

Malteser Computer Training

Sessions 1 : Computer Basics

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1. What is a computer and why use it?

Computer is an electronic machine created for carrying out calculations and storing information. Basically, every electronic machine that executes computation processes is called a computer, e.g. desktop computers, laptops, tablets, a number of electronic even mobile devices etc. Computer performs logical and computational operations at a very high speed that allows us, humans, have a tool that helps to solve different problems and perform multiple tasks at ease and with greater efficiency.

Computers exist in different shapes and sizes. Your **personal computer (PC)** is a microcomputer in which the **CPU** (central processing unit, the brains of the computer) is contained on one single chip, a *microprocessor*.

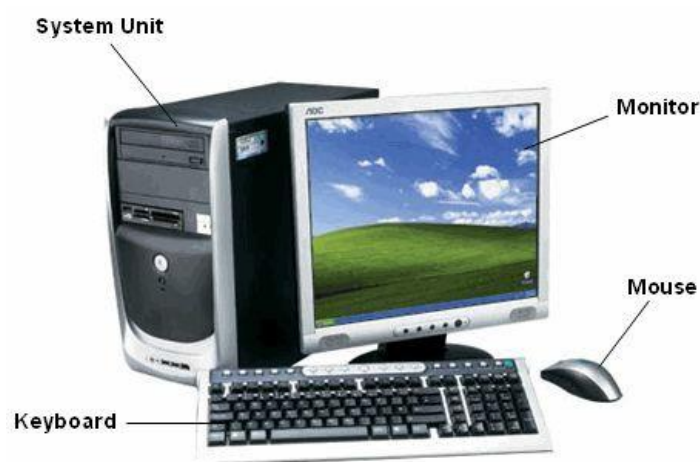
A computer is built with *hardware* and *software* which define processes internally (inside the machine) and externally (by the user).

Computers have a huge variety of uses. Originally employed to do calculations they're now used practically for everything:

→ At work to solve different tasks (e.g. the use of software applications like word

- processing, spreadsheets and many other programs);
- To create and develop embedded systems (e.g. washing machines, digital TVs, printers, cars, photo cameras etc.) which are also considered computers;
- To connect to the Internet (e.g. to connect virtually with people or companies, also at vast distances from one another, to look for all kinds of information (online) etc);
- To store data;
- Mobile phones are computers too;
- To play games;
- and many other.

Here are the basic parts of any Desktop Computer (PC):



Laptops are portable computers and usually perform the same functions as PCs.



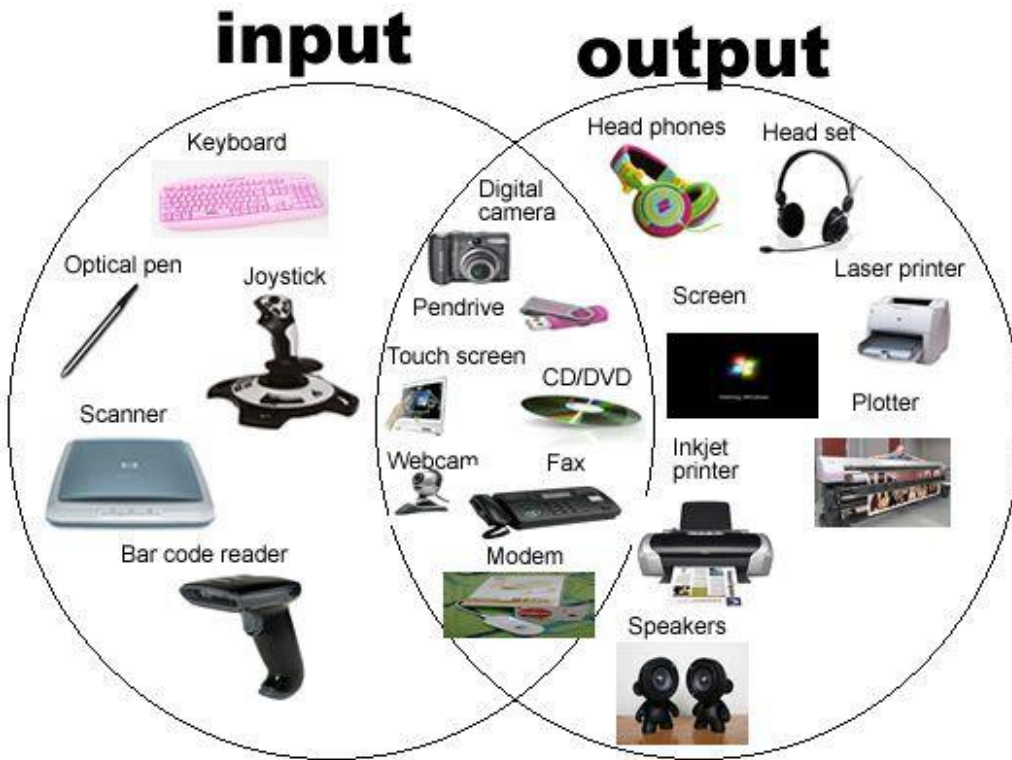
A **tablet** is a smaller device than a laptop and has fewer functions and capabilities than any PC or laptop. It has bigger functionality than a mobile phone though.



