction

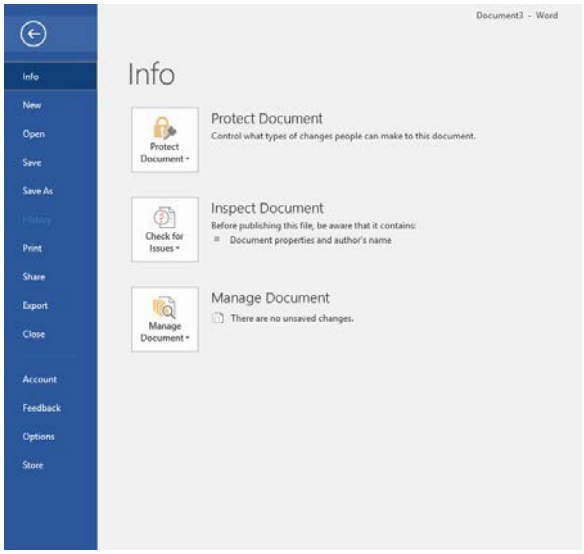
Microsoft Word 2016 is a word processing application inside Microsoft Office 2016 that allows you to create a variety of documents, including letters, resumes, and more. Word 2016 is similar to Word 2013 and Word 2010.



Microsoft Word 2016

Working with Microsoft Word Document

This module explains how to create, open, save, and close Microsoft Word documents. To do these operations we use the File tab.



Working with Microsoft Word Document

How To:

- **Create a New Document**: Click the File tab, select New, select a template and click the Create button, or you can use Ctrl + N.
- **Open a Document:** Click the File tab and select Open, then browse to your file path, or Press Ctrl + O.
- **Save a Document:** Click the Save button on the Quick Access Toolbar, or press Ctrl + S. Or you can use Save As to save the document with another name or file format, or press F12.
- **Print or Preview a Document:** Click the File tab and select Print, or press Ctrl + P.
- **Send your Document as Email or Save it in the Cloud:** Click File tab and select Share.
- **Export Document to another format:** Click File tab and select Export. Close Document: Click File tab and select Close, or press Ctrl + W or Ctrl + F4.

Lab Exercise: Create a Microsoft Word Document

The Ribbon

This module explains how to work with the Ribbon in Microsoft Word. It's where a majority of Word's commands exist and where settings are made. These items appear as buttons, input boxes, and menus. The Ribbon is divided into tabs. Each tab holds separate groups. Within the groups, you will find the command you need.

How To:

- **Use the Ribbon:** First click a tab. Then locate the command you need by scanning the group names, and then finding the button. Click the button to activate the command or to display a menu from which you can choose a command.
- Some items on the Ribbon let you input text or values, or make other settings.
- Galleries on the Ribbon display a smattering of tiles. To see them all, click the Show Gallery button in the lower-right corner of the gallery.
- Use the dialog box launcher icon in the lower-right corner of a group to open a dialog box relevant to the group's function.

Lab Exercise: Explore the Ribbon

The Backstage View (The File Menu)

This module explains how to work with the many features located in the Backstage view. After you click the File tab, you can see the Microsoft Office Backstage view. The Office Backstage view is where you manage your files and the data about them such as their creation, saving, inspecting for hidden metadata or personal information, and setting options. In short, it is everything that you do to a file that you do not do in the file. By clicking the File tab and selecting any command, you will find extra options for each command that is the Backstage view.

Lab Exercises: Open Document, New Document, and Print a Document

Formatting Microsoft Word Documents

This module explains how to work with formatting in Microsoft Word.

How To:

- **Format Text:** Use the commands in the Font group on the Home tab, or select the text, then press Ctrl + Shift + P to change the font, font size, color and style, etc.
- **Copy Formatting:** Select the text with the formatting you want to copy and click Format Painter 

in the Clipboard group on the Home tab, or press Ctrl + Shift + C. Then select the text you want to apply the copied format to, or press Ctrl + Shift + V.
- **Indent a Paragraph:** Click the Increase Indent button  in the Paragraph group on the Home tab.
- **Decrease an Indent:** Click the Decrease Indent button  in the Paragraph group on the Home tab.

- **Create a Bulleted or Numbered List:** Select the paragraph you want to bullet or number and click the Bullets  or Numbering  button in the Paragraph group on the Home tab.
- **Change Page Orientation:** Click the Page Layout tab on the Ribbon, click the Orientation button  in the Page Setup group, and select an option from the list.

Lab Exercises: Working with Fonts, Working with Paragraphs, Working with Bullets and Numbering

Microsoft Word Keyboard Shortcuts

This module shows multiple keyboard shortcuts in Microsoft Word so you can work faster.

General

- Open a Document Ctrl + O
- Create New Document Ctrl + N
- Save a Document Ctrl + S
- Save As Document F12
- Print a Document Ctrl + P
- Close a Document Ctrl + W
- Help F1

Editing

- Cut Ctrl + X
- Copy Ctrl + C
- Paste Ctrl + V
- Undo Ctrl + Z
- Redo or Repeat Ctrl + Y

Formatting

- Bold Ctrl + B
- Italics Ctrl + I
- Underline Ctrl + U
- Align Left Ctrl + L
- Center Ctrl + E
- Align Right Ctrl + R
- Justify Ctrl + J

- Copy Format Ctrl + Shift + C
- Paste Format Ctrl + Shift + V

Navigation

- Up One screen Page Up
- Down One Screen Page Down
- Beginning of the Line Home
- End of Line End
- Beginning of Document Ctrl + Home
- End of Document Ctrl + End
- Go To F5 or Ctrl + G
- Find Ctrl + F
- Replace Ctrl + H

Select

- Select All Ctrl + A
- Select Line up Shift + UP
- Select to Paragraph Start Ctrl + Shift + Up
- Select Line Down Shift + Down
- Select to Paragraph End Ctrl + Shift + Down
- Select Next Word Ctrl + Shift + Right
- Select Previous word Ctrl + Shift + Left

