

Ministry of Higher Education and Scientific Research  
University of Baghdad  
College of Science  
Department of Biology



# Computer Science-1

## 2022-2023

المرحلة الاولى - الدراساتين الصباحية والمسائية  
الفصل الدراسي الاول

تدريسي المادة :

م. زينب جواد احمد

# Lecture(1)

## **What is a computer?**

A computer is an electronic device, operating under the control of instructions stored in its own memory, that can accept data, process the data according to specified rules, produce results, and stores the results for future use.

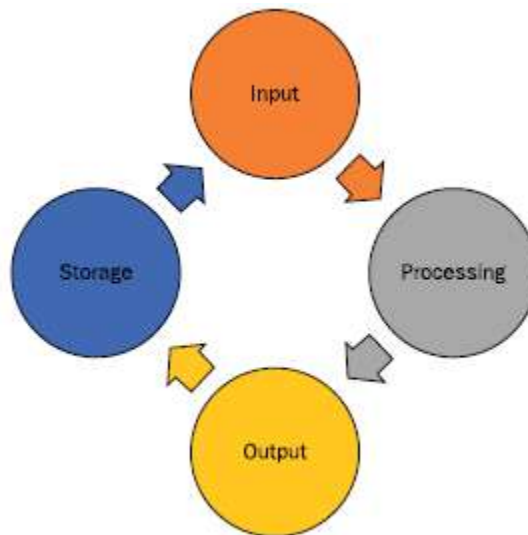
## **Data and Information**

Computers process data into information. Data is a collection of unprocessed items, which can include text, numbers, images, audio, and video. Information conveys meaning and is useful to people.

## **Information Processing Cycle**

Every computer system is made up of multiple electronic components. These components fall into four broad categories that serve different purposes in the information processing cycle.

The information processing cycle is the four-step process that data moves through as it is processed by a computer. It consists of input, processing, output, and storage.



**Input:** Components that help humans put data into the computer. Examples include a keyboard, mouse, and touch screen.

**Processing:** Components that move and process the data inside the computer. The motherboard and its processor and memory chips fall into this category.

**Output:** Components that provide the results of the processing to humans. The monitor is the primary output device; other examples include printers and speakers.

**Storage:** Components that store software and data until it is needed. Storage components include hard drives, USB flash drives, and DVDs

## Window 7

### Desktop Components:

1. Start Menu.
2. Taskbar.
3. Desktop Icon.



### Start Menu

The Start menu is the main gateway to the computer's programs, folders, and settings. It's called a **menu** because it provides a list of choices; it is located at one end of the Taskbar, typically at the lower left corner of the desktop.

The Start menu includes options for:

- Running programs, either by selecting from a menu (which you can customize) or by entering text in a dialog box.
- Accessing recently used documents.
- Accessing control panels.
- Finding files, folders, or computers.
- Getting help.
- Shutting down or logging out of the computer.

**Left pane:** The left pane shows the most frequently used programs.

**All programs:** At the bottom of the left pane is the All Programs option that displays all programs installed on the computer.

**Search:** Directly below the All Programs option is the "Search" bar. This useful feature allows you to type in the name of the program or file you're looking for and have the results displayed above.

**Right pane:** The right pane shows each of the more commonly accessed sections of the computer, such as your Computer, Control Panel, Documents, Music, and Pictures.



### Getting started with the Start menu



To open the Start menu, click the **Start** button in the lower-left corner of the screen. Or, press the Windows logo key on the keyboard.

### The Start menu has three basic parts:

- The large left pane shows a short list of programs on the computer. The computer manufacturer can customize this list so its exact appearance will vary. Clicking **All Programs** displays a complete list of programs.
- At the bottom of the left pane is the search box, which allows the user to look for programs and files on the computer by typing in search terms.
- The right pane provides access to commonly used folders, files, settings, and features. It's also where the user goes to log off from Windows or turn off the computer.

### Using Windows Accessories

Windows comes with several accessories, built-in programs that are extremely useful for completing everyday tasks.

### Frequently Used Windows Accessories


Program	Description
Calculator	Performs arithmetic calculations
Notepad	Creates, edits, and displays text file using basic text formatting
Paint	Creates and edits bitmap pictures

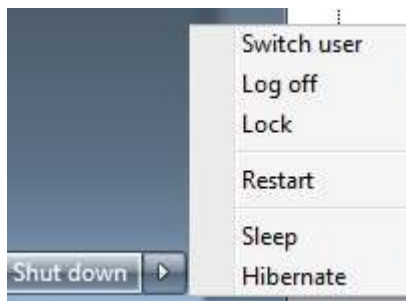
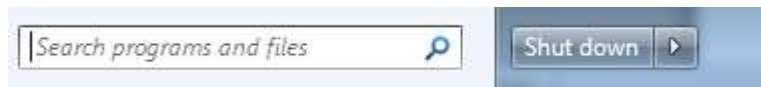
Run	Open program, folder, or document
Snipping Tool	Captures different parts of the screen
Sticky Notes	Creates color notes on the screen
WordPad	Creates, edits, and displays text document with complex formatting
System Tool	<ul style="list-style-type: none"> <li>• Disk Defragment</li> <li>• Disk Cleanup</li> <li>• System Restore</li> </ul>
Ease of Access	<ul style="list-style-type: none"> <li>• Ease of Access Center <ul style="list-style-type: none"> <li>• Magnifier</li> </ul> </li> <li>• The on-screen keyboard</li> <li>• Speech recognition</li> </ul>

**Start the computer and log on securely using a user name and password.**

- First, check that all cables are plugged securely into the rear of the machine.
- Then check that the monitor is turned on.
- Locate the power switch on the system unit (tower) and press it once to turn on the computer.

**Shut down the computer using an appropriate routine.**

- Click on the button that represents Start 
- Click Shut Down.



- **Switch User:** A Windows feature that enables another user to log in without the original user logging off first.
- **Log off:** To close a user account's session, closing all open programs and data files, and unloading all of that user's settings.
- **Lock:** Locks the computer. You will not be logged out, and programs will still be running, but the user must enter the password to use the computer again.

- **Restart:** Logs you out of the computer, closes all programs, shuts down Windows, turns the computer off, then turns the computer back on and restarts Windows. The user will have to enter the password to use the computer again.
- **Shut down:** Logs the user out of the computer, closes all programs, shuts down Windows, and turns the computer off.
- **Sleep mode:** A power-saving mode that retains all running programs and open windows in computer memory for a super-quick restart.
- **Hibernate mode (found only on laptop computers):** copies the work to the hard drive then shuts off your PC. This is slower at re-displaying the user work than sleep.

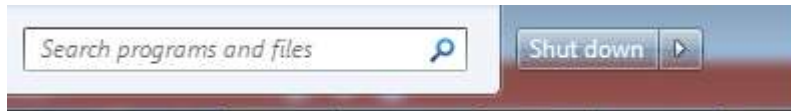
To place the computer in one of these modes, select it from the Shut Down button's menu on the Start menu.

## Lecture(2)


### Searching

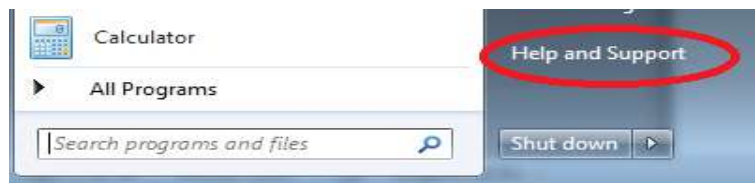
The Search utility allows the user to search for files. To open the Search dialog box:

- Click on the Start button.
- Write the file/folder where the user has Start Search.
- Automatically it will start searching.

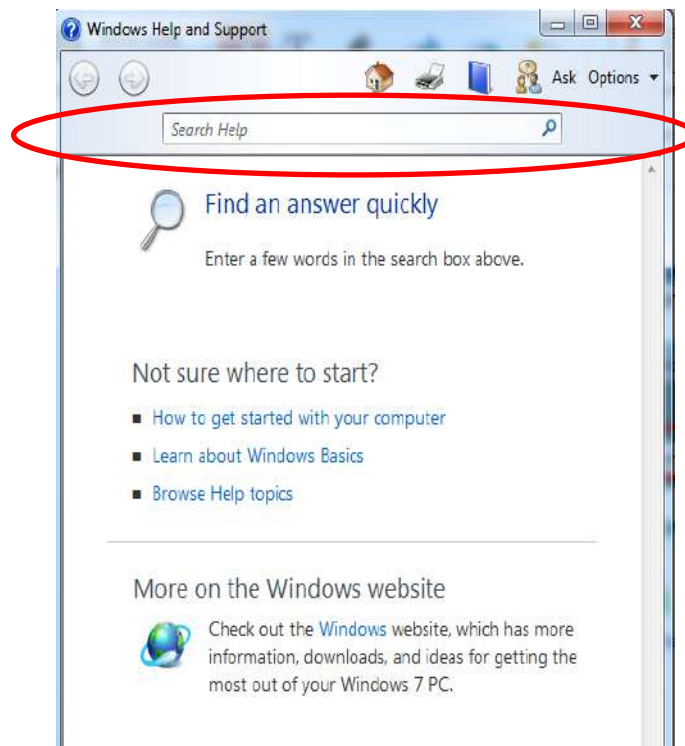


### Use available Help functions.

- Click on the button that represents Start 
- Click on Help and Support



- A window will load up. In the Search, Help box write what the user needs to search.



## Computer types

The computer is a device that receives input from the user through a mouse or keyboard, processes it, and displays the result on a screen. The computer is classified into different types of computer according to their size, work, brand, model, and purposes.

1. **Computer types are based on purpose.**
2. **Computer types are based on size.**
3. **Computer types are based on the operation.**
4. **Computer types are based on the operating system.**

## Computer Components

Every computer is composed of two basic components: **hardware and software**. **Hardware** includes the physical features which are every part that the user can either see or touch. **The software** includes the features responsible for directing the work to the hardware.

## Hardware

- **Input Device:** This allows you to enter data and instructions into a computer such as a keyboard and a mouse.
- **Output Device:** Hardware component that conveys information to one or more people such as to monitor and speaker.
- **System Unit:** Case that contains the electronic components of the computer that are used to process data.
- **Storage Device:** Records (writes) and/or retrieves (reads) items to and from storage media.
- **Communications Device:** Enables a computer to send and receive data, instructions, and information to and from one or more computers or mobile devices.



## Taskbar

The Windows interface includes a special [application desktop toolbar](#) called the **taskbar**. The user can use the taskbar for switching between open windows and starting new applications.





## Taskbar view

### 1. Manage multiple windows

All open windows are represented by taskbar buttons. Arrange the windows. The user can arrange open windows in one of three ways:

- **Cascade**, which puts windows in a single stack that has been fanned out so that the window titles appear.
- **Stacked**, which puts windows in one or more vertical stacks depending on how many windows the user has open.
- **Side by side**, which places each window—open, but not maximized—on the desktop so the user can see all the windows at once.



Arrange windows in a cascade (left), vertical stack (center), or side-by-side pattern (right)

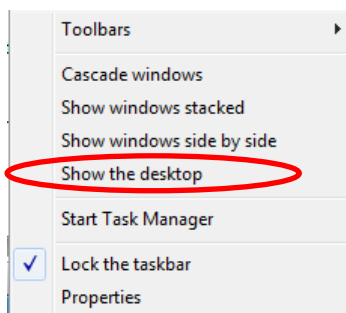
To arrange the open windows, right-click an empty area of the taskbar, then click **Cascade windows**, **Show windows stacked** or **Show windows side by side**.

### 2. Aero Peek will show you a thumbnail of each window when you hover the mouse over the icon on the taskbar.



The user can **change the order of the icons by clicking and dragging the icon** to whatever space you desire on the taskbar.

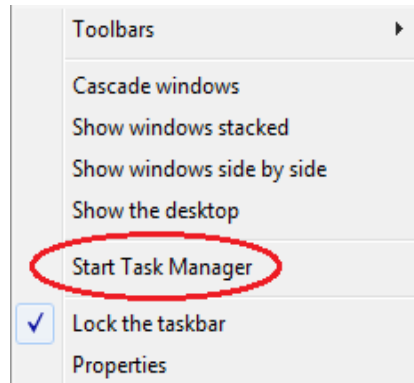
**Show the desktop:** to show the desktop window.



## Lecture (3)

### **To start task Manager**

Task Manager displays the programs, processes, and services that are currently running on the computer. The user can use Task Manager to monitor the computer's performance or to close a program that's not responding. Open Task Manager by right-clicking the taskbar, and then clicking **the Start Task Manager**.



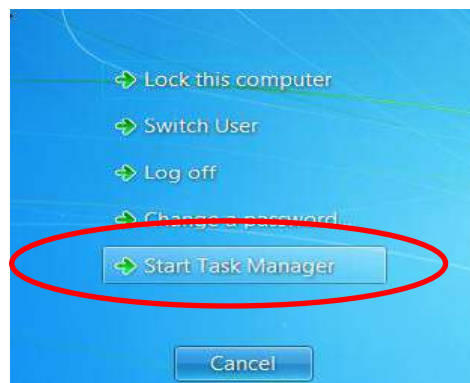
### **Shut down a non-responding application.**

Sometimes a program/application fails to respond. In such a case, the user needs to start the task manager to shut down (close) the program:

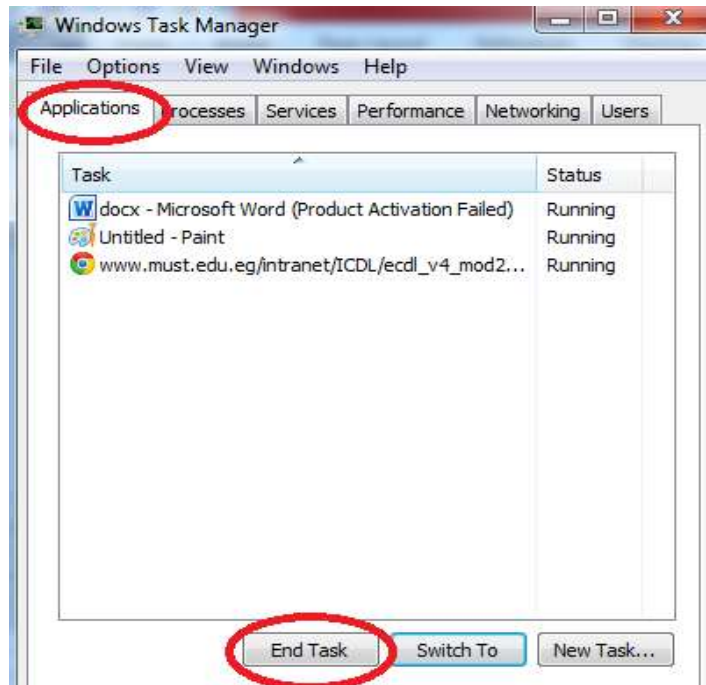
- The easiest way to use Task Manager is to press Ctrl + Alt + Delete on the keyboard.



- A window will occur. The user will see a list of things that the user can choose from. The user must click on Start Task Manager.



- This shows a list of all currently running tasks, or programs. If a program is having trouble, the status will likely show "Not responding." Click on the program that is not responding and click End Task.

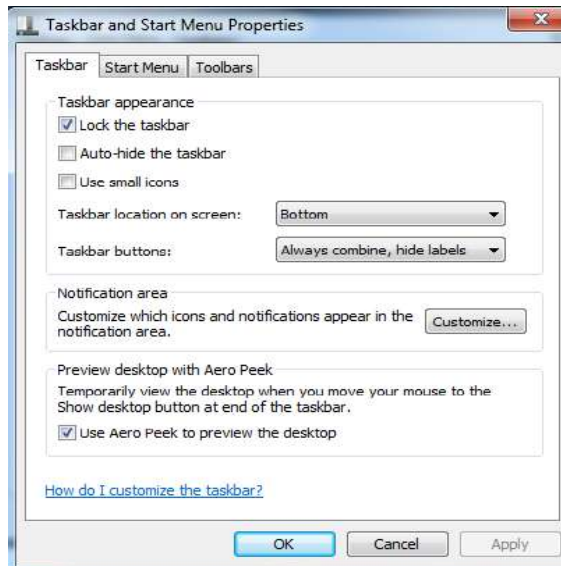


- The End Program dialog box will be displayed.
- Click the End Now button.

### Changing Windows 7 Taskbar Properties

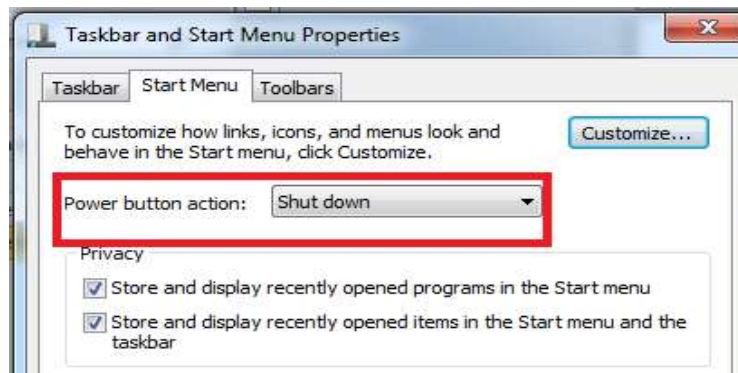
The user can customize the Taskbar by hiding it, making it bigger or smaller, or doing other things to it, to get to the customization window, right-click an open area of the Taskbar and left-click the "Properties" title.