Mobile (smart) phones are computers created for the purpose of communication but today they can do much more than that.



Depending on the purpose of use, all of these devices are great tools at work or at home. Computers perform tasks also by using input and output devices, e.g. printing and scanning, video and audio streaming and recording, transporting information (CDs, DVDs, USBs etc), connecting to the internet, playing games and many more.

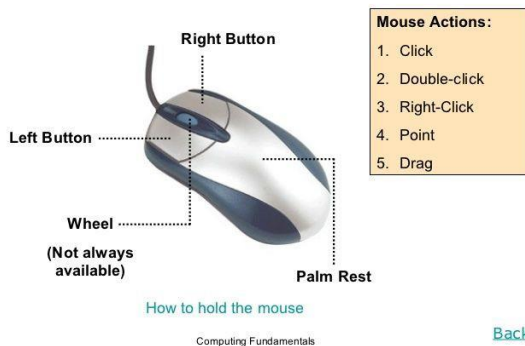


Practice Exercise: Turn PC/laptop ON and OFF

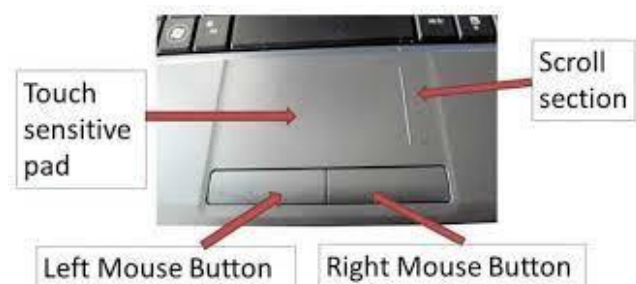
2. Exploring Physical Computer: Mouse/Touchpad and Keyboard

Using MOUSE/TOUCHPAD

Parts of a Mouse



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With a mouse or a touchpad you can move the cursor/pointer on the computer screen, select, drag and drop items, choosing more options (right clicking) etc;

A *single click* of the left mouse button selects an item; by holding the left button on a selected item allows you to drag and drop (*releasing the left button*) across the screen.

Double clicking (two quick clicks) will open a window, file or application.

Right clicking on an item by using the right button opens a *context menu* that has common shortcuts and options for the file or program.

Many mouses today have a wheel that helps to scroll up and down the computer screen. Touchpads also have scroll section!

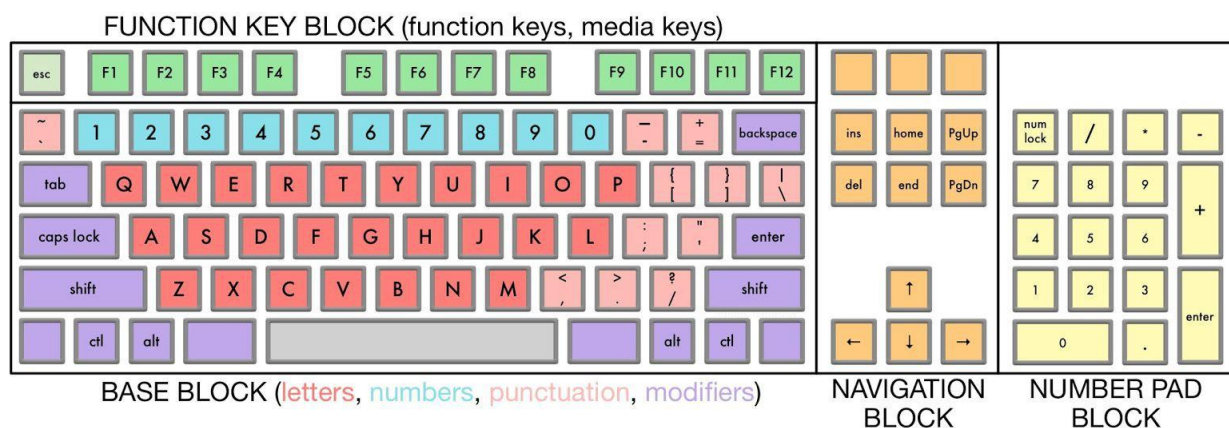


*for more mouse exercises visit:

http://seniornet.org/index.php?option=com_content&view=article&id=1048:mouse-exercises-seniornetorg&catid=49:helpcategory

Using the **KEYBOARD**:

Keyboard is used to type information into the computer and contains keys designed for different functions.



NOTE:

Depending on the country, keyboards can have different layouts: US, German, Russian etc. In China several keys may stand for more than one Mandarine symbols.

Some of the keys perform functions other than typing letters. For example, *Number keys* to type

numbers,

Navigation Keys to navigate through the page and *Punctuation Keys* to add punctuation marks in texts. Some keys are very often used in combination with other keys, e.g. *Modifying Keys* to modify or alter other keys and *Functional Keys* to perform different operations on the computer and also online in the browser.

COMMAND KEYS: used to insert and delete text objects or characters.

ENTER [↵] - causes a command line, window form or dialog box operate its function; DELETE [Del, ⌫] - deletes a letter, symbol or character to the right;

BACKSPACE [←] deletes a letter, symbol or character to the left;

INSERT [INS] - inserts a letter, symbol, image from the clipboard;

SPACE [the longest key on the keyboard] - used to enter space between letters or characters;

MODIFYING KEYS:

Always used in combination with other keys!

CONTROL [Ctrl] - performing a special operation;

SHIFT [⇧] - used to type capital letters and other alternate “upper”

characters; ALTER [Alt] - used to change (alternate) the function of other pressed key;

PUNCTUATION KEYS: used to type punctuation marks.

Can be used in combination with or without the SHIFT key!

. - dot

, - comma

: - colon

;- semicolon

/ - slash

-- hyphen

' ' - single quotation marks

“ ” - double quotation marks

? - question mark;

SPECIAL SYMBOLS:

Usually used in combination with SHIFT key and Number Keys!

! - exclamation mark;

@ - email sign “at”;

- hashtag;

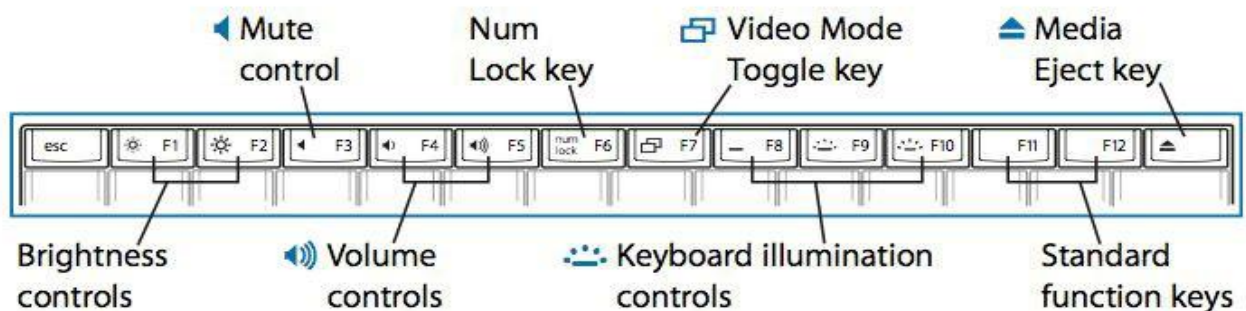
\$ - currency;

% - percentage;
 &- "and" symbol;
 * - star or mathematical multiplying symbol; () - brackets;
 _ - underscore;
 +, -, = - other mathematical symbols;

FUNCTIONAL KEYS:

F1 - application "Help"
 menu F2 - 'rename' file
 F3 - 'find' dialog box
 F4 - open find window; Alt + F4 will close the current program in Windows
 F5 - 'refresh/reload' screen
 F6 - usually redirects the cursor to the address bar or search bar on the current page in internet browsers
 F7 - 'spell check' document
 F10 - activates 'menubar' options
 F11 - 'full screen' (Internet browser)
 ESC - escape;
 PrntScr - copies screen content to clipboard;

Some keys can be assigned specific functions and is usually specified by the computer manufacture



Functional keys can be used in combination with Fn key. In this case other operations will be executed:

Fn key combinations

The following table shows the function of each combination of Fn with a function key.