Lab Exercise: Working with Keyboard Shortcuts

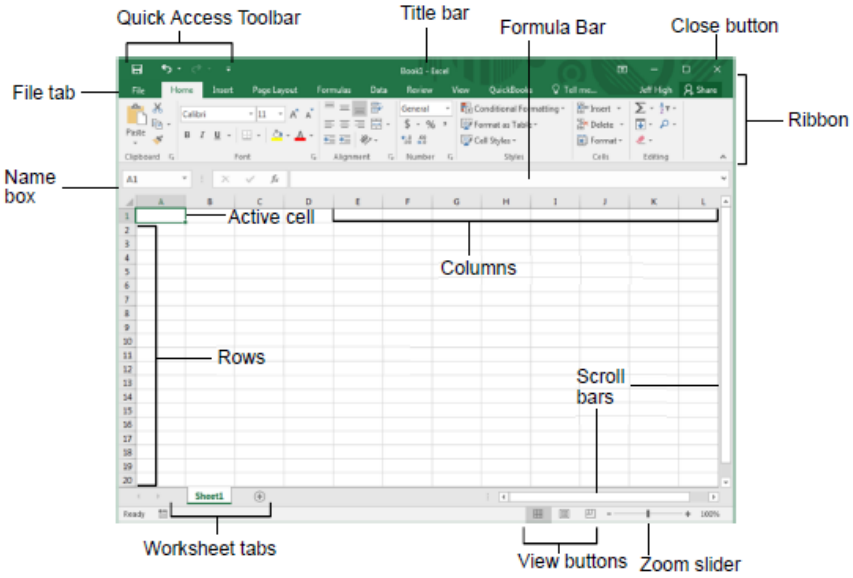
Additional Reading

- http://www.arabefuture.com/2017/02/create-booklets-using-microsoft-word-2016.html
- http://111000.net/office/word/word2007v/158-wordv/719-word2016in1h
- http://download-internet-pdf-ebooks.com/48-1-library-books

Chapter 4
Microsoft Excel 2016

Introduction

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



Microsoft Excel 2016

Microsoft Excel 2016 and Microsoft Word 2016

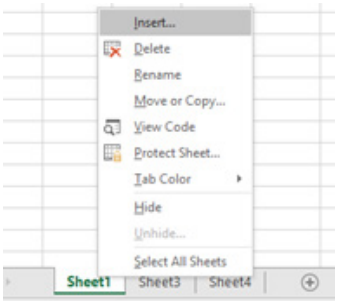
Because Excel and Word 2016 have a very similar interface, the same Backstage view, and a similar Ribbon, we will use the same knowledge about Microsoft Word 2016 to start working with Microsoft Excel 2016.

An Excel workbook contains multiple worksheets, and each worksheet is composed of rows and columns, with each row intersecting each column in a cell. These cells are referenced by column letter and row number, such as A1, A2, B1, B2, and so on.

Lab Exercise: Working with Microsoft Excel 2016 file

Creating a Microsoft Excel Worksheet

This module explains how to create worksheets in Microsoft Excel.



Microsoft Excel Worksheet

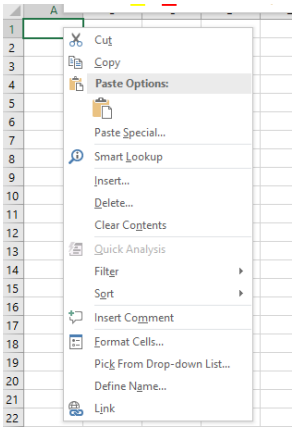
How To:

- **Add or Delete Worksheets:** Right click on the worksheet name as shown in the above figure and select Insert or Delete. (You can add a new worksheet by pressing the + sign at the left corner of the figure).
- **Copy or Move Worksheets:** Right click on the worksheet and select Move or Copy.
- **Change the Order of Worksheets:** Drag the worksheet to the new place.

Lab Exercise: Creating a Microsoft Excel Worksheet

Entering Data in Microsoft Excel Worksheets

This module explains how to how to enter data in Excel worksheets.



Delete and Format Cell

How To:

- **Enter Text:** Select the cell and start to write.
- **Expand Data Across Columns**: Select multiple cells in the same row and press on the Home tab.

- **Add and Delete Cells:** Select the cell and right click on it. To add a new cell, press Insert and then select the proper action (Shift cells right, Shift cells down, Entire row or Entire column). To delete a cell, press Delete and select the proper action (Shift cells left, Shift cells up, Entire row or Entire column).
- **Add an Outline:** Select cells to which you want to add an outline and then select the Borders button from the Home tab.
- **Use Auto Complete:** Select the cells you want to auto complete and from the left corner drag down.

Lab Exercise: Entering Data in Microsoft Excel Worksheets, Entering Text and Using Auto Complete, Entering Numbers and Dates

Using Formulas in Microsoft Excel

This module explains how to use formulas in Excel.

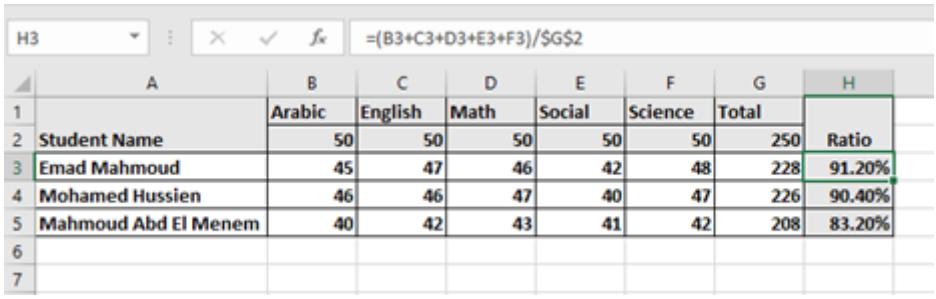
How To:

- **Perform Math Operations and the Order of Operations:** To add a math operation in the cell you must start the formula with the = sign and write the formula taking into consideration:
    1. Parentheses – operations contained in parentheses are executed first
    2. Exponents – exponents are executed second
    3. Multiplication / Division
    4. Addition / Subtraction
- **AutoSum** (and Other Common Auto-Formulas): Select a cell next to the numbers you want to sum, click AutoSum 

on the Home tab, press Enter.
- **Copy Formulas and Functions:** Select the cell that contains the formula you wish to copy. On the HOME tab, in the Clipboard group, click Copy 

command; select the cell into which you wish to copy the formula. On the HOME tab in the Clipboard group, click Paste  command.
- **Distinguish Relative and Absolute Cell References:** There are two types of cell references: relative and absolute. Relative and absolute references behave differently when copied and filled into other cells. Relative references change when a formula is copied to another cell such as (A2- B5- etc.). Absolute references, on the other hand, remain constant, no matter where they are copied (A2 "The column and the row do not change when copied," A$2 "The row does not change when copied," $A2 "The column does not change when copied.")