- **Lock it.** When "Lock the taskbar" is checked, no one can make changes to its size or placement on the desktop.
- **Auto-hide.** If the user checks this box, it will hide the Taskbar, so that the user can't see it.
- **Use small icons.** This will shrink the Taskbar and icons, freeing up more space but still allowing the user Taskbar functionality. This is a good option on small screens like laptops or netbooks where space is at a premium.
- **Move the Taskbar.** The drop-down menu "Taskbar location on screen:" allow the user to move the Taskbar to the top, or either side, of the desktop. Again, most people are used to seeing it at the bottom and leave it there.
- **Taskbar buttons.** Here the user can change the appearance of the icons in the Taskbar. The user can turn off "combining" of icons, meaning that if the user has three Microsoft Word documents open, for example, each document will appear as its icon in the Taskbar, rather than two "hiding" behind a single Word icon.



### To Modify the Power Button

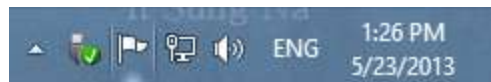
Under the Start Menu tab, the user can modify how the Power Button responds. To make modify the power button, right-click the taskbar, select properties, and select the start menu and then change the power button action.



### Notification area

The notification area is located at the right end of the taskbar and contains program icons that provide status and notifications. The notification area is to provide:

- Easy access to different system functions: the date and time, volume, network, the action center, the active keyboard input language, etc.



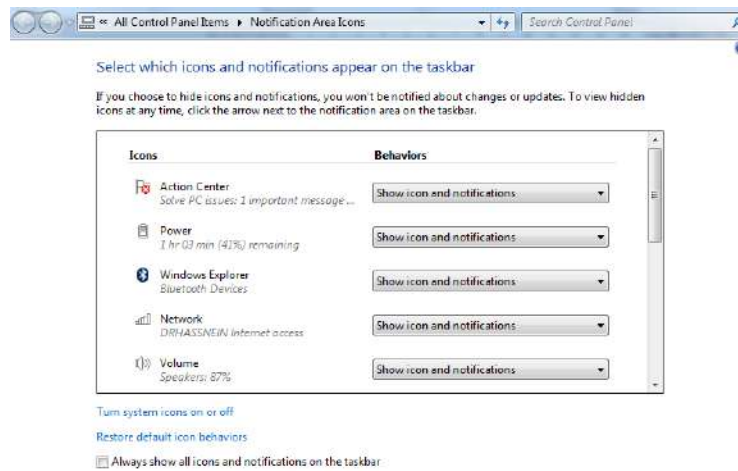
- System notifications: the notification balloons that pop in the notification area. For example, when a USB stick is successfully removed, the user is notified about it.



- Easy access to applications that display their icon in the notification area.



The simplest way to access this window is to click or tap the arrow displayed on the left side of the notification area and then the Customize link.



## Lecture (4)

### **External components of the system unit**

External components are the visible parts of the system unit:

1. Power switch.
2. Reset switch.
3. Disk Drive.
4. Case.
5. USB ports.

### **Internal components of the system unit**

1. Motherboard sometimes called a system board is the largest electronic circuit board in the computer. Many electronic components attach to the motherboard; others are built into it. A motherboard connects CPU, memory, hard drives, video card, sound card, and other ports directly or via cables.
2. The CPU.
3. RAM and ROM memory.
4. Hard disk.
5. Fan.
6. Video card.
7. Slot.

### **Categories of Computers**



## Window 7

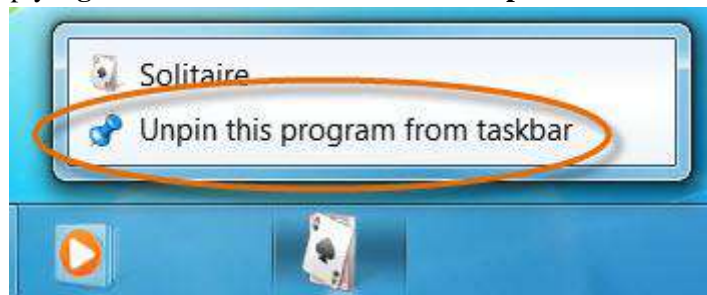
### Pin a program to the taskbar

The user can **Pin** programs to the taskbar and access them with a single click of the mouse.

- To Pin a program, **drag it to the taskbar and release** or right click on

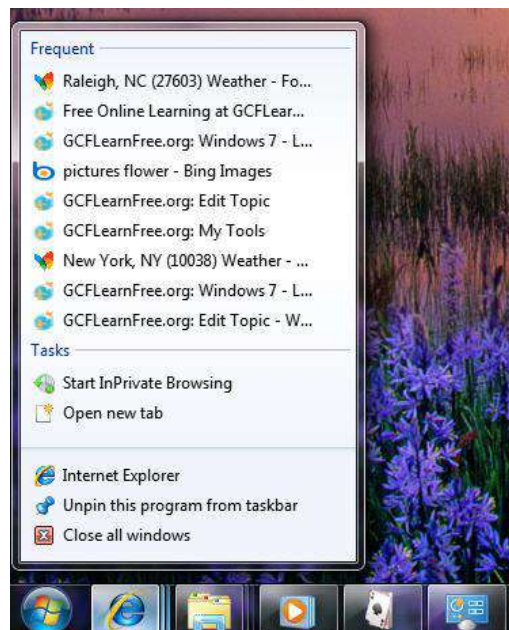


- To Unpin a program, simply **right-click on the icon and select Unpin**.





### Access a Jump List

A **Jump List** is like a mini-menu for a program. It allows quick access to **recent files, frequently viewed items, performance tasks, and more**. For example, the user can select frequently used websites with a simple click from the Internet Explorer Jump List. **Right-click an icon** to open the program's **Jump List**.









## File and Folder

All the data on the hard drive consists of files and folders.

File	Folder
<p>A file is commonly referred to as a document and is usually created from within a specific program.</p>  <p>Courses_Sc... Chapter 6.doc message.txt</p>	<p>A folder is a container for programs or files and a method of organizing information.</p>  <p>My Documents ECDL Notes</p>
Files store data, whether text, music, or film	Folders store files and other folders.
Files are represented with an icon and usually include a symbol of the associated program.	Folders are represented with a yellow icon.
Each file has its extension.	A folder does not have any extension.
Files are taking spaces on computer memory.	Folders are not taking space on computer memory.
The user cannot create any folder or subfolder within a file.	The user can create different types of files or subfolders in a folder.

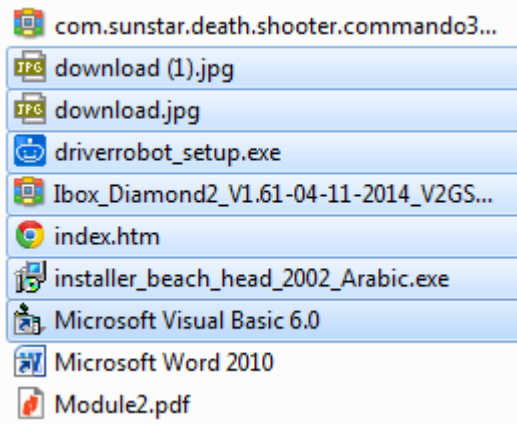
## Selecting Files, Folders, and Sub-folders

- To select an individual file/folder simply click once on the file/folder. The file/folder will be highlighted in blue.

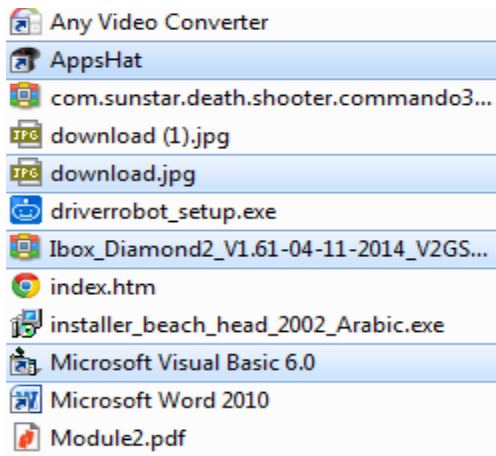
 5Control Panel.docx	2-10/-V/-1 12:12	Microsoft Word D...	2,551 KB
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 AppsHat	2-14/10/17 9:42	Shortcut	3 KB
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 download.jpg	2-10/0/11 12:28	ACDSee 15 JPEG I...	3 KB

- To select several adjacent files/folders. Click on the first file/folder in the block the user wishes to select, then **press Shift with Arrow key** and keep pressing these keys whilst clicking on the last file/folder in the block.





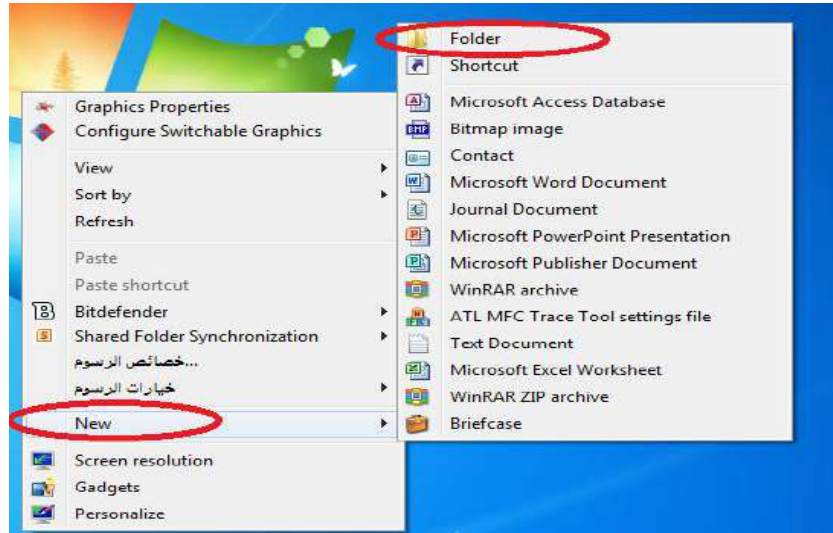
- To select several non-adjacent files / folders. Click on the first file/folder that the user wishes to select. Then press the **Ctrl**, whilst clicking on the other files/folders that the user wishes to select.



## Lecture (5)

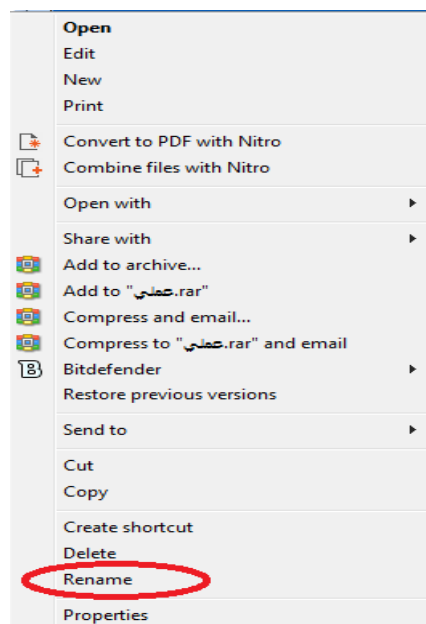
### Creating Folders / Sub-folders

- Identify the area where the user will create the new folder, e.g. Desktop or My Documents.
- Right-click in space, point to New, and then click Folder.
- A new folder will be created and the user can use the keyboard to type a name for the folder.



### Changing the name of a Folder / File

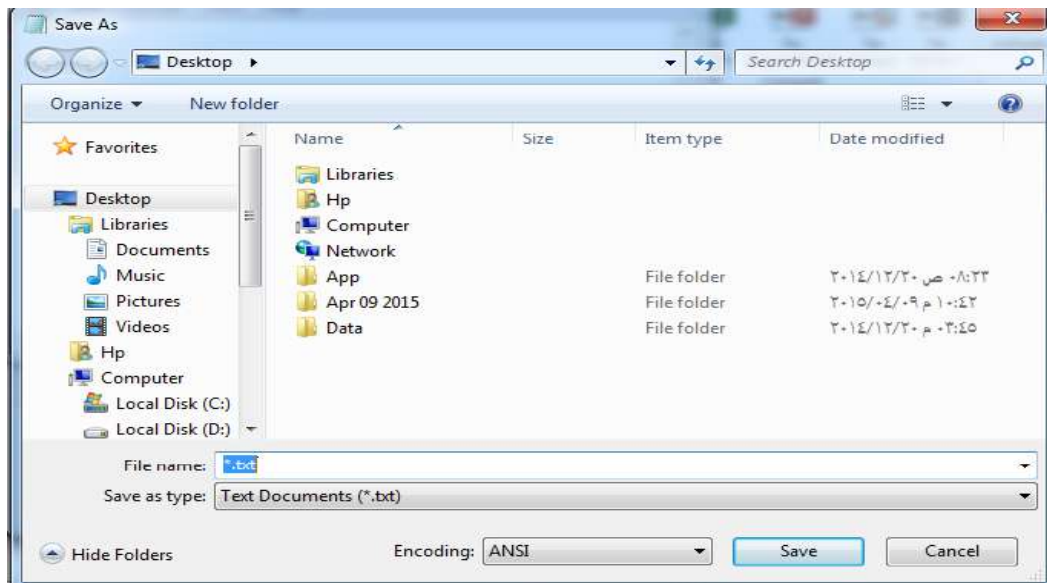
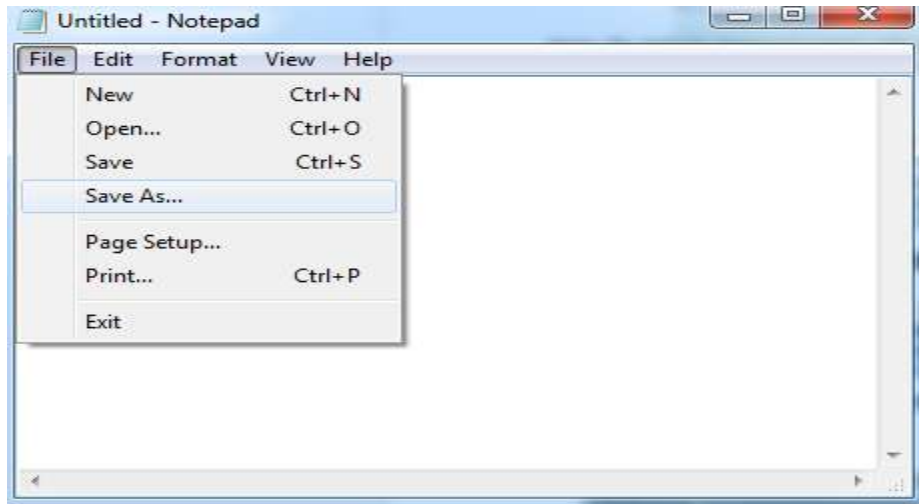
- Right-click on the folder/file.
- Click Rename.
- Type in a new name.



## Saving a File

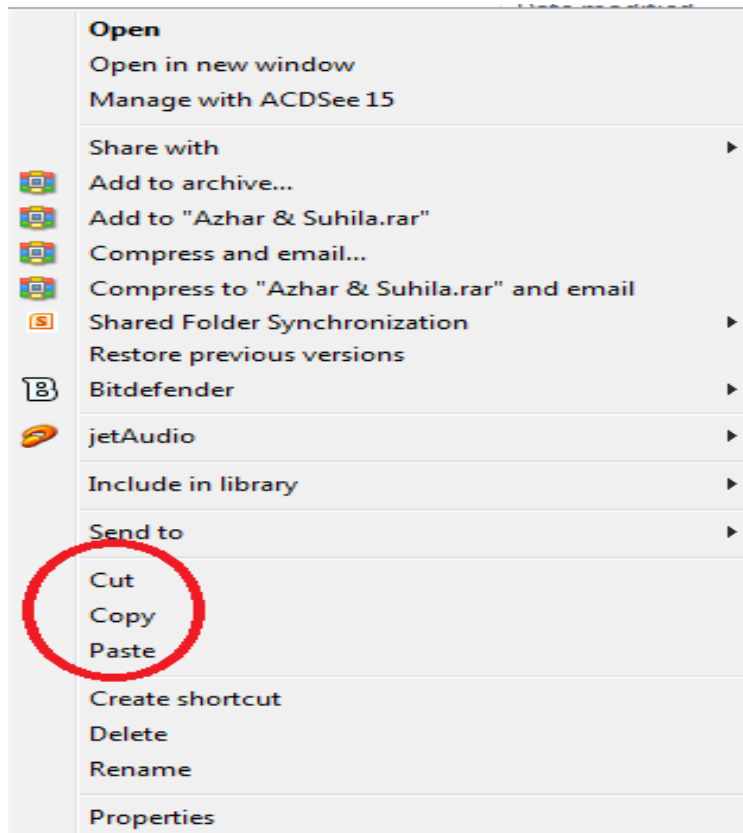
When the user saves a document for the first time, the user needs to give it a name. To save a file, follow this procedure:

- Click File, Save As.
- From the Save in the drop-down box select the disk and folder where the document file will be saved.
- Type a name for the document in the File Name: box.
- Click Save.