Table 4. Fn key combinations

Key combination	Description
Fn + Esc:	Turn on/off the integrated camera.
Fn + F1:	Enter sleep mode.
Fn + F2:	Turn on/off the backlight of the LCD screen.
Fn + F3:	Open the interface for the display device switch to select this notebook or an external display.
Fn + F4:	Open the interface for display resolution settings.
Fn + F5:	Open the interface for integrated wireless devices settings (on/off).
Fn + F6:	Enable/Disable the touchpad.
Fn + F9:	Start/Pause playback of Windows Media Player.
Fn + F10:	Stop playback of Windows Media Player.
Fn + F11:	Skip to the previous track.
Fn + F12:	Skip to the next track.
Fn + Insert:	Enable/Disable the scroll lock.
Fn + PrtSc:	Activate the system request.
Fn + Home:	Activate the pause function.
Fn + End:	Activate the break function.
Fn + ↑/ ↓:	Increase/Decrease display brightness.
Fn + →/ ←:	Increase/Decrease sound volume.

* The operations executed with the help of Functional keys are defined by computer manufacturers and they may vary from one computer system and keyboard to another and sometimes for different devices and their software, e.g. photo and video cameras!

SHORTCUT KEYS: help to quickly perform operations using keys and not the options menu

Shortcut keys	Description
Alt + Tab	Switch between open applications
Alt + Shift + Tab	Switch backward between open applications
Alt + Spacebar + N	Minimize active window
Alt + PrintScrn	Create screen shot for current program
Ctrl + Alt + Delete	Reboot / Windows Task Manager
Ctrl + shift + Tab	To move different open tabs in any browser
Ctrl + Esc	Bring up start menu
Alt + Esc	Switch between applications on taskbar
F2	Rename selected icon
F3	Start find from desktop
F4	Open the drive selection when browsing
F5	Refresh contents
Alt + F4	Close current open program
Ctrl + F4	Close window in program
Alt + Enter	Open properties window of selected icon or program
Shift + F10	Simulate right-click on selected item
Shift + Delete	Delete programs / files permanently

Shortcut keys	Description
Alt + F	File menu options in current program
Alt + E	Edit options in current program
F1	Universal help (for all programs)
Ctrl + A	Select all text
Ctrl + F	Find
Ctrl + X	Cut selected item
Shift + Del	Cut selected item
Ctrl + C	Copy selected item
Ctrl + Insert	Copy selected item
Ctrl + V	Paste
Shift + Insert	Paste
Home	Go to beginning of current line
Ctrl + Home	Go to beginning of document
End	Go to end of current line
Ctrl + End	Go to end of document
Shift + Home	Highlight from current position to beginning of line
Shift + End	Highlight from current position to end of line
Ctrl + <--	Move one word to the left at a time
Ctrl + -->	Move one word to the right at a time



Practice Exercise: How to type with 10 fingers?

1. Watch this YouTube video explaining the basics of 10 fingers typing: Watch *How to Type* video by Howcast channel on the YouTube!
2. Go to www.typingtutor-online.com Follow the instructions and practice typing with your 10 fingers (Eng/De)

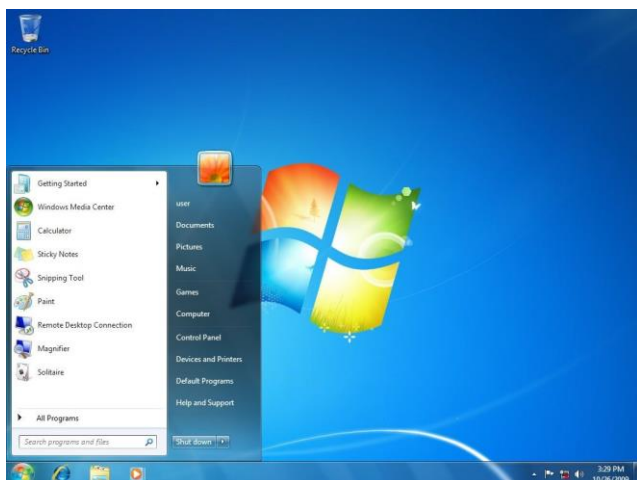
***Ask your tutor or friend to help you go online and find the website