Example:



	A	B	C	D	E	F	G	H
1		Arabic	English	Math	Social	Science	Total	
2	Student Name	50	50	50	50	50	250	Ratio
3	Emad Mahmoud	45	47	46	42	48	228	91.20%
4	Mohamed Hussien	46	46	47	40	47	226	90.40%
5	Mahmoud Abd El Menem	40	42	43	41	42	208	83.20%
6								
7								

Using Formula in Microsoft Excel 2016

Lab Exercises: Using Formulas in Microsoft Excel, Working with Formulas

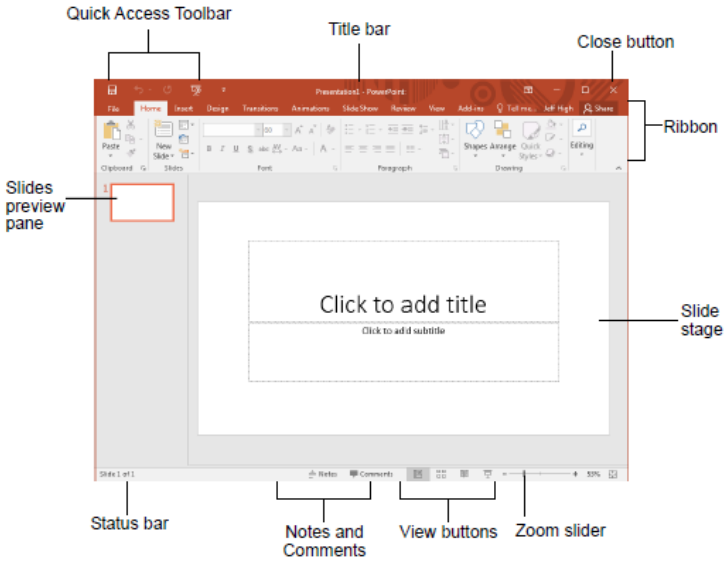
Additional Reading

- https://www.youtube.com/playlist?list=PL4nZcwxRcuFRtphCFtM1KMxenJLv1rGd-
- http://download-internet-pdf-ebooks.com/49-1-library-books
- http://www.engineers-house.com/category/tutorials/excel-2016-tutorials-in-arabic/

Chapter 5
Microsoft PowerPoint 2016

Introduction

PowerPoint is a presentation program that allows you to create dynamic slide presentations that can include animation, narration, images, and videos for lectures, business meetings, advertisements, and more. With it, you can also make a single-page presentation for advertisements, flyers, posters, or postcards.



Microsoft PowerPoint 2016

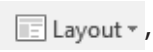
Microsoft PowerPoint 2016 and Microsoft Word 2016

PowerPoint and Word 2016 have a very similar interface, with the same Backstage view and a similar Ribbon, so we can use the same basis of knowledge from Microsoft Word 2016 to start working with Microsoft PowerPoint 2016.

Formatting Microsoft PowerPoint Presentations

This module explains how to work with formatting features in Microsoft PowerPoint presentations.

How To:

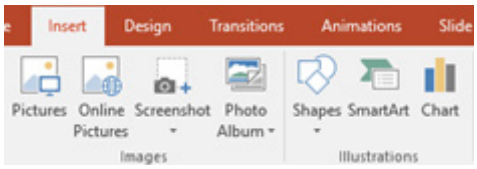
- **Select a Slide Layout:** In Normal view, on the Home tab, click Layout  , then select a slide layout for your presentation.
- **Add New Slide:** On the Home tab, click New Slide  and select the preferred slide layout.
- **Adding text:** On the Insert tab, in the Text group, click Text Box  . Click in the document, and then drag to draw the text box the size that you want. To add text to a text box, click inside the text box, and then type or paste text.
- **Adding Text from a Text File or Word Outline:** On the Home tab, click New Slide  . Click Slides from Outline. Locate and double-click the Word file (.doc or .docx) that contains the outline that you want to insert in your presentation. The file opens in PowerPoint.
- **Formatting Text as WordArt:** Select a text box, or select some text inside of the text box. The Format tab will appear. On the Format tab, click the Text Effects command in the WordArt Styles group. A drop-down menu will appear showing the different effect categories. The effect will be applied to your text.
- **Creating Bulleted and Numbered Lists:** On the View tab, click Normal. Click in the text box or placeholder where you want to add bulleted or numbered text. On the Home tab, in the Paragraph group, click Bullets or Numbering, and begin typing your list. Press Return to create a new list item.
- **Arranging Slides:** To arrange the order of slides, in the pane on the left, click the thumbnail of the slide that you want to move, and then drag it to the new location. Tip: To select multiple slides, press and hold the Command key while you click each slide that you want to move, and then drag them as a group to the new location.

Lab Exercise: Formatting Text

Inserting Images and Illustrations

This module explains how to insert images and illustrations in Microsoft PowerPoint.

How To:



Insert Images and basic Illustrations

- **Add Images or Illustrations to a Slide:** Select the Insert tab, then click on the commands that appear.
- **Pictures:** Browse your computer to insert a saved image.

- **Online Pictures:** Allows you to insert online images using clouding or Bing Image Search.
- **Screenshot:** An easy way to add one of your available windows from your desktop.
- **Photo Album:** For inserting many photographs into a presentation all at once.
- **Shapes:** Squares, circles, arrows and more can be added to your slide from here.
- **SmartArt:** Allows you to communicate information with graphics using different styles.
- **Chart:** Allows you to add a chart directly to your slide.