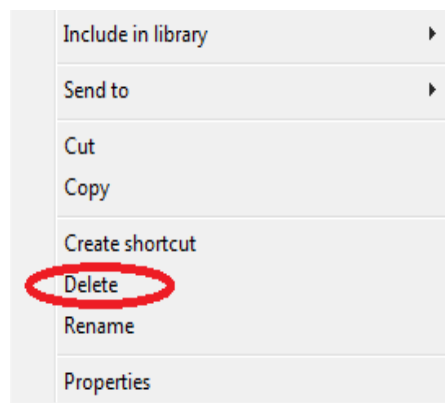
## Duplicating (Moving) Files and Folders from one folder/directory to another.

- Select the files/folders that the user wishes to duplicate/move.
- Click Edit, Copy (to duplicate) OR Cut (to move).
- Open the folder where the user wants to paste the files/folders and click Edit, Paste.



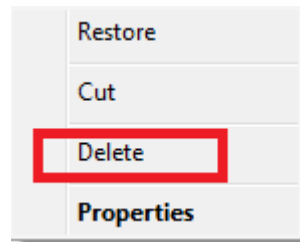
### Deleting Files

- To delete a file, simply right-click on it and click Delete. The same procedure applies to a folder.
- Files and folders that the user deletes are placed in the recycle bin, from where the user can permanently delete a file or restore it.



### To permanently delete a file/folder:

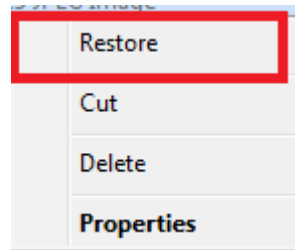
- In the Recycle Bin right-click on the file/folder that the user wishes to remove permanently, then click on delete.



### Restore files, folders from the recycle bin

To restore a file/folder:

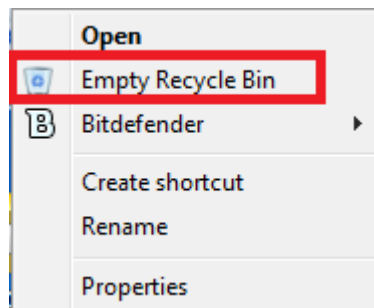
- Right-click on the file/folder (in the Recycle Bin) and click on restore. The file will be restored to its original location.



### Empty the recycle bin.

To empty the Recycle Bin:

- Double click on the Recycle bin to open it. Click, Empty Recycle Bin.



**Central Processing Unit (CPU)** the central processing unit (CPU), also called a processor, is located inside the computer case on the motherboard. It is sometimes called the brain of the computer; it consists of the following features:

- ❖ CPU performs all types of data processing operations.
- ❖ It stores data, intermediate results, and instructions (program).
- ❖ It controls the operation of all parts of the computer.

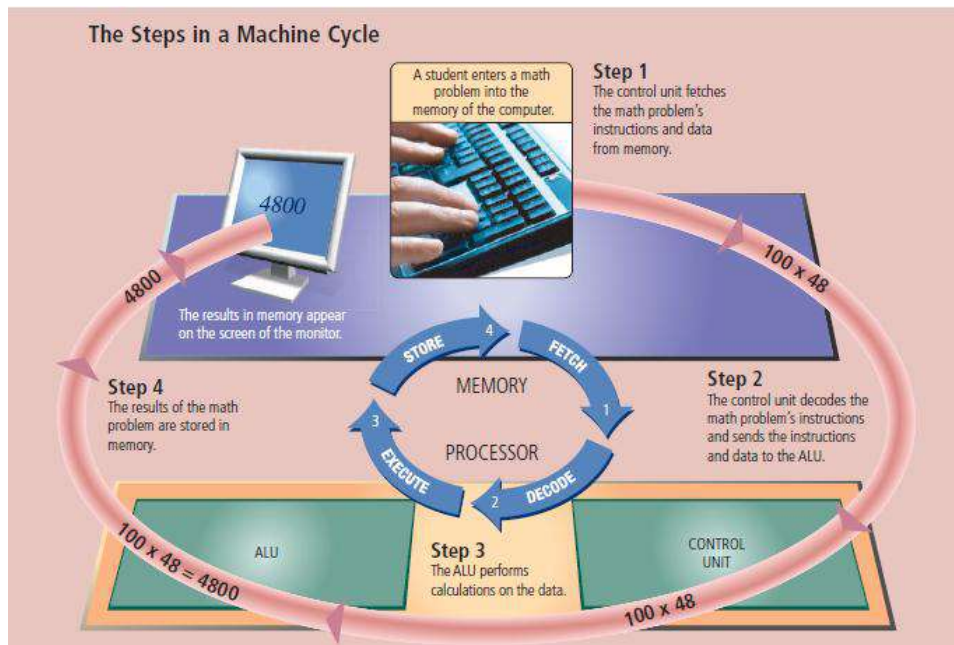
The CPU contains following elements:

1. **Control Unit:** The control unit is responsible for controlling the sequencing and timing of the other elements making up the CPU.
2. **Arithmetic Logic Unit (ALU):** The ALU performs the mathematical calculations using data stored within the CPU registers.
3. **Registers:** The registers are memory storage areas within the CPU that hold the data that is worked on by the ALU.
4. **BUS:** The computer bus transports data between the memory and registers.



## Machine Cycle

For every instruction, a processor repeats a set of four basic operations, which comprise a machine cycle (Figure 4-5): (1) fetching, (2) decoding, (3) executing, and, if necessary, (4) storing. Fetching is the process of obtaining a program instruction or data item from memory. The term decoding refers to the process of translating the instruction into signals the computer can execute. Executing is the process of carrying out the commands. Storing, in this context, means writing the result to memory.

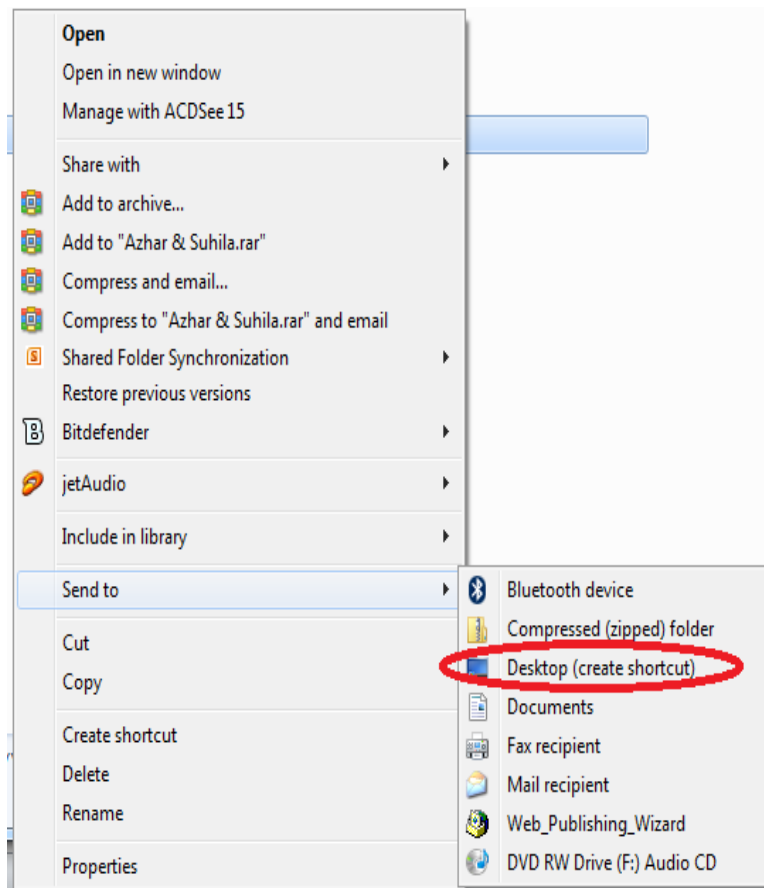


## Lecture (6)

### Creating Desktop Shortcut Icons

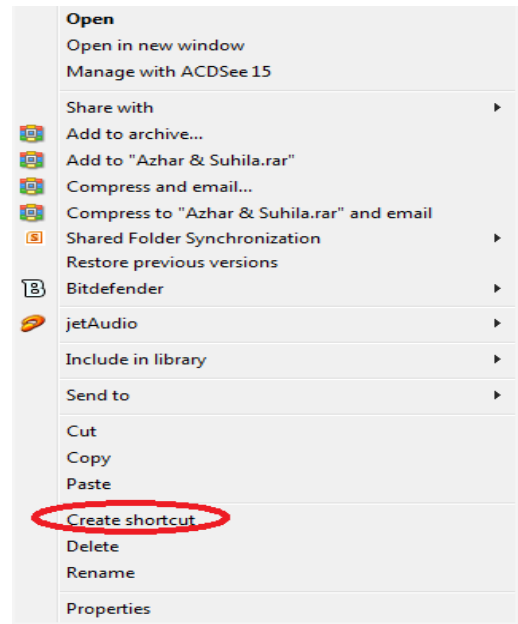
Sometimes it might be necessary for the user to create a shortcut on the desktop. Usually, the reason behind this is that the user uses a particular file/folder regularly and the user wants to be able to open it easily and quickly. To create a new shortcut:

- Right-click on a file / folder.
- Move the pointer to send to.
- Click Desktop (Create Shortcut). A shortcut to that file/folder will be created on the desktop.



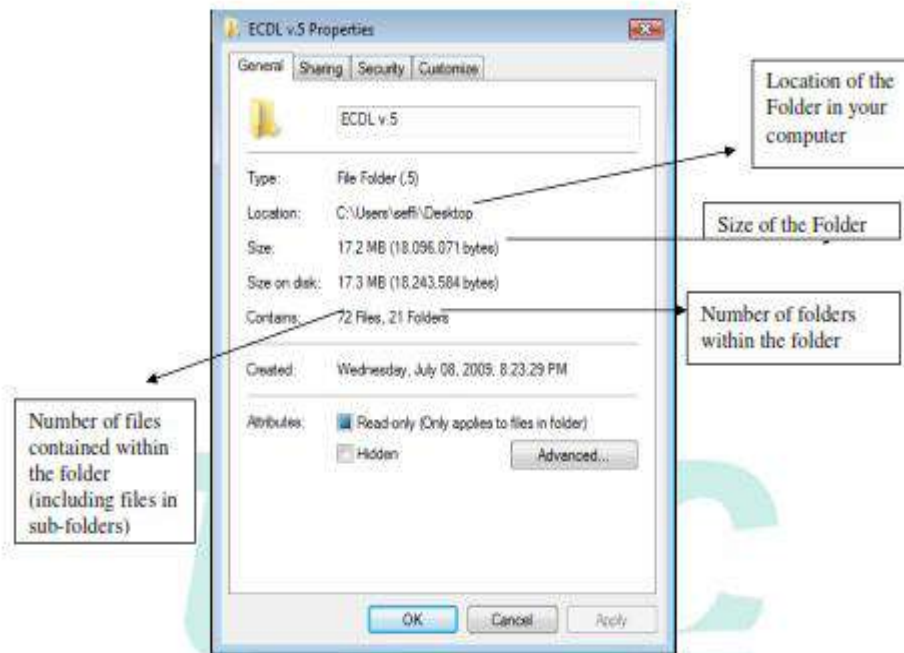
### Creating a Shortcut to another Location on the Computer

- Right-click on a file / folder.
- Click create a shortcut.
- The shortcut will be created next to the selected file/folder.



Open a window to display folder name, size, and location on a drive.

- Right-click on the folder.
- Click Properties. The following window will appear:



### Desktop Icons

An **icon** is a small graphical representation of a program or file. When the user [double-click](#) an icon, the associated file or program will be opened.





My computer icon



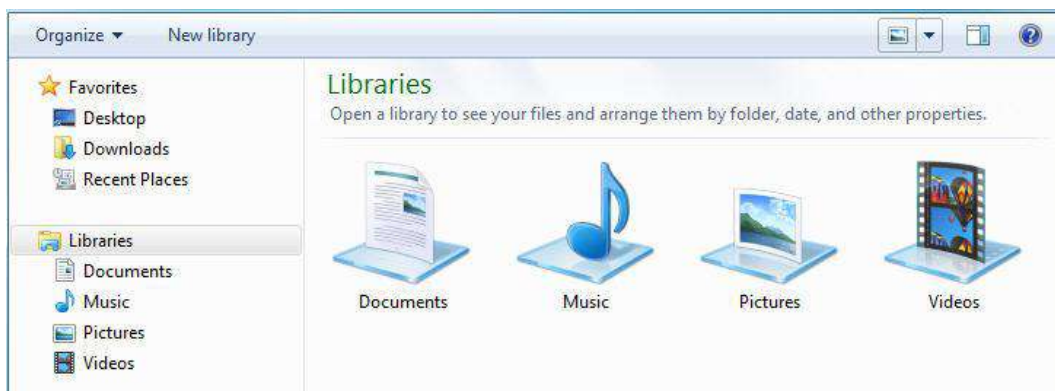
Document icon



Recycle bin icon

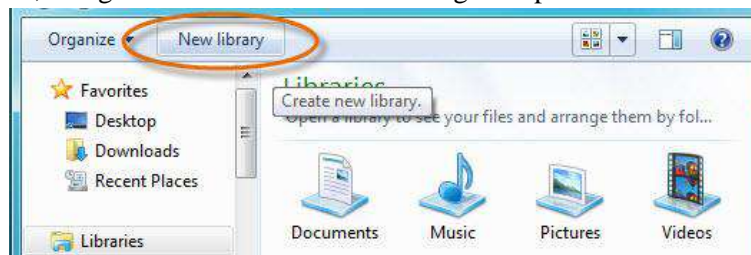
## Libraries

Libraries are collections of your stored content that can be easily accessed. Libraries do not replace the folders; they simply house them in a single collection. When files are placed in a Library, their properties are indexed by the Search function. This indexing makes accessing files in Search quick and easy. There are four default Libraries in Windows 7: Documents, Pictures, Music, and Videos.



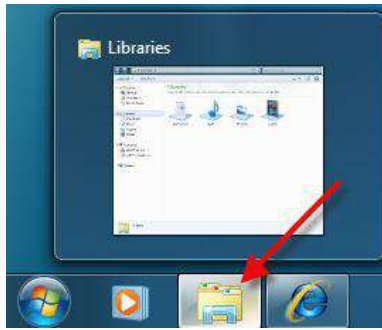
### To create your own Library:

Select New Library in the toolbar, or right-click Libraries in the Navigation pane. Select New and then Libraries.



## Windows Explorer

Click the folder icon on the **taskbar** to open Windows Explorer.