Working with Images

This module explains how to work with images in Microsoft PowerPoint.

How To:

By selecting Images, the Format tab will appear.

- **Remove Background:** It will automatically select the area you want to keep or remove. Make your selection and press Keep Changes to save or Discard All Changes to cancel.
- **Correction:** This tool helps to adjust the Sharpen/Soften and Brightness/Contrast of your image without using complicated software.
- **Color:** You can change your image Color Saturation, Color Tone, or Recolor using this easy tool.
- **Artistic Effects:** This applies filters to the image to make it look more like a sketch or painting.
- **Compress Picture:** This tool can decrease the image size but you cannot use it if the image has any Artistic Effects applied to it.
- **Change Picture:** You can change to a new picture from here but keep the style and effects from the old picture.
- **Reset Picture:** This will undo all changes in your picture style, size, or both.
- **Picture Style:** This provides combinations of shapes, borders, and shadows to apply to your pictures with one click.
- **Picture Border:** This changes your picture border color.
- **Picture Effects:** Preset, Shadow, Reflection, Glow, Soft Edges, Bevel, and 3-D rotation; all these picture effects can be applied to your picture.
- **Picture Layout:** This option can combine your picture with text in many layouts with one click, to change your presentation style.
- **Bring Forward:** In this option, you can change the picture order of stacked objects by

using **Bring Forward** to change just one level or **Bring to Front** to place image in front of all other objects.

- **Send Backward:** You can change the picture order of stacked objects by using **Send Backward** to go just one level back or **Send to Back** to place the picture behind all other objects.
- **Align:** This option can change the placement of an object on the page—left, center, right, top, middle, or bottom. If you select multiple objects you can align them relative to one another.
- **Group:** In this option, you can join multiple objects together to move or format them as if they were a single object.
- **Rotate:** With this option, you can rotate an object right or left, and you can flip it horizontally or vertically.
- **Crop:** To remove an unwanted area of your picture use this option and remove it manually, or use **Crop to Shape** to crop a picture to one of various basic shapes. If you want to change the image size to a standard size, use **Aspect Ratio**. **Fill** and **Fit** are also useful options to change your picture size relative to your area.
- **Height:** Change the height of your object.
- **Width:** Change the width of your object.

Lab Exercise: Working with Images and Shapes

Additional Reading

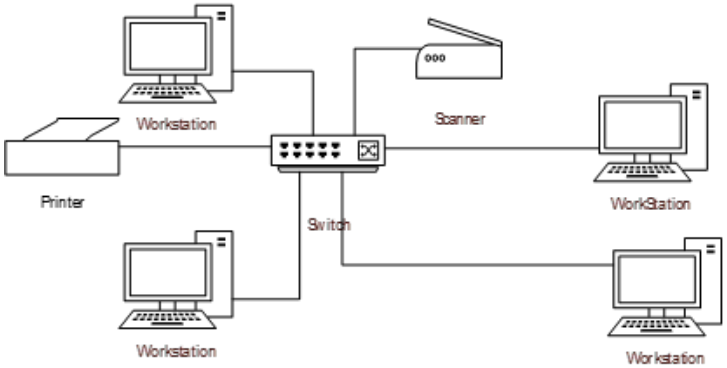
- https://www.youtube.com/watch?v=uJHTi1TA91w
- http://download-internet-pdf-ebooks.com/50-1-library-books

Chapter 6
Information Technology and Network Types

Introduction

In the current information technology era, it is rare to have a stand-alone computer. Most computers are connected to other computers through some form of network. This connection between computers is important in order to reduce the time, effort, and cost by allowing the sharing of information and resources.

Stand-alone Computer



Local-area Networked Computers

Network Types

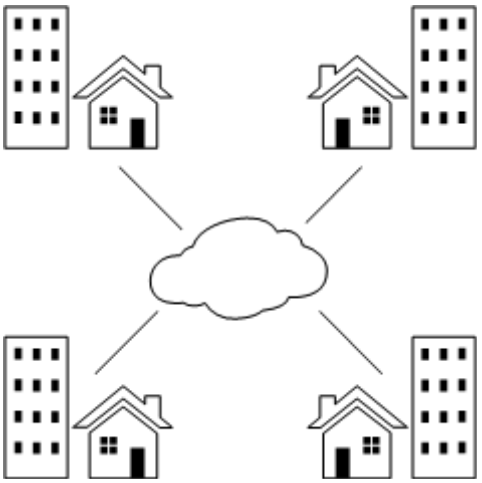
One of the most common network categorizations is based on scope and scale, while other categorizations are based on the network implementations. In this manual, we will discuss some important network terminology such as LAN, WAN, WLAN, intranet, extranet, Internet, and VPN.

Local Area Network

A local-area network (LAN) connects network devices in a small area, such as a home, company, hospital, or school. These are all places that can easily use cable and Wi-Fi to connect. The image on the right above represents a LAN configuration.

Wide Area Network

A wide-area network (WAN) connects network devices in a wide area. This may mean connections between different buildings, cities, or even countries. It uses more complicated connection types than LAN.



Wide-area Network

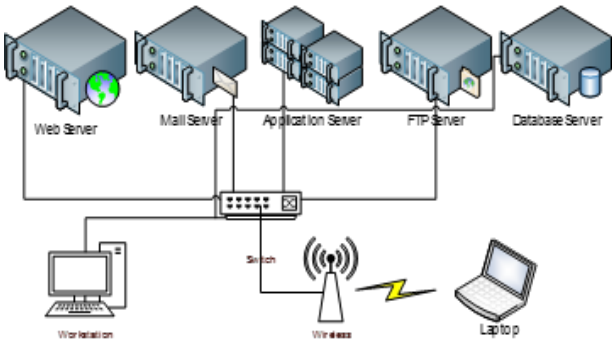
Wireless Local Area Network (WLAN)

WLAN connects network devices using wireless technologies such as Wi-Fi.