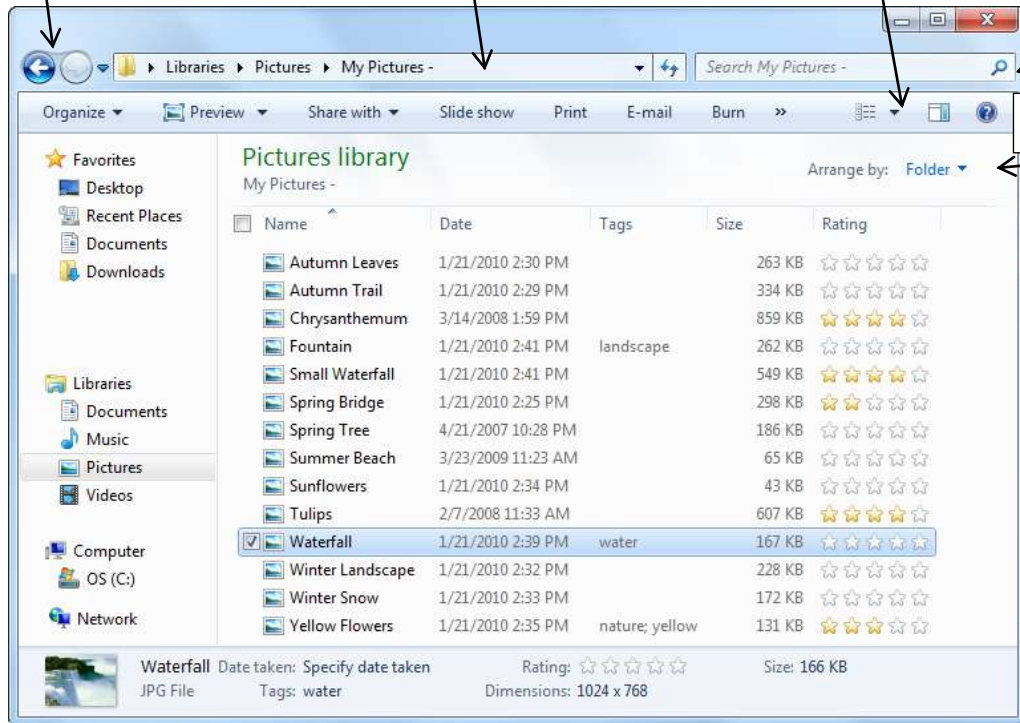
Navigation buttons

Address bar

View buttons

Search bar

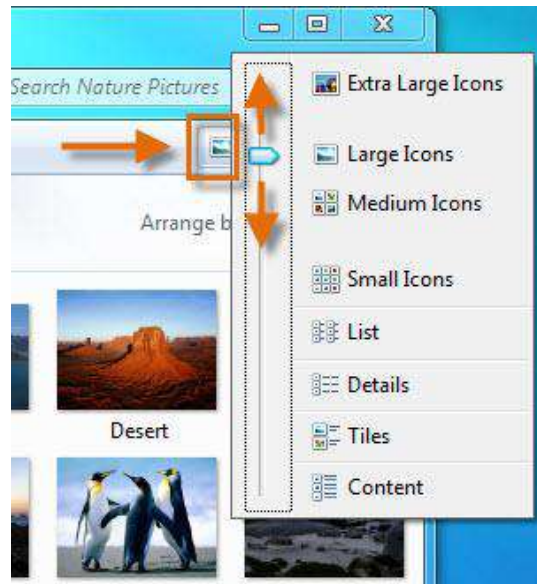
Arrange by



## The Windows Explorer Views

To change the view of the content in the folders the user has several options for how he can view content in the folders. For example, the user may prefer seeing Details when viewing file documents and Extra Large Icons when viewing pictures.

To change the view, select the View button and choose your preference.

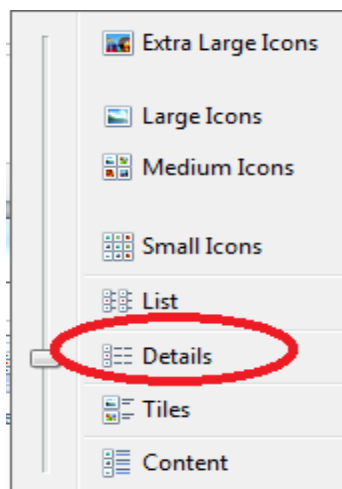


- **Medium and Large:** Displays picture files as a series of small pictures.
- **Tiles:** Displays only the file titles.
- **Small Icons:** Displays all objects as icons.
- **List:** Displays all files/folders in list format split into multiple columns.
- **Details:** Displays all files and associated file details such as name, size, type, and last accessed date in a single column.

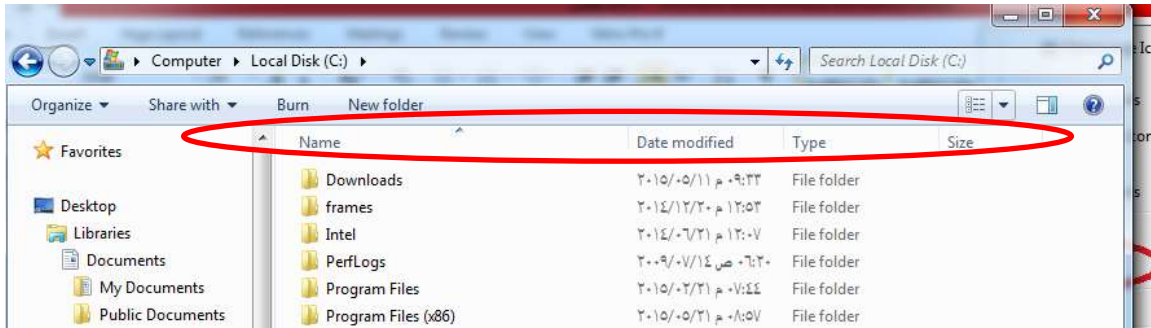
### Sort files

The files displayed in the My Computer window can be sorted by name, size, file type, and the date/time last modified:

- Click View, Details.



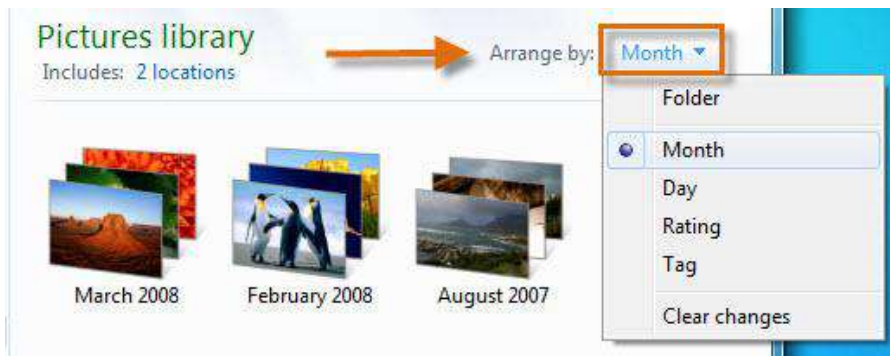
- Click the appropriate header:



**To change how your content is arranged:**

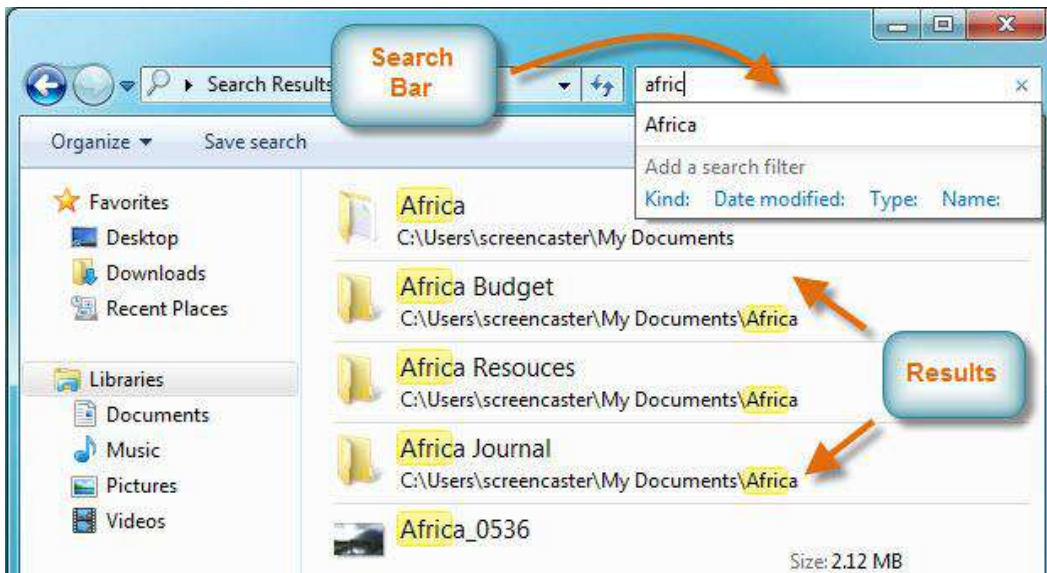
Depending on the Library, the user can **Arrange** content by month, day, rating, and other factors.

Select the **Arrange by** button, and choose your preference.



**Using Search**

Locate the **Search bar** at the top right corner of the **Windows Explorer** pane. Start typing a file name or keyword. **Search** will start displaying matching items even before you finish typing.



## Lecture (7)

**Memory:** consists of electronic components that store instructions waiting to be executed by the processor, data needed by those instructions, and the results of processing the data (information). Memory stores three basic categories of items: (1) the operating system and other system software that control or maintain the computer and its devices; (2) application programs that carry out a specific task such as word processing; and (3) the data being processed by the application programs and resulting information.

Memory is divided into two types:




1. **The main Memory Unit (MMU)** is used to store data and instructions. It is the storage space in the computer, where data is to be processed and instructions required for processing are stored. It categorized into two:
  - ❖ **RAM:** Random Access Memory.
  - ❖ **ROM:** Read Only Memory.

The following table compares RAM and ROM.

RAM	ROM
Store the currently active programs and their data.	Stores certain fixed routines such as the boot-up routines.
RAM is volatile: When the computer is switched off, the contents are lost.	ROM is non-volatile: When the computer is switched off, the contents are not lost.
The contents of RAM can be changed or deleted.	The contents of ROM cannot be changed or deleted.

2. **Secondary Memory** is used for storing data/information permanently. It is slow and the cheapest form of memory CPU cannot process this memory directly, to do any processing on this memory, firstly it has to be copied into the primary memory. It stores data permanently; the most common forms of secondary storage devices:
  - ❖ **Hard (Fixed) Disks.**
  - ❖ **CDs/ DVDs.**
  - ❖ **USB flash drives (Universal Serial Bus).**

**Ports:** A port is the point at which a peripheral attaches to or communicates with a system unit so that the peripheral can send data to or receive information from the computer. An external device, such as a keyboard, monitor, printer, mouse, and microphone, often attaches by a cable to a port on the system unit.

<b>Parallel ports</b>	
<b>Serial ports</b>	
<b>PS/2 Port</b>	

<p style="text-align: center;"><b>USB (Universal Serial Bus) ports</b></p>	
<p style="text-align: center;"><b>VGA Port</b></p>	

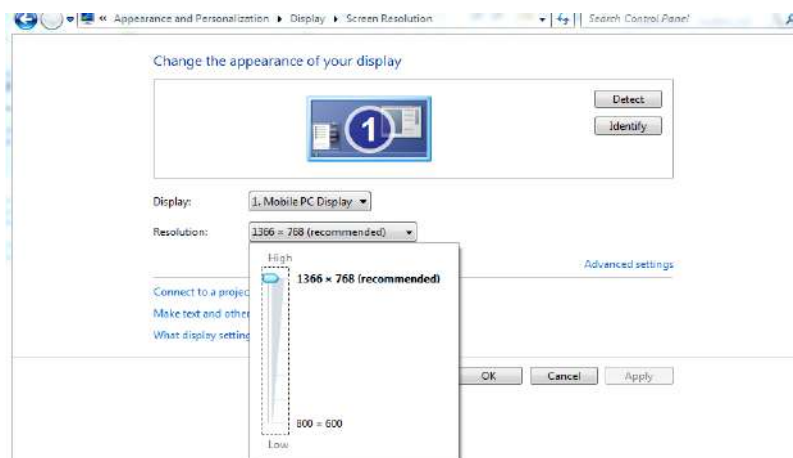
## Window 7

### Change Screen Pixel Resolution

- Right, click in an empty spot on the desktop. A shortcut menu appears. It offers various options. Click on **Screen Resolution**.



From there one can change the Resolution.



### Print Screen

The user may be required to print screenshots of regions or full-screen images from the computer to do this:

- Locate the print screen button on the keyboard and press it once. This will take a picture of the current screen.



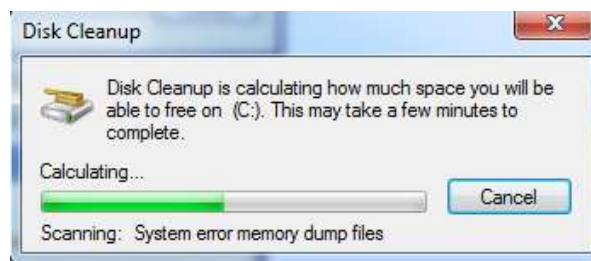
- Open a document (e.g. Word processor or Paint), and click Edit, Paste.

### Cleaning Up the Disk

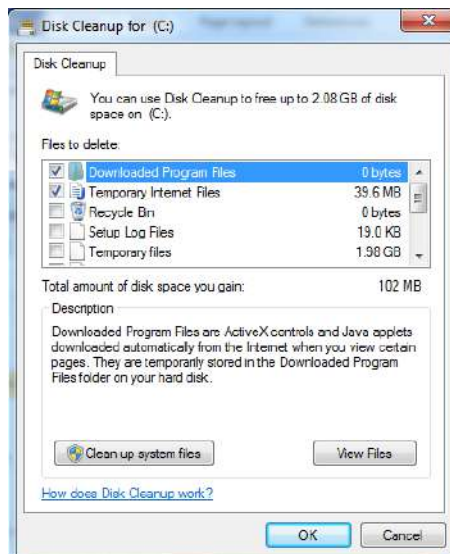
The user can safely remove redundant or unnecessary files from the hard disk by using the Disk Cleanup program. These files consist of temporary files Windows creates or makes copies of when installing or uninstalling programs, paths to Web sites visited, temporary data files, or the status of an application program when it stopped responding.

Disk cleanup can be run using one of the following methods:

- Click Start, All Programs, Accessories, System Tools, Disk Cleanup, select the hard drive the user wants to clean up and click OK.
- Open My Computer. Right-click the local disk to clean up, then click Properties. Click the General tab and then Disk cleanup.



The length of time to calculate the space depends on when this command was last used. Once Disk Cleanup finishes calculating the amount of space the user may be able to free up, the user will see a dialog box similar to:

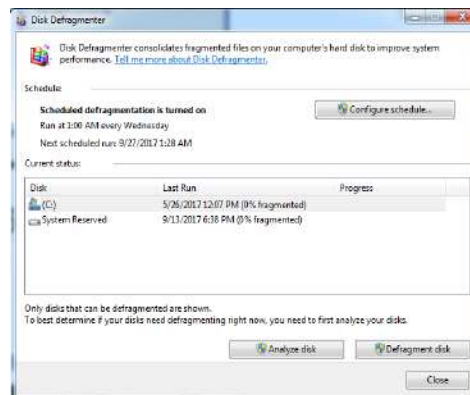


## Defragmenting the Disk

Files are stored in blocks called allocation units or clusters. A file may be stored in a single contiguous space or the first space available. Over time, a disk becomes fragmented based on the number of files, folders, or programs on the system. The Disk Defragmenter program reorganizes how information is stored on a hard disk so files reside in a contiguous section. This is also called the "Defrag" command, and a common method to reduce problems with accessing information or speed up the access time.

Disk Defragmenter can be run using one of the following methods:

- Click Start, All Programs, Accessories, System Tools, Disk Defragmenter.
- Open My Computer. Right-click the local disk to defragment, then click Properties. Click the Tools tab and then Defragment Now.



## Control Panel

The Control Panel in Windows 7 is the place to make changes to various settings of the computer system and to control most Windows commands and features using the various options and sliders in the Control Panel.

To open the Control Panel, click the **Start button** on the taskbar and then click Control Panel on the Start menu. Windows 7 has **three different views** for looking at the computer's Control Panel.





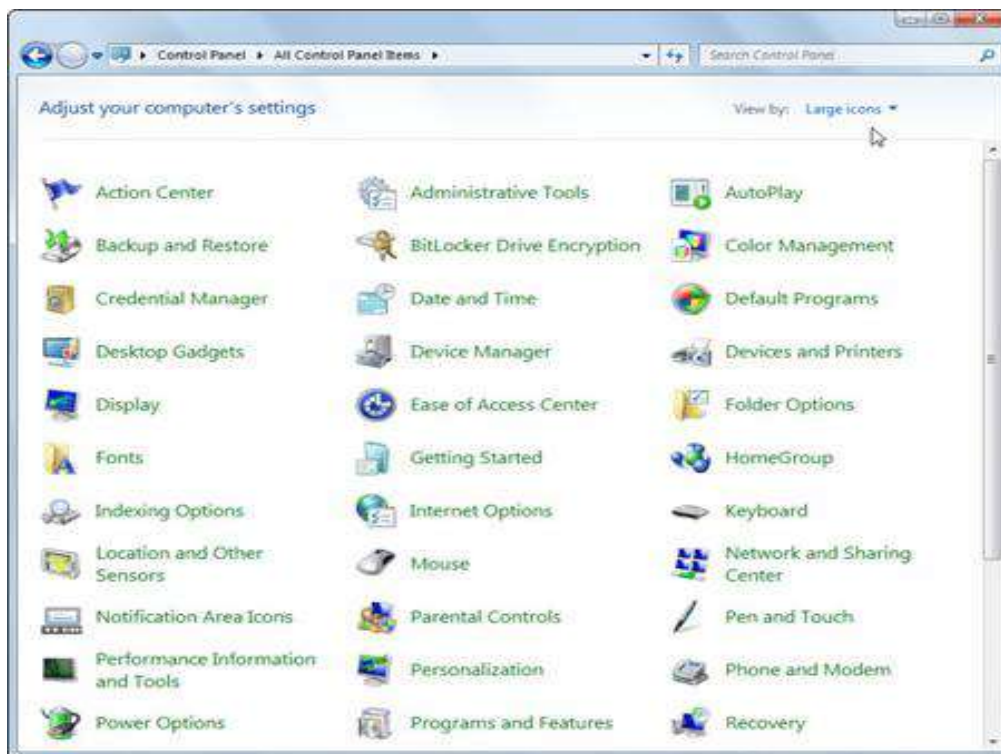
## A. Category view

By default, the Control Panel is displayed in Category view, which is separated into **eight categories**: System and Security, User Accounts and Family Safety, Network and Internet, Appearance and Personalization, Hardware and Sound, Clock, Language, and Region, Programs and Ease of Access.



## B. Icon views

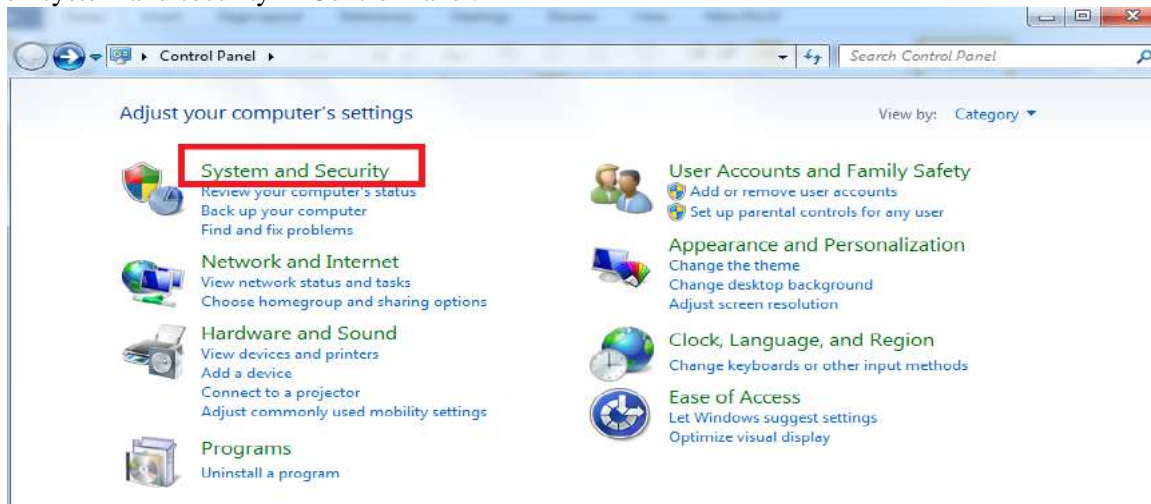
The Control Panel's other two views are the Large Icons view and Small Icons view. When the Control Panel is in one of the icon views, Windows displays an alphabetical listing of the **more than 50 Control Panel programs** on the system.



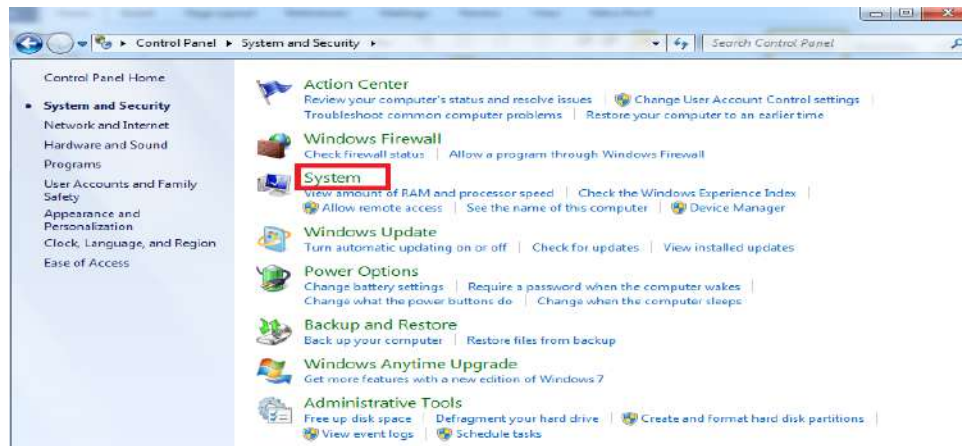
## System and Security

### View the computer's basic system information

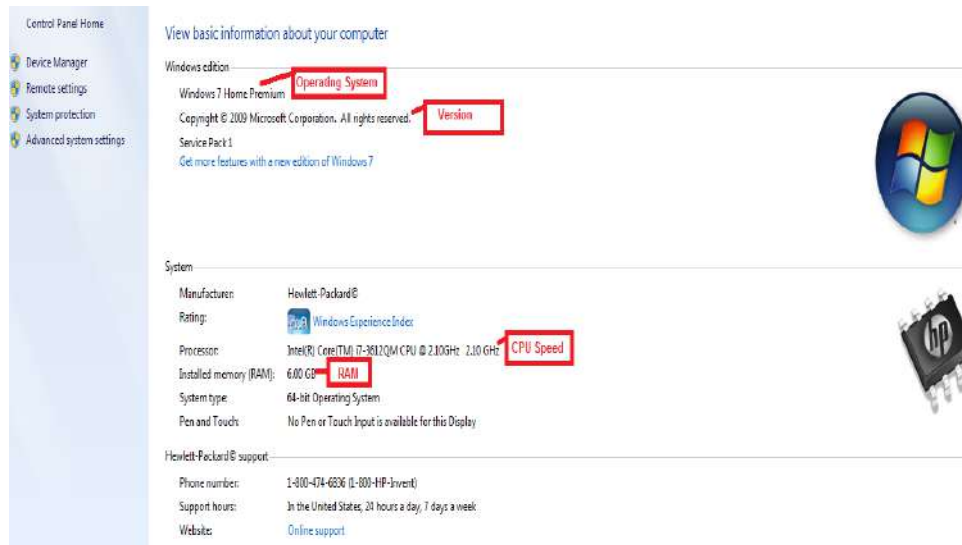
- Click on system and security in Control Panel.



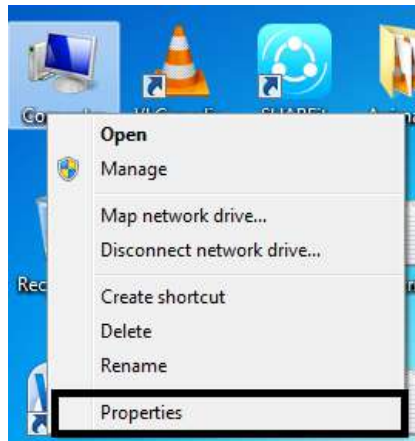
- Double-click on the System icon.



- The following window will be displayed:



Also to view the computer's basic system information right-click on the My Computer icon on the desktop and select Properties from the drop-down window.



## Lecture (8)

### **Software**

A series of related instructions, organized for a common purpose, tell the computer what task(s) to perform and how to perform them. Software today often has a graphical user interface. With a graphical user interface, you interact with the software using text, graphics, and visual images such as icons. There are three types of software:

- Operational Software (Operating System).
- Applications Software.
- Programming language.

**Operating System** An operating system is a set of programs that coordinates all the activities among computer hardware devices. It provides a means for users to communicate with the computer and other software. Many of today's computers use Microsoft's Windows, Mac OS, and Linux.

When a user starts a computer, portions of the operating system are copied into memory from the computer's hard disk. These parts of the operating system remain in memory while the computer is on.

**Applications Software** consists of programs designed to make users more productive and/or assist them with personal tasks.

Application software has a variety of uses:

1. To make business activities more efficient.
2. To assist with graphics and multimedia projects.
3. To support home, personal, and educational tasks.
4. To facilitate communications.

Examples include:

- Word-processing programs (for producing letters, memos, etc.).
- Spreadsheets (for doing accounts and working with numbers).
- Databases (for organizing large amounts of information).
- Games.
- Graphics programs (for producing pictures, advertisements, manuals, etc.).

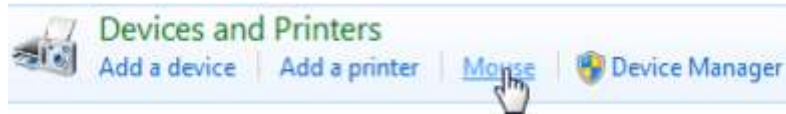
**Programming Languages** is the commands that users activate to complete a task.

- Low-level language or Machine Level Language
- Assembly Level Language or Middle-level language
- High-Level Language

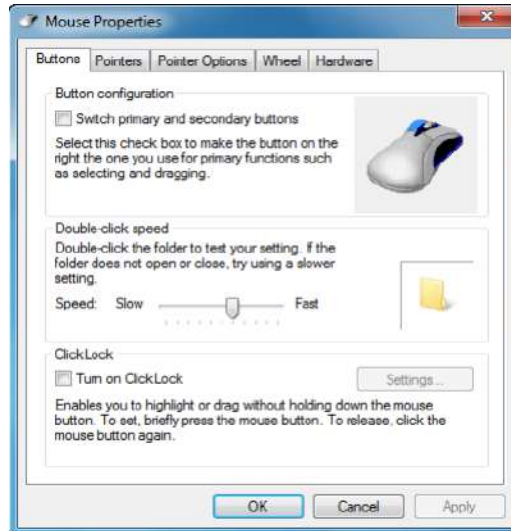
A programmer develops software or writes the instructions that direct the computer to process data into information.

## Hardware and Sound

**Mouse:** In the Control Panel, click Hardware and Sound and then click Mouse under the Devices and Printers heading.



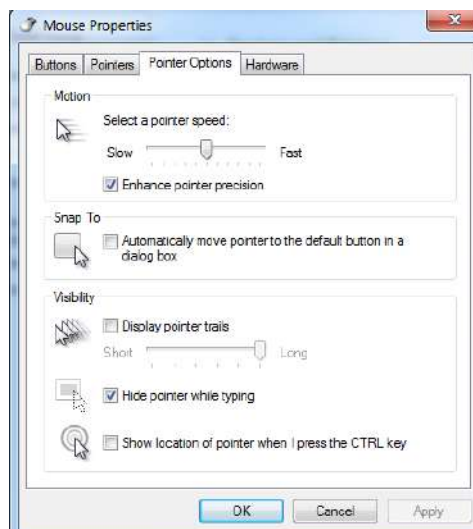
This will open the Mouse Properties dialog box:



**Left Handed** if the user is left-handed; he needs the reverse the function of the left and right mouse buttons.

**Double Click Speed** the double-click is an important skill that needs to be masters. Double-click can launch an application or open a file folder or CD.

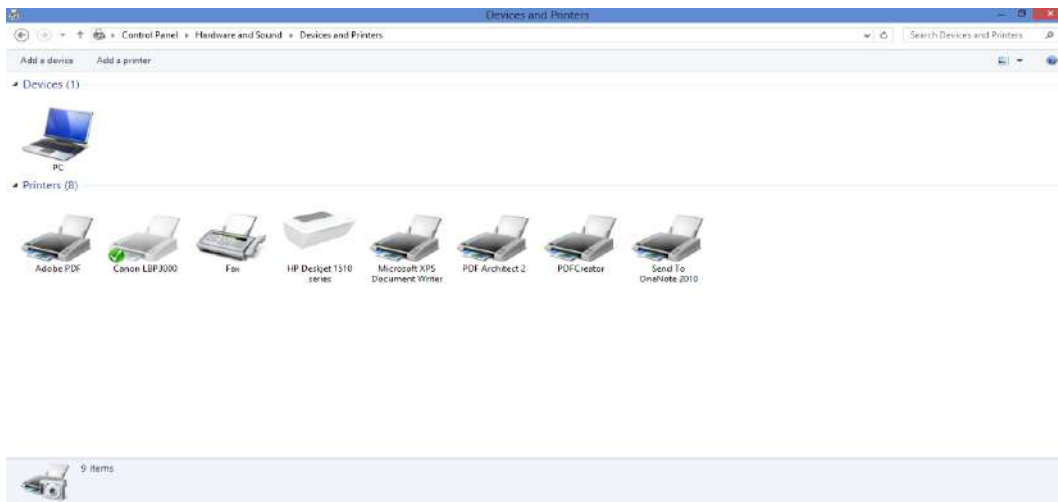
**Mouse Pointer Speed** sometimes changing the speed with which the Mouse reacts by moving the pointer on the line. To move the pointer, drag and drop it onto a new position. Click on the **Pointer Options** tab. Drag to slide to the right to increase the pointer speed.



**Install, view, and manage devices**

To see all the devices connected to the computer, open the Devices and Printers folder.

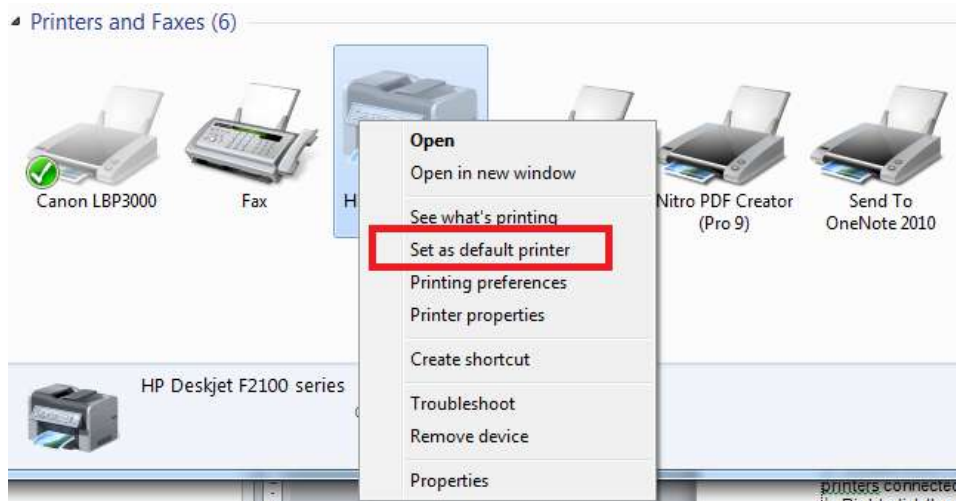
- Click Hardware and Sound in Control Panel. Click Devices and Printers.



### Changing the Default Printer

The default printer is the printer to which a computer sends documents when selecting the Print command without first specifying which printer wanting to use with a program. There is only one default printer; it should be the printer that is using most often. To set a printer as the default printer:

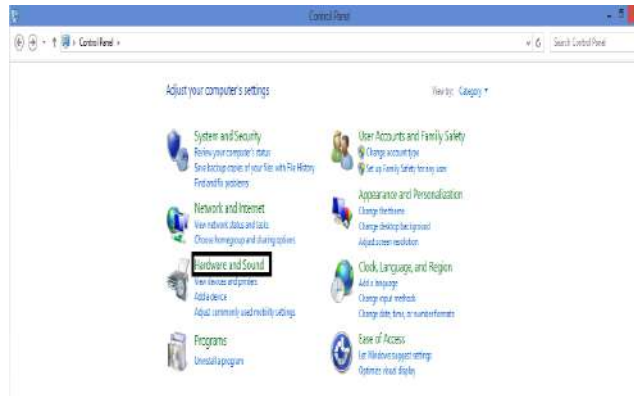
- Click Hardware and Sound in Control Panel.
- Click Devices and Printers.
- The Devices and Printers window appears, showing a list of printers that will be displayed.
- Right-click the name of the printer to set it as a default printer.
- Click Set as Default Printer. The icon of the selected printer will display a checkmark on the top right corner.



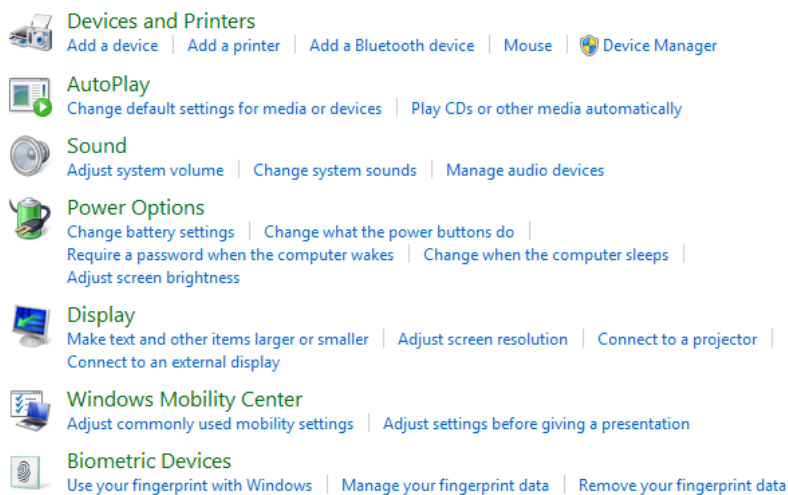
### Setting the computer sound volume

In this case, be careful not to make any changes, but simply know how to make setting the computer sound volume.