Wireless Local-area Network

Intranet

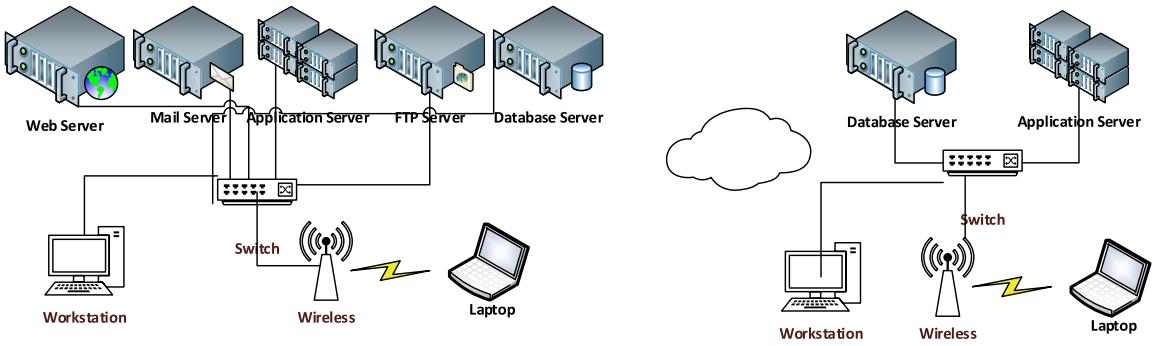
An intranet is a network, usually implemented over a private LAN, that allows use of shared resources—such as a central database, internal mail server, and web application—but does not allow use from outside the organization.



Intranet

Extranet

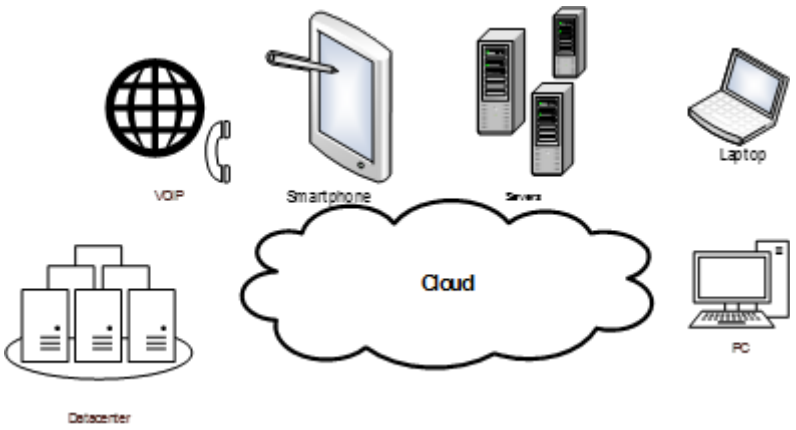
Extranet is very similar to intranet, but it is implemented over a private WAN to support the demands of business organizations. It can operate between buildings, cities, and countries.



Extranet

Internet

The Internet is the system of global connections between all computer types around the world. It is a network of networks that connects all users around the globe to each other. It supports the continuous transfers of information, images, voice, multimedia, streaming; and so on, and has become an important and ubiquitous source of knowledge.



Internet

Virtual Private Network (VPN)

VPN is a virtual connection over the Internet that can be used to communicate among private networks. It can securely connect multiple branches of a business organization around the globe using encrypted protocols to ensure privacy.

Additional Reading

- https://www.youtube.com/watch?v=-FjS4jEtdkA
- http://download-internet-pdf-ebooks.com/5-1-library-books
- http://www.kutub.info/library/category/5
- http://www.egylearn.com/learn-network/

Chapter 7
Web Search Engines

Introduction

A web search engine is a program or system of software that searches the Internet using search terms specified by the user and then presents the user with a listing of pertinent web pages found by the search engine. Ideally, the results are listed in order of relevance to the user's query.

List of Search Engines

While many search engines are available to you, we will discuss Google in this course. However, it is important to be familiar with other search engines as well, since Google may not work in some countries.

- Google.com
- Bing. com
- Yahoo.com
- Baidu.com
- Ask.com
- AOL.com

Google

Google is likely the best and most popular search engine in the world. In this course, we will learn many tips that can make using Google very simple.

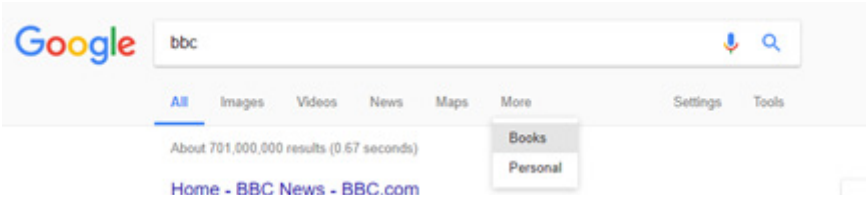
Browse to Google

Open your Internet Explorer and type **www.google.com** in the address bar, or just type google + Ctrl + Tab, and you will be redirected to the Google server in your country.

Google

Use the Tabs

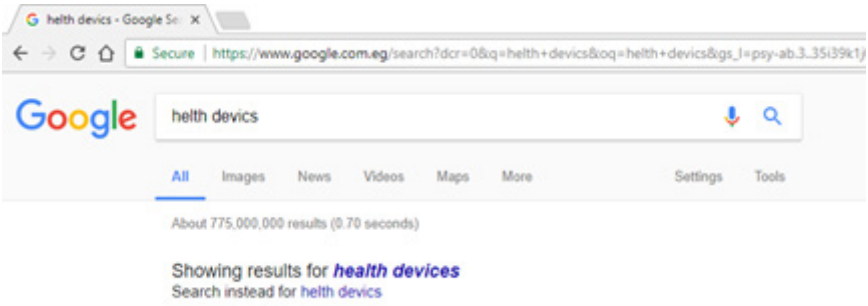
When you start to search, some tabs will appear that you can use to search specific fields, such as images, videos, news, maps, books, or personal. You can also leave it to default on "All" for a search of all fields.



Google Tabs

Spell Check

Even if you make a spelling error, Google can usually figure out what you mean, if your word is close, and give you suggestions for your search criteria.