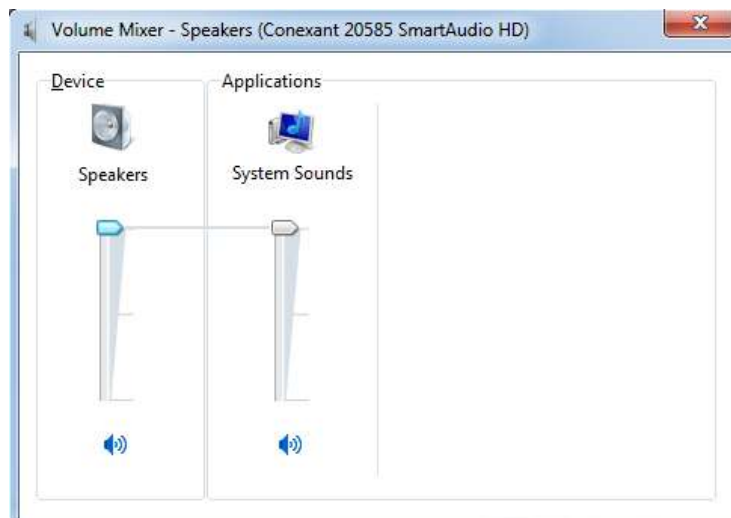
- Click on the **Hardware and Sound** command in Control Panel.



- This will display the **Hardware and Sound** dialog box.



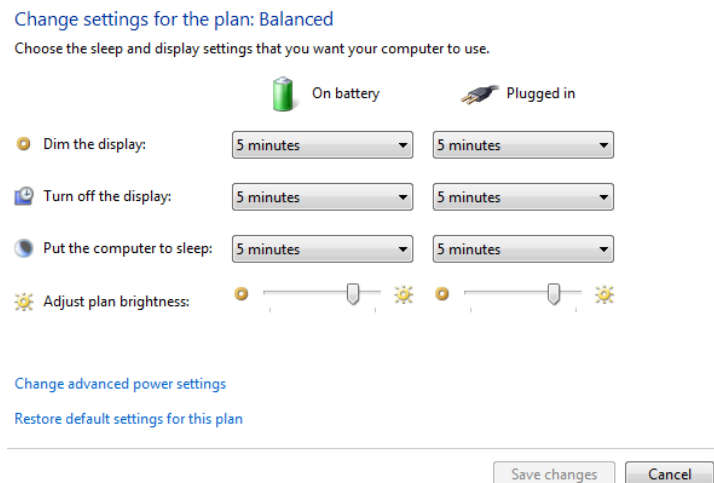
Within the **Sound** section click on the **Adjust system volume** link. The user will see a slider control display and modify the computer volume.



### Change the power setting

The user might want to change plans to save battery power on the laptop or reduce energy consumption on a desktop at home or the office.

- Click Hardware and Sound, click "Power Options"
- Click "Change battery settings". Select the power profile the user desire.



## User accounts and family safety

With Windows 7, everyone who uses your computer can have their own **user account**. This allows each person to have his or her own settings, and it allows you to set up **Parental Controls** to limit the types of games and programs your children are able to use.

The user could have a **single account** on your computer that everyone could use. But having **multiple accounts** has some advantages. If each user has his or her own account, then each person will have his or her own desktop for organizing files and folders. Each person also will be able to choose a specific **desktop background**, along with other personalization features. In addition, parents will be able to set **Parental Controls** for each child's account.

### Standard vs. administrator accounts

It's important to understand the two types of accounts:

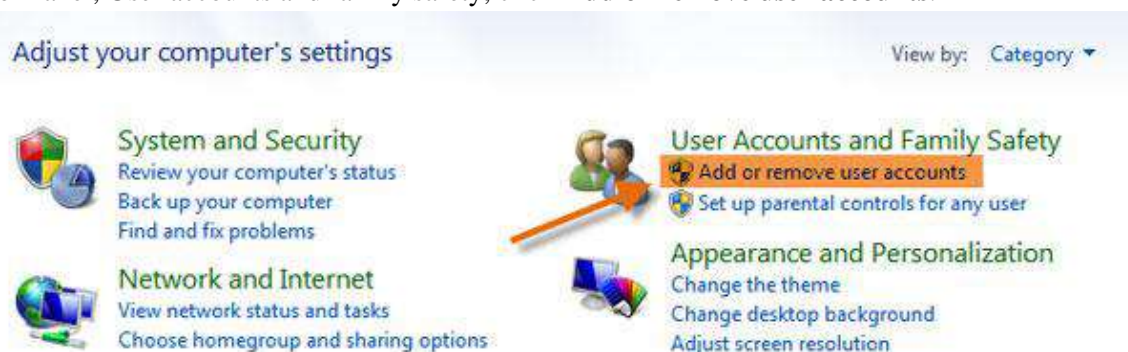
**Standard:** Standard accounts are the basic accounts you use for normal, everyday tasks. As a Standard user, you can do just about anything you would need to do, such as running software or personalizing your desktop.

**Administrator:** Administrator accounts are special accounts that are used for making certain changes to system settings or managing other people's accounts. They have full access to every setting on the computer.

Administrator accounts are more powerful. But for the same reason, Standard accounts are safer, so they are generally better for everyday use.

### To go to your user accounts:

Go to the Control Panel, User accounts and family safety, click **Add or remove user accounts**.





The **user** will see all of the user accounts here, and you can add more accounts or manage existing ones.



### To create a new account:

From the **Manage Accounts** pane, click **create a new account**, type an **account name**.  
Select **Standard user** or **Administrator**, click **Create Account**.



### Changing an account's settings

To create a password: From the **Manage Accounts** pane, click the account name or picture. Click **Create a password**.



## Make changes to Will Jr's account

[Change the account name](#)

[Create a password](#)

[Change the picture](#)

[Set up Parental Controls](#)

[Change the account type](#)

[Delete the account](#)

[Manage another account](#)



Type a password in the **New password** field, and retype it in the **Confirm new password** field.

You are creating a password for Will Jr.

**If you do this, Will Jr will lose all EFS-encrypted files, personal certificates and stored passwords for Web sites or network resources.**

To avoid losing data in the future, ask Will Jr to make a password reset floppy disk.

If the password contains capital letters, they must be typed the same way every time.

[How to create a strong password](#)

The password hint will be visible to everyone who uses this computer.

[What is a password hint?](#)

Create password

Cancel

Click **Create password**.

To go back to the Manage Accounts pane, click **Manage another account**.

Account passwords are **case sensitive**, which means capital and lowercase letters are treated as different characters. For example, **aBc1** is not the same as **abc1**.

To change your account picture:

You can also **change the picture** for any account. This picture appears next to the account name and helps you easily identify the account.

From the **Manage Accounts** pane, click the account name or picture.

Click **Change the picture**.

### Make changes to Will Jr's account

Change the account name

Change the password

Remove the password

Change the picture

Set up Parental Controls

Change the account type

Delete the account

Manage another account



Select a picture, or click **Browse for more pictures** to select one of your own.

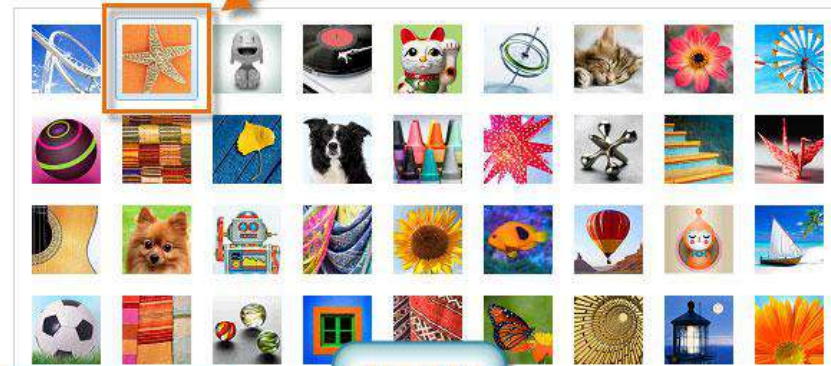
Choose a new picture for Will Jr's account



Will Jr  
Standard user  
Password protected

Select your favorite picture

The picture you choose will appear on the Welcome screen and on the Start menu.



Browse for more pictures...

Or use one of your own

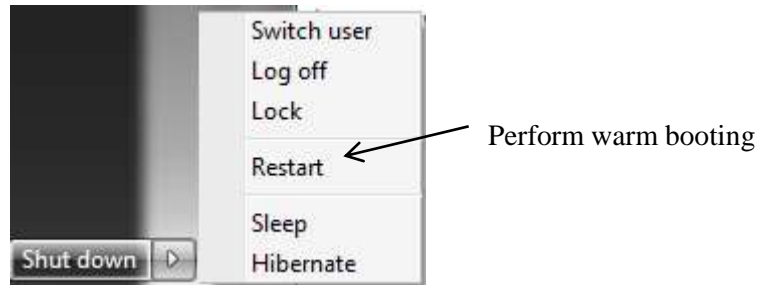
Change Picture

Cancel

Click **Change Picture**.

## Lecture (9)

**Booting** is the process of starting or restarting a computer. When turning on a computer that has been powered off completely you are performing a cold boot. A warm boot, by contrast, is the process of using the operating system to restart a computer. With Windows, for example, you can perform a warm boot by clicking a menu command. When you install new software or update existing software, often an on-screen prompt instructs you to restart the computer. In this case, a warm boot is appropriate.



### Measurement of storage capacity

A bit (short for binary digit) is the smallest unit of [data](#) in a computer. A bit has a single [binary](#) value, either 0 or 1. They are designed to store data and execute instructions in bit multiples called [byte](#)s. In most computer systems, there are eight bits in a byte.

There is also binary code for uppercase and lowercase letters:

A: 01000001 a: 01100001

B: 01000010 b: 01100010

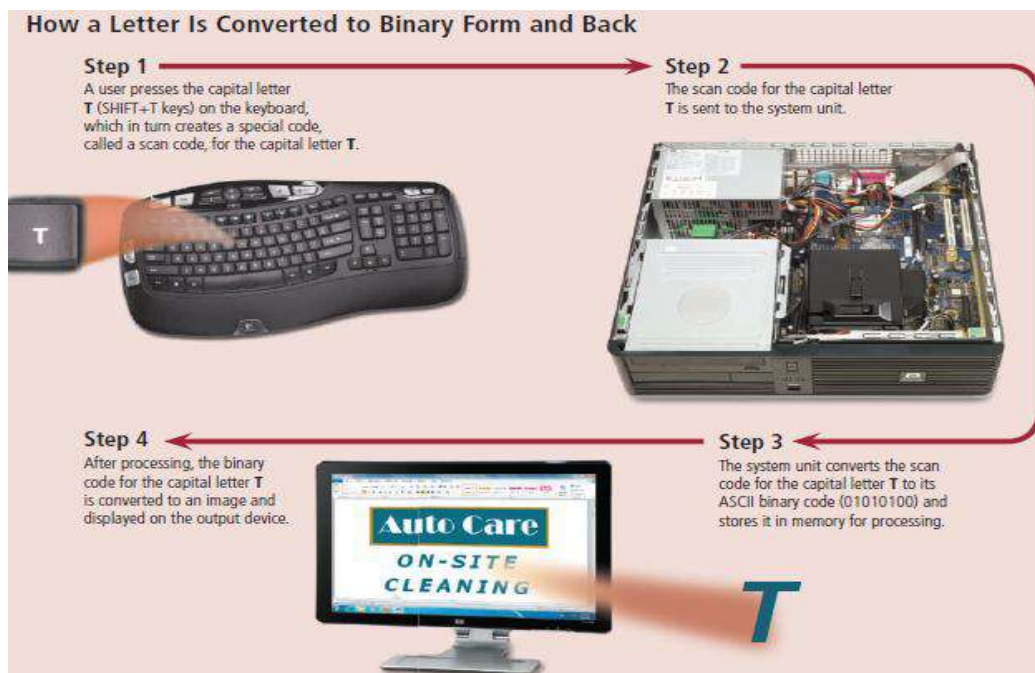
Byte: There are eight bits in a Byte.

KB - Kilobyte: There are 1024 bytes in a KB

MB - Megabyte: There are 1024 KB in a MB

GB - Gigabyte: There are 1024 MB in a GB

TB - Terabyte: There are 1024 GB in a TB

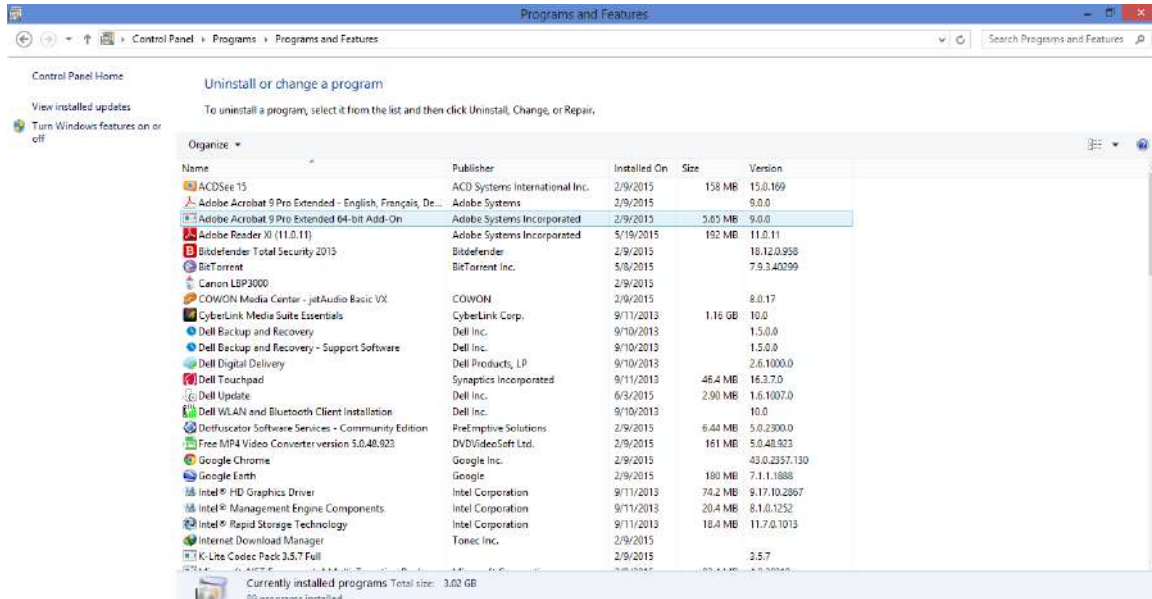


## Control Panel

### Programs

#### Adding/Removing Programs

Sometimes, programs can stop being useful or even start harming the computer, so it necessary to remove them. In Category view, click the "Uninstall a program" link under the "Programs" category.