Google Spell Check

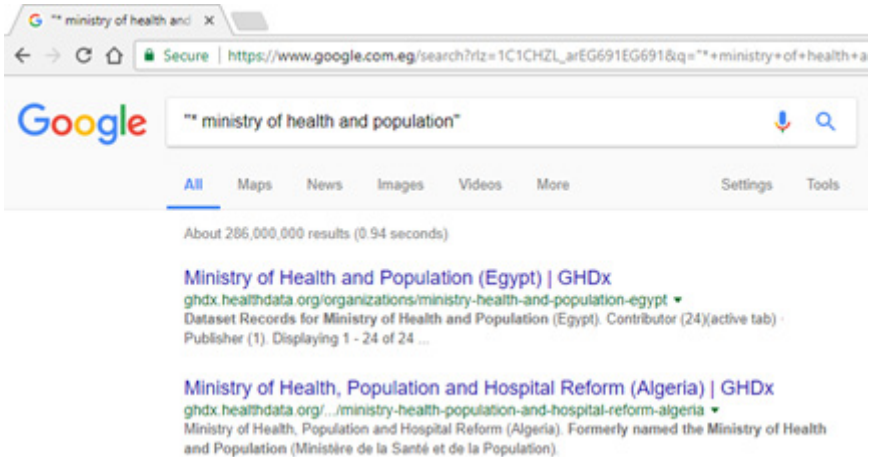
Use Quotation Marks to Search for an Exact Phrase

If you want to search for an exact phrase or sentence, use quotation marks around those words. For example, if you want to search for Egypt Ministry of Health and Population (MOHP) as one term, write it as "Egypt Ministry of Health and Population."

Use Quotes

Use an Asterisk within Quotation Marks

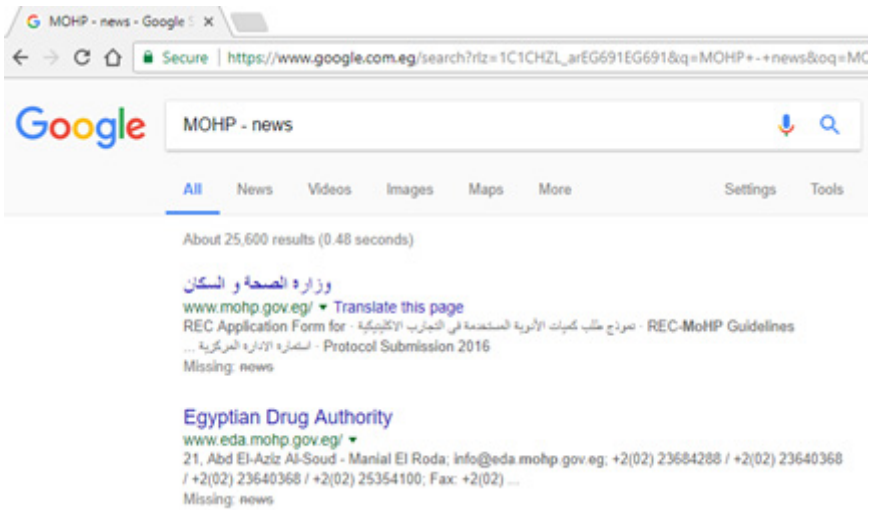
If you want to search for a phrase or sentence but want to allow some variations, you can use quotation marks and replace the variable word with an asterisk (*). For example, you can use "* ministry of health and population" to search about any country's ministry of health and population.



Use Asterisk within Quotes

Use a Hyphen to Exclude Words

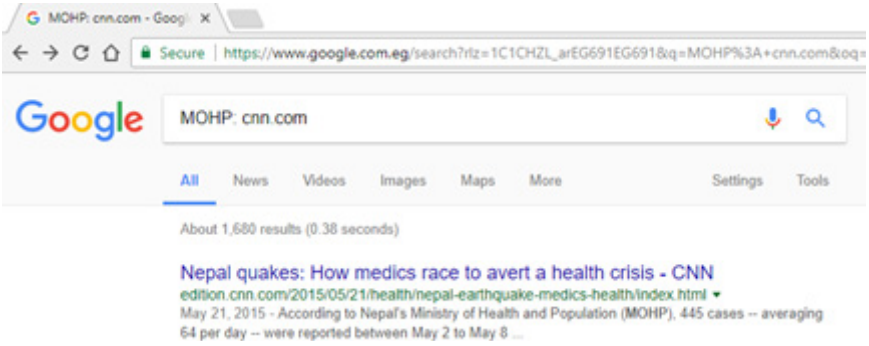
Sometimes you wish to search for a certain word but you want to exclude some results. In this case, you can use a hyphen (-) and then the result you want to exclude. For example, if you want to search the MOHP but you do not want to get news results, you can use "MOHP – news".



Use Hyphen

Use a Colon to Search Specific Sites

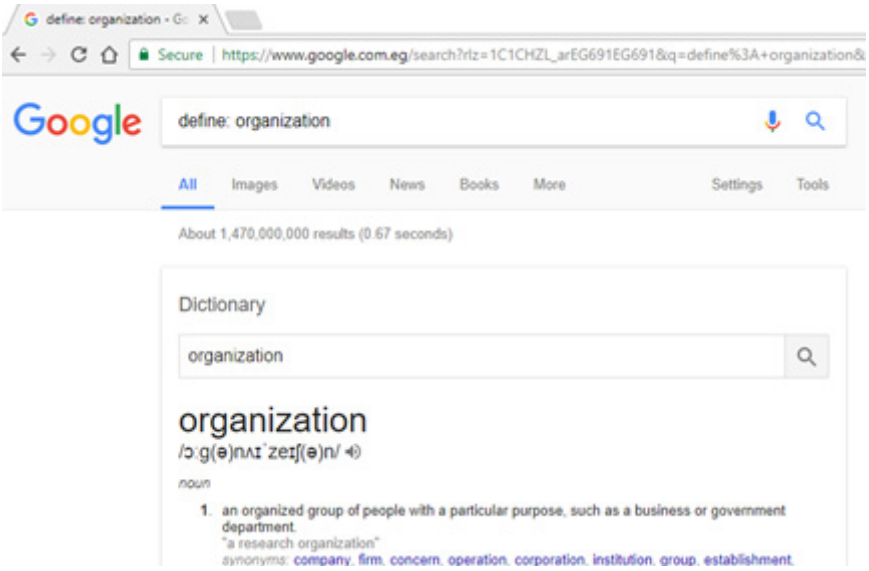
If you need to search for any word on a certain website, you can use a colon after your search criteria and followed by the website address. For example, if you want to search for MOHP in cnn. com, just write your search as "MOHP: cnn.com".