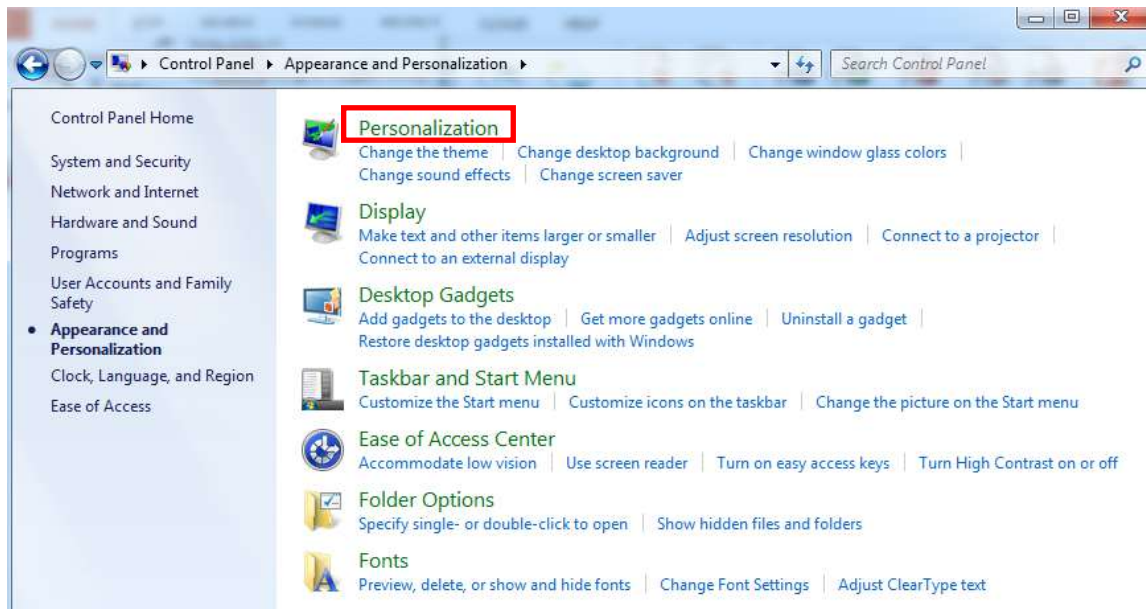
### Appearance and Personalization

#### Changing the Desktop

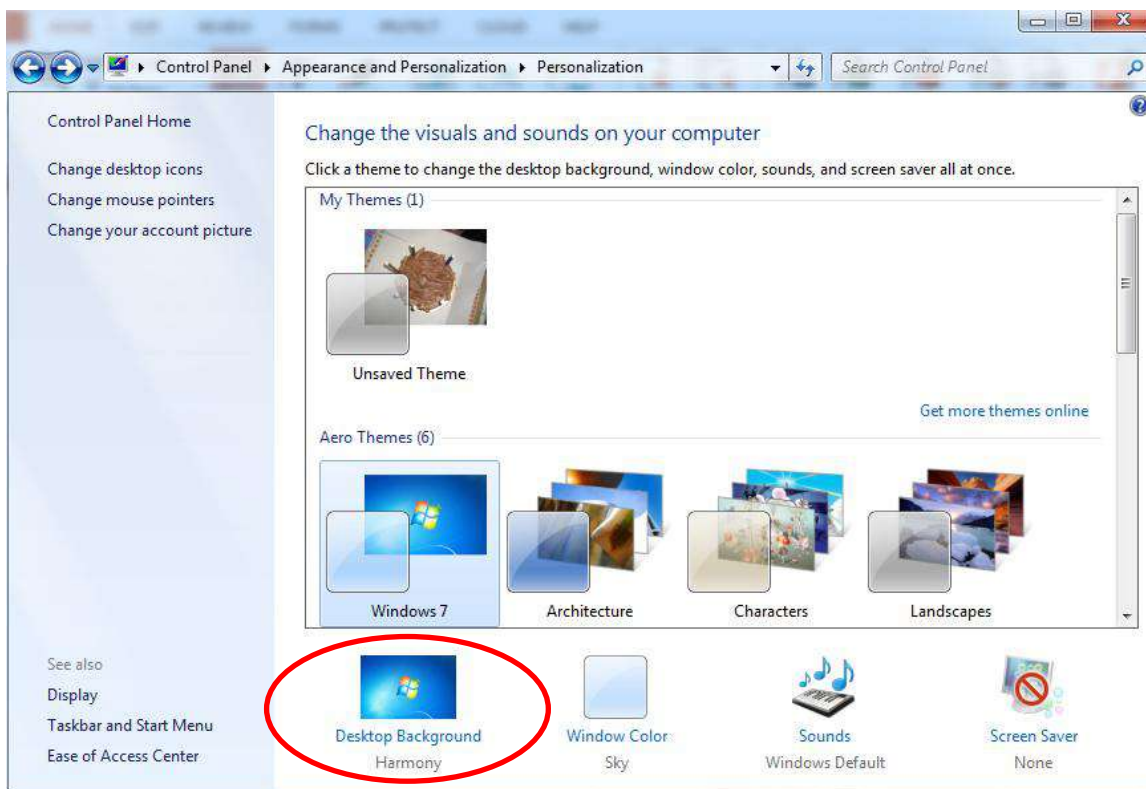
- Clicks on Appearance and Personalization.



- Click on Personalization

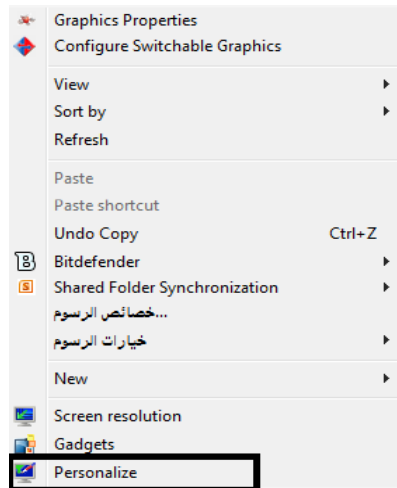


- Click on Desktop Background.



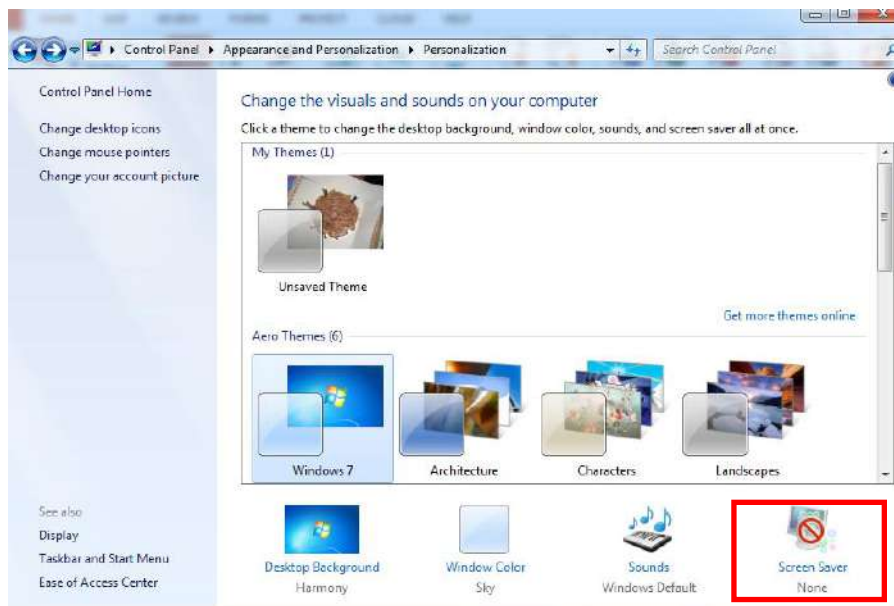
- Select a picture then save the change. Or click on Browse. Select background from file browser windows.
- Click Open.

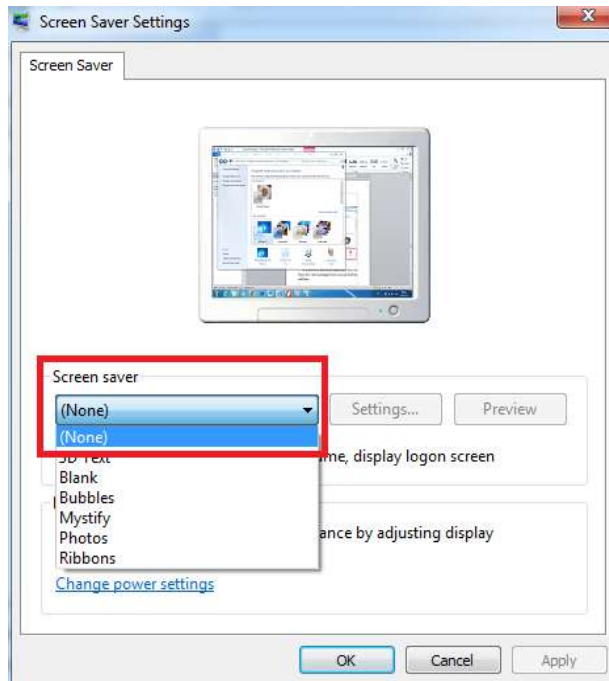
Or right-click in an empty spot on the desktop. A shortcut menu appears. It offers various options. Click on **Personalize**. Click on Desktop Background. Select a picture then save the change. Or click on Browse. Select background from file browser windows. Click Open.



### Change the Screen Saver

- Click on Personalization. Click on Screen Saver.
- From the window given choose the screen saver by clicking on the arrow under the text Screen Saver and choose from the list given



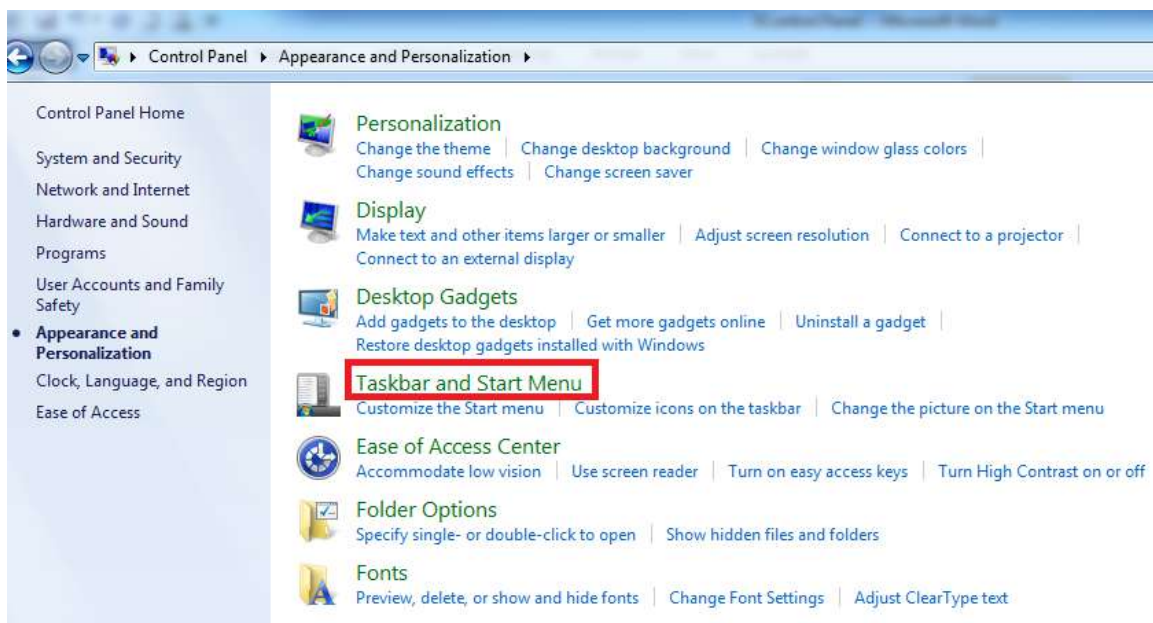


- Preview to see how the screen saver looks like. Also, change the minutes to wait before the screen saver show up.

**Or** Click on Personalization then on Screen Saver. From the window given choose the screen saver by clicking on the arrow under the text Screen Saver and choose from the list given. Preview to see how the screen saver looks like. Also, change the minutes to wait before the screen saver show up.

### Open Taskbar and Start Menu from Control Panel

Open Taskbar and Start Menu Properties by clicking **Control Panel**, clicking **Appearance and Personalization**, and then clicking **Taskbar and Start Menu**.

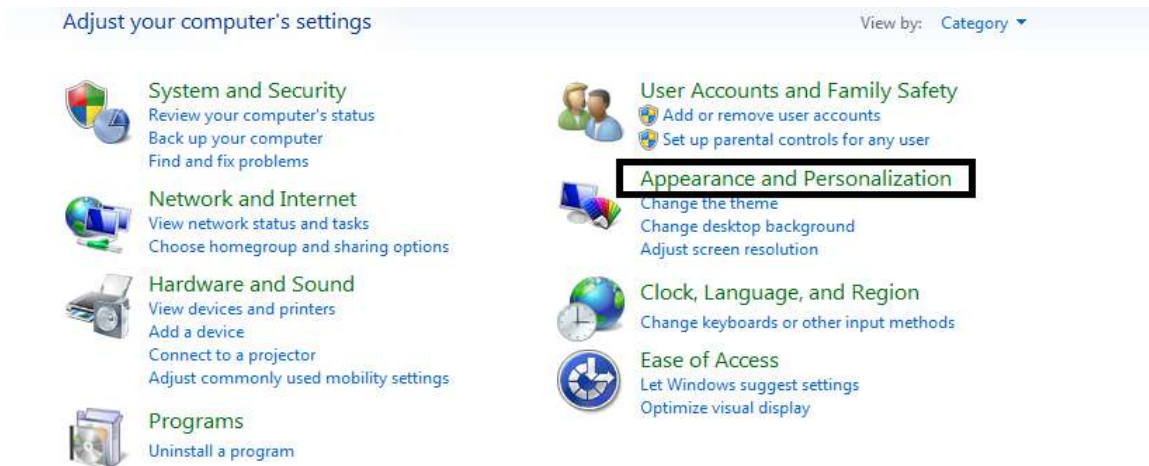




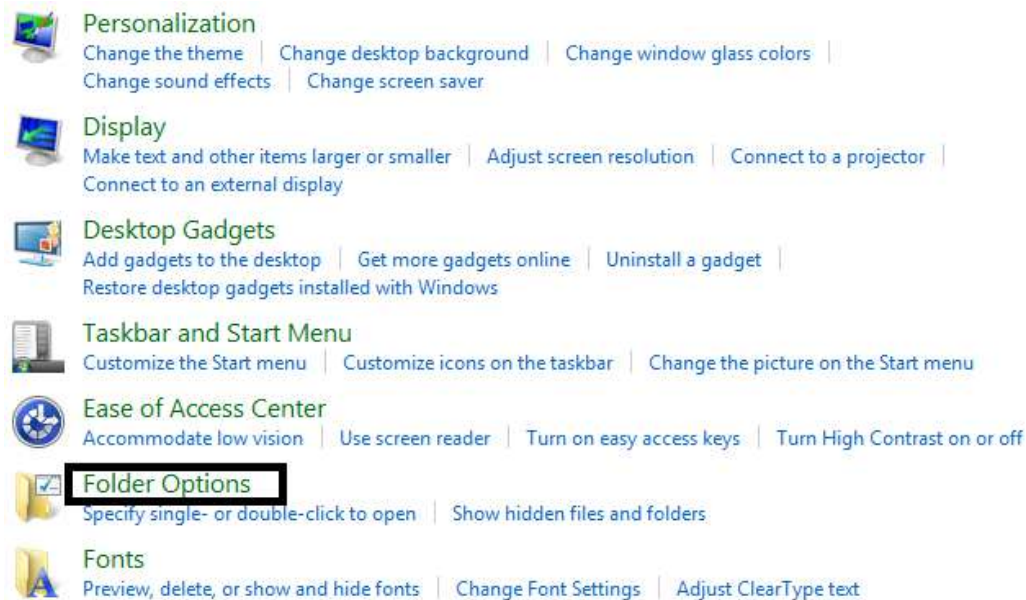
## Show Hidden Files

Windows 7 hides important folders and files to keep users from modifying or deleting their files and subsequently damaging their systems. Windows 7 does not show hidden files by default.

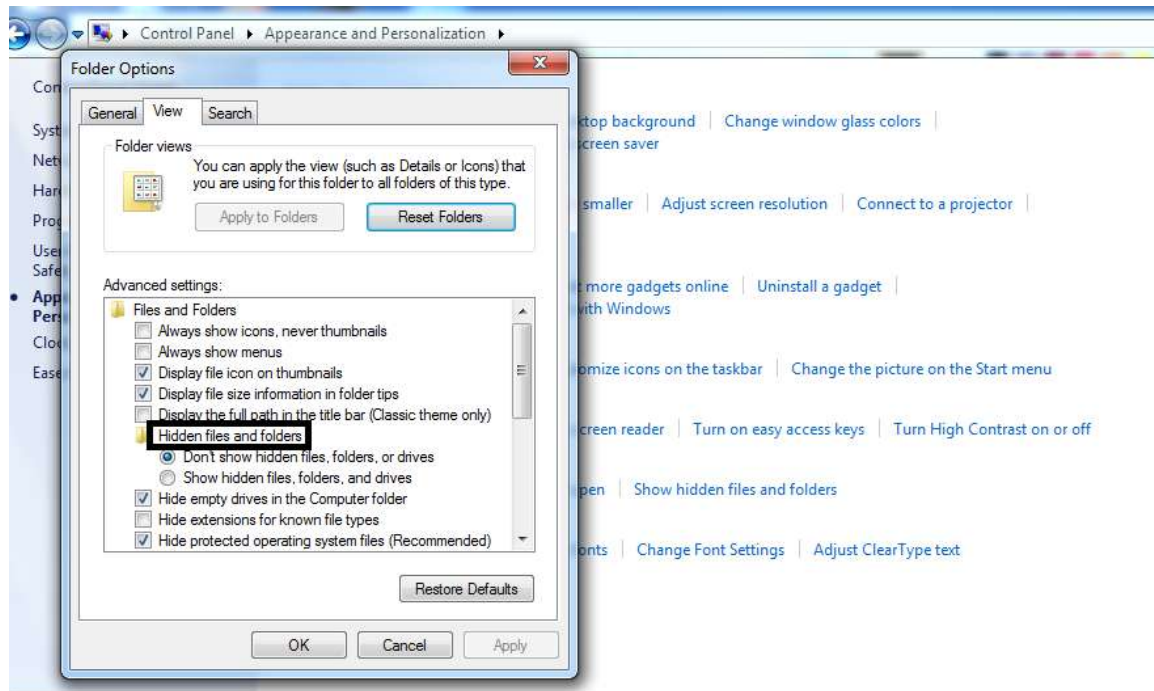
- Click on Appearance and Personalization.



- Click Folder Options.