Use Colon

Use "define:" to Find a Word's Meaning

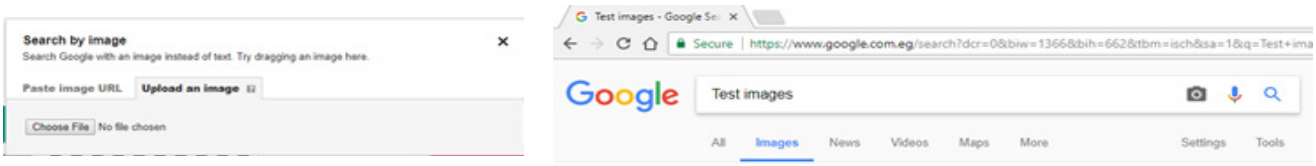
If you need to search for the meaning of a word, use "define:" and your word to search for it in a dictionary. For example, to search for the definition of the word "organization," use "Define: organization".



Use DEFINE:

Search Images

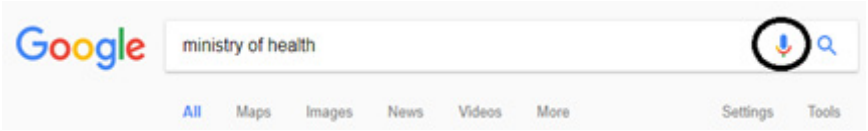
This is a very helpful tool that allows you to search for a specific image. Just go to Image tab and press the camera icon and upload your image or paste the image's URL.



Search Images

Search by Voice

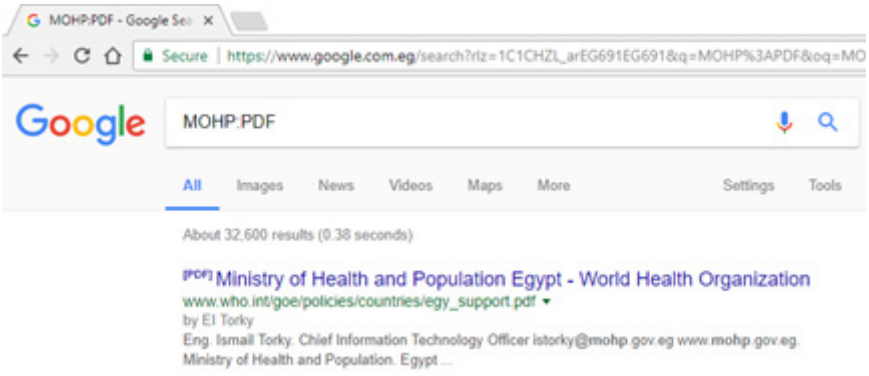
Google also allows you to search without writing the search criteria. Just use the Mic icon and speak. (Note: your microphone must be connected and enabled.)



Search by Voice

Find a Specific File Type

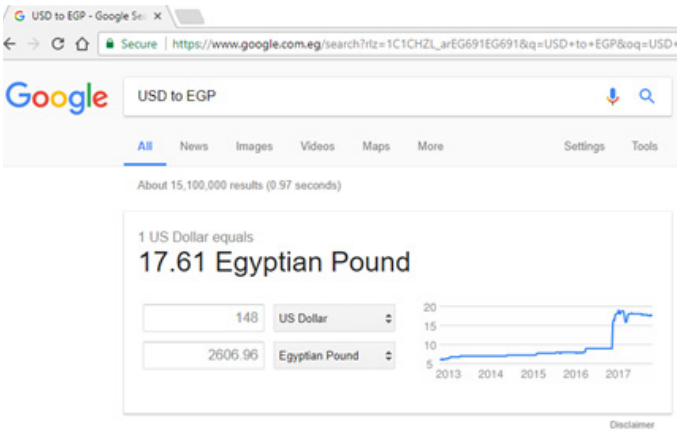
To get your search results in a specific file format, use your search criteria: filetype:pdf. For example, to get MOHP search results in pdf format, use "MOHP:PDF".



Specific File Type

Convert Money and Units

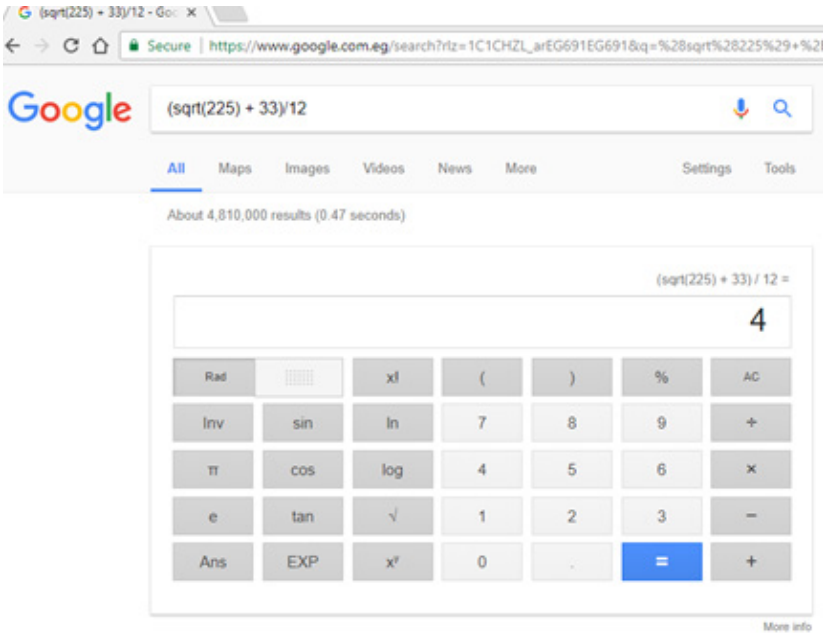
Google can find an exchange rate or unit conversion for you quickly. To get the exchange rate for U.S. dollars to Egyptian pounds, just enter USD to EGB, or Fahrenheit to Celsius to covert between temperature units. It is an easy way to convert from any unit of measure to another.