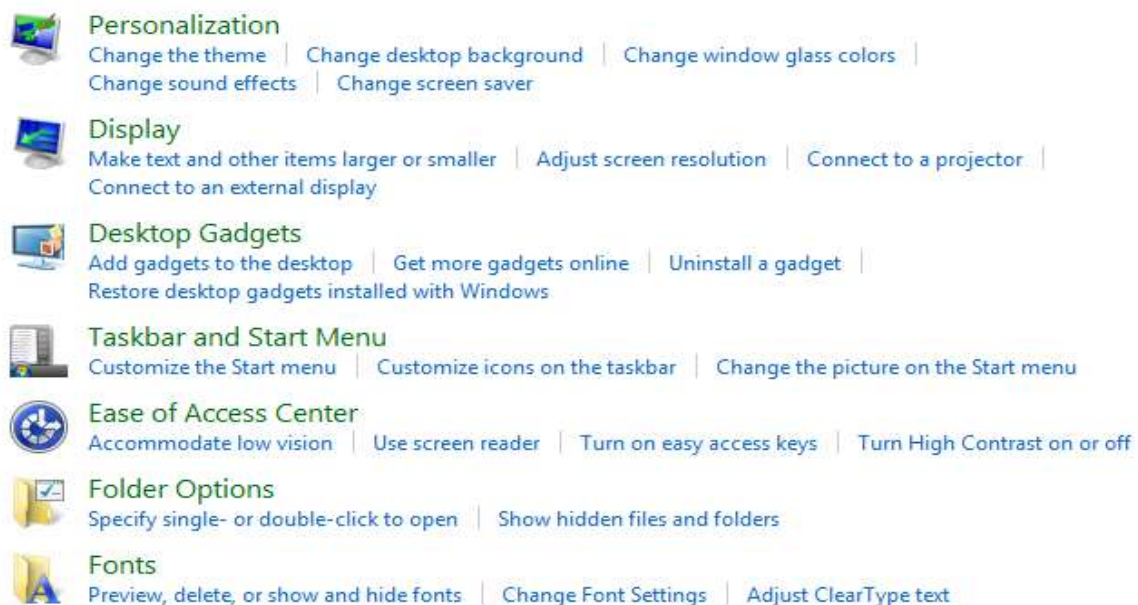


- Click on the View tab in the Folder Options window.

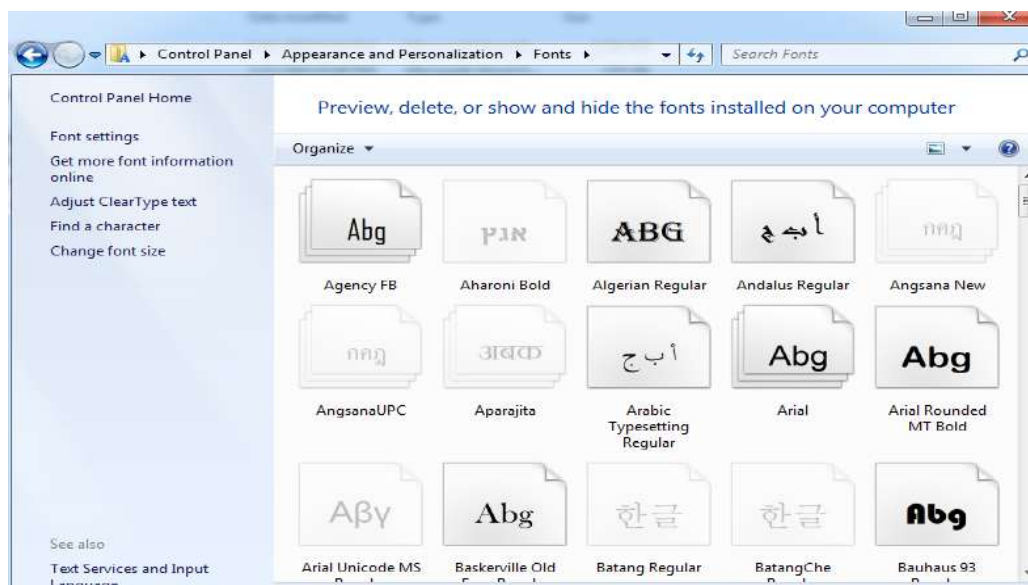


## Adding Fonts

- Click Appearance and personalization command in Control Panel.
- The fonts that are installed on the computer can be seen by going to the Fonts Window. It is installed as part of the Operating System (OS).



- Then Click on the **font**. The user will see the following:



### To change font size:

Adjust the **font size** by selecting **Change Font Size** from the menu on the left of the Fonts pane. Select the desired font size and click Apply.

### Make it easier to read what's on your screen

You can change the size of text and other items on your screen by choosing one of these options. To temporarily enlarge just part of the screen, use the [Magnifier](#) tool.


Smaller - 100% (default)

Medium - 125%

Larger - 150%

Preview



 This change will take effect the next time you log on.

Some items may not fit on your screen if you choose this setting while your display is set to this resolution.

Apply

- Please note that a larger font size may interfere with how some items are displayed on the screen.

## **Lecture (10)**

### **Factors affect computer performance**

1. Speed of CPU.
2. Size of RAM.
3. Speed and size of the hard disk.
4. Multiple processes running on the computer.
5. Video card.

It is important to realize that it is not just the speed of the CPU that affects the overall performance of your computer. There is no point in having a very fast CPU if the other parts of a computer may slow down the overall performance.

### **Security and Keeping Information Safe**

Information Security is a general term used to describe all kinds of security in a computerized environment. The risk of computer operating problems greatly increases. This can lead to serious problems including loss of privacy and control. Protecting the computer from external risks, such as viruses, spyware, phishing, and malicious hackers is a necessary step in safe surfing of the internet.

### **The ways a virus can be transmitted onto a computer**

- Downloads from the Internet.
- Pirated software.
- Exchange of diskettes.
- In attachments to emails and emails themselves.
- In documents. Macro-viruses can be hidden in ordinary documents, spreadsheets, and presentations.

### **There are several measures the user can take to protect themselves from viruses:**

- Install good anti-virus software and update it regularly.
- Scan all diskettes before reading them and be careful of using diskettes from unknown sources.
- Enable the auto-protection feature on the anti-virus software to scan emails.
- Be wary of emails from unknown sources, particularly if they contain attachments.
- Do not download files/software from unknown Internet sites.

## Control Panel

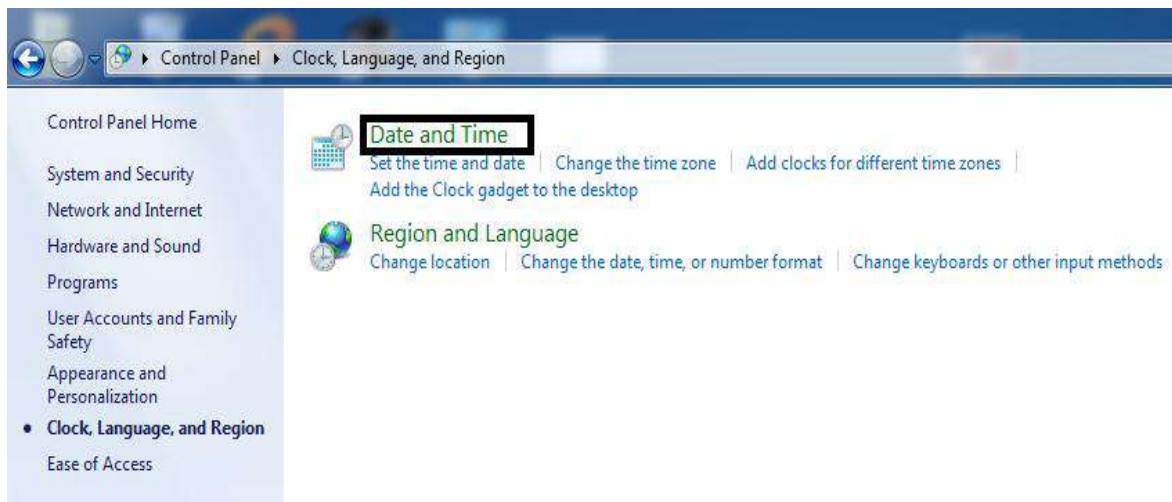
### Clock, Language, and Region

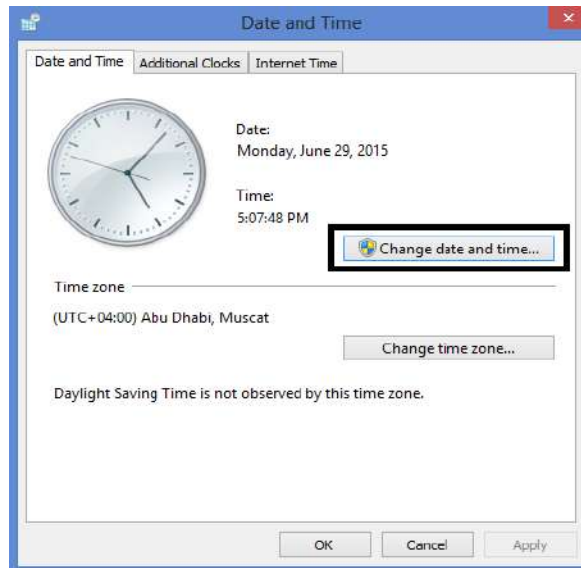
#### Modifying the computer date and time

- Click on the Start button. Click on the Clock, Language, and Region command in Control Panel.

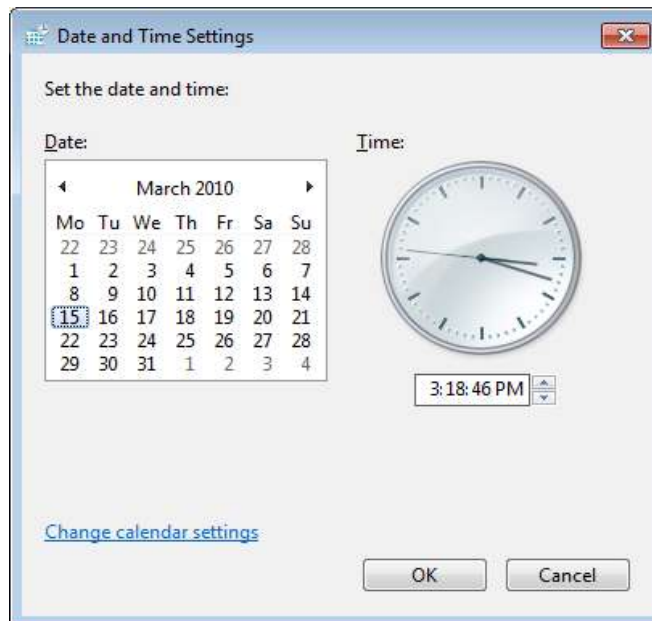


- To set the date and time, click on the **Date and Time** command. This will display the **Date and Time** dialog box allowing you to change the date or time.

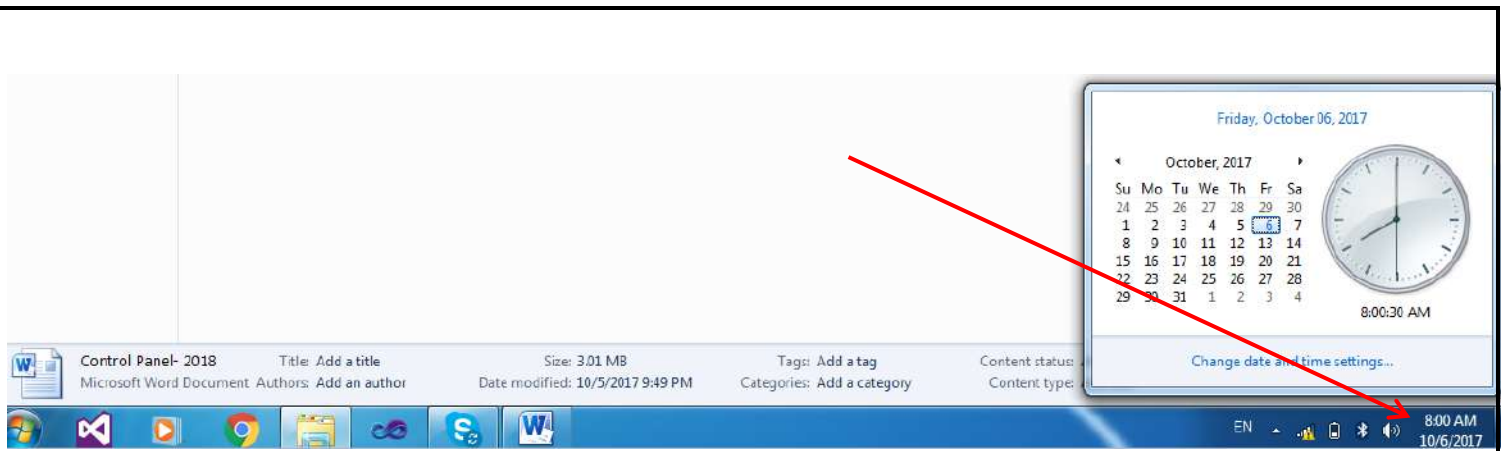




- Click on the **Change date and time** button and can use the controls to change the date and time as required.

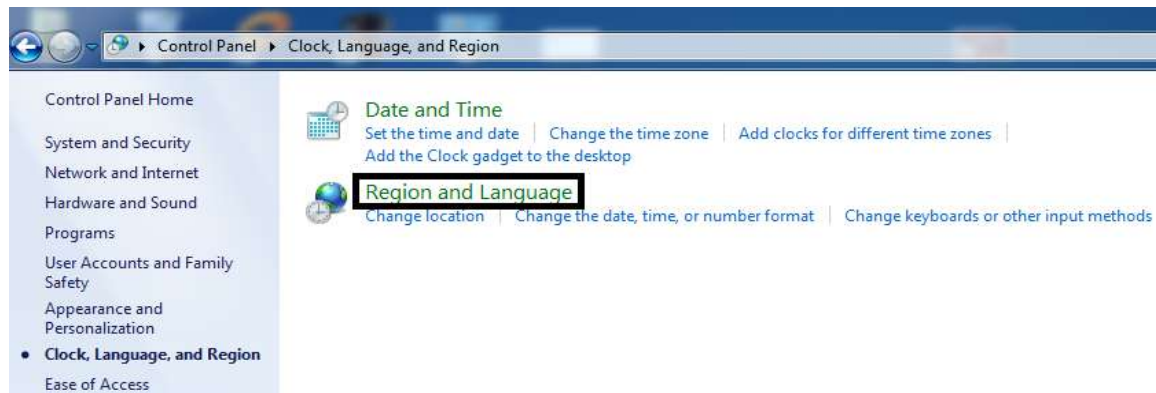


The user can also access date and time by clicking the Date/Time displays on the far right ends of the taskbar, and click Adjust Date/Time from the shortcut menu that appears. The Date and Time dialog box appears. Click the Change Date and Time button.

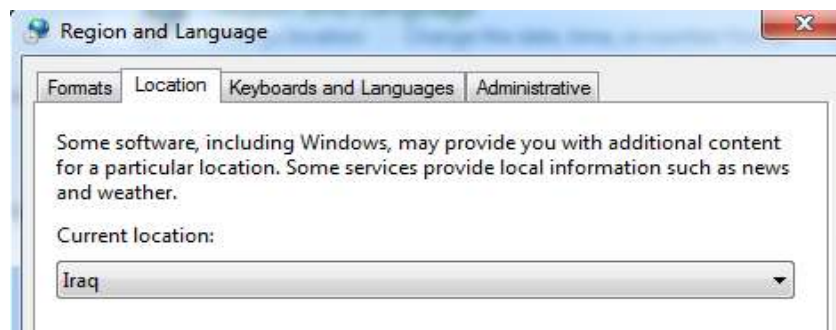


## Change Region, and Language

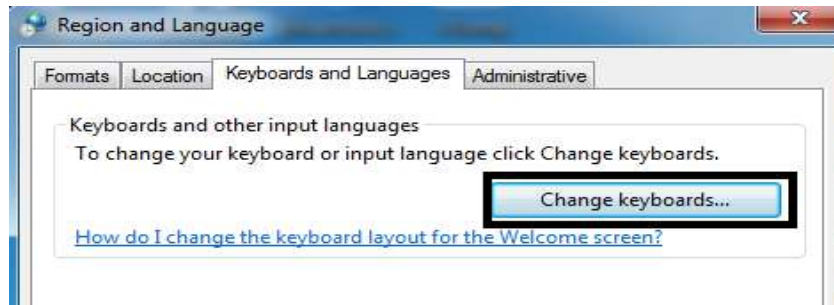
- Click on **Clock, Language, and Region** command in Control Panel. Click on **Region and Language** dialog box will be displayed.



- Click on the **Change location** link. If necessary click on the down arrow to display a list of countries, from which pick the particular country.



- Click on the **Keyboards and Languages** tab. Click on the **Change keyboards** button. This will display a dialog box allowing selecting and change the Default input language.



Adding or removing keyboard settings can also be done. To add a new keyboard language:

- Click on the **Add** button.