Money and Units

Solve Mathematical Equations

Google can solve your mathematical equation; all you have to do is ask. For example, to find the result of (√225+33)/12, just enter "(sqrt(225) + 33)/12".



Solve Mathematical Equations

Lab Exercise: Try to use all Google tips in this lesson

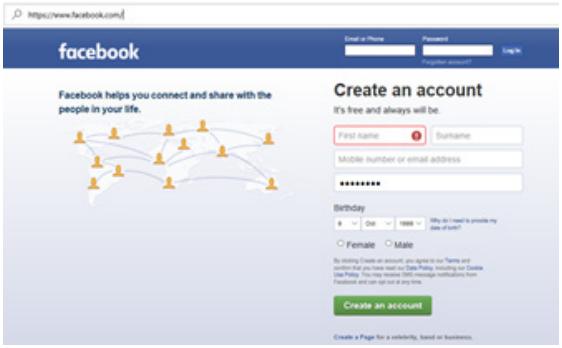
Chapter 8
Social Media

Introduction

Social media has created a new era of personal and business online communication that allows people to share photos, feelings, career interests, places, experiences, and ideas through outlets such as Facebook, Twitter, Google+, LinkedIn, Instagram, and Wikipedia.

Facebook

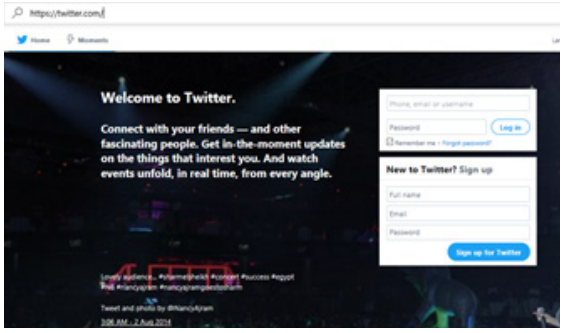
Facebook is one of the most popular social network websites. It allows users to post photos and videos, send messages, send files, and chat with others. They can also share their locations and emotions, discuss current live events, make comments on other pages, and browse between groups and pages.



Facebook

Twitter

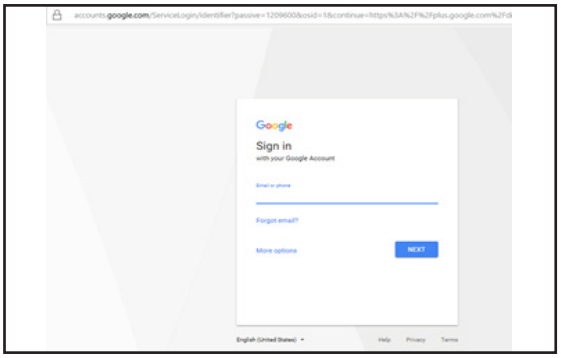
Twitter is a microblogging service through which users can broadcast short messages, or "tweets," to their followers, who are able to read the tweets as soon as they are posted. Celebrities and bloggers often use it to publish their views, feelings, and comments on current events or anything else that catches their interest.



LinkedIn Twitter

Google+

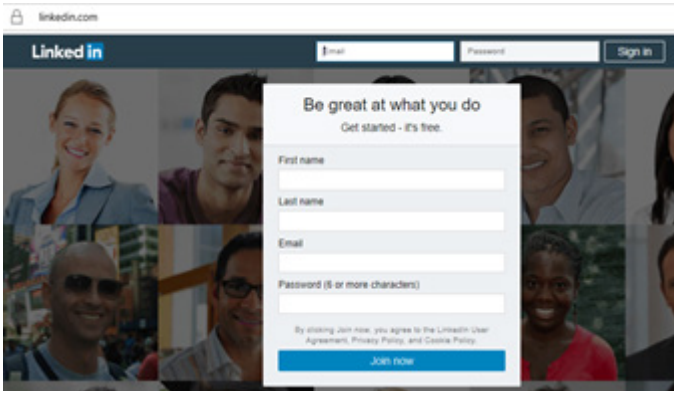
Google Plus (Google+) is the Internet-based social network of Google. Google+ replaced groups with "Circles" and chats with what they call "Hangouts." It uses the same Google account that you use in Gmail or in your Android smartphone.



Google+

LinkedIn

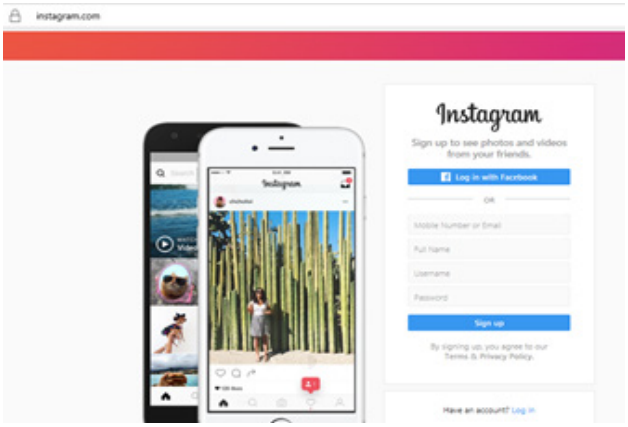
LinkedIn is a social network developed specifically for the business and employment community. The goal of the site is to allow registered members to establish and document networks of people they know and trust professionally. Employers can post jobs and job seekers can post their CVs.



LinkedIn

Instagram

Instagram is a popular mobile and Internet-based application and service through which you can publicly and privately share photos and videos. You can create a separate account on Instagram or use your Facebook account to login.



Instagram

Wikipedia

Wikipedia is a free online encyclopedia, created and edited by volunteers around the world and hosted by the Wikimedia Foundation.

Wikipedia

Lab Exercise: Create an account on Facebook and Twitter and try to use them


USAID
FROM THE AMERICAN PEOPLE


Ministry of Health & Population
وزارة الصحة والسكان


HEALTH
COMMUNICATION
CAPACITY
COLLABORATIVE
Egypt