3. Operating Systems and their Desktops: Windows (Win7, Win 8, Win 10), Linux (Command Based Desktop, e.g. Ubuntu, Mint, Fedora), and Mac OS (UNIX)

Every computer has an **operating system (OS)**. It is the most important software that runs on a computer. An OS allows you to communicate with the computer without knowing how to speak the computer's language (*the code*). With the help of **Software Applications** the OS manages computer processes, memory and storage. Operating systems are usually pre-loaded when you buy a computer and most popular today are Microsoft Windows, Mac OS X and Linux (free license OS). Operating systems provide a software platform on top of which other programs, called **application programs**, can run. These application programs allow users perform different tasks, e.g. typing, calculating, browsing, watching films etc. The application programs must be written to run on top of a particular operating system. *Your choice of operating system, therefore, determines to a great extent the applications you can run.*

Each operating system has specific layout of a **Desktop** – a computer working space from where you have access to all Applications:

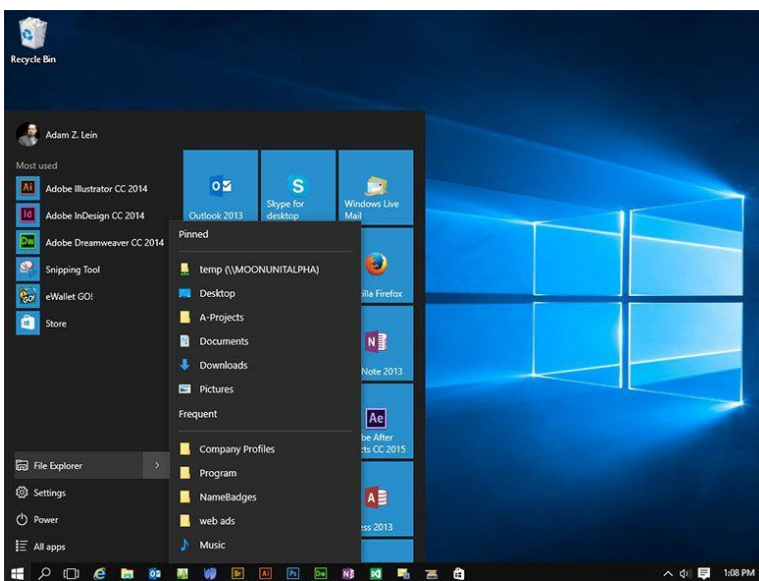
1. Windows 7 (a 2009 version of Microsoft Windows OS)



2. Windows 8 (a 2012 version of Microsoft Windows OS)



3. Windows 10 (a 2015 version of Microsoft Windows OS)



4. Ubuntu, Linux Mint, Fedora (Versions of Linux Desktops)



5. Apple Mac OS X (UNIX)



For conveniences we will use a Windows 7 PC desktop to describe basic applications and programs.

3.1. Windows 7 Desktop – Start Menu, Taskbar and their contents, Icons (Programs)



Windows 7 desktop showing the Taskbar

On your Desktop you can find the **Start Menu**, the **Taskbar** and **Icons** (also known as *shortcuts*) to

Applications (also known as *Programs*) that run on your OS.

Start Menu is where you access basically every function and program on the

computer. Use the Start menu to do these common activities:

- Start programs
- Open commonly used folders (panel on the right)
- Search for files, folders, and programs (Search Bar)
- Adjust computer settings (Control Panel)
- Get help with the Windows operating system
- Turn off the computer
- Logoff from Windows or switch to a different user account (if more than one person is using the same computer)

Clicking **All Programs** displays a complete list of programs installed on your

computer. The *right pane* of the Start menu also contains these folders:

- **COMPUTER.** Opens a window where you can access disk drives, cameras, printers, scanners, and other hardware connected to your computer.
- **CONTROL PANEL.** Opens Settings Panel, where you can customize the appearance and functionality of your computer, install or uninstall programs, set up network connections, and manage user accounts.
- **DEVICES AND PRINTERS.** Opens a window where you can view information about the printer, mouse, and other devices installed on your computer.
- **DEFAULT PROGRAMS.** Opens a window where you can choose which program you want Windows to use for different activities, e.g. web browsing.
- **HELP AND SUPPORT.** Opens Windows Help and Support, where you can browse and search Help topics about using Windows and your computer.

At the bottom of the right pane is the **Shut down** button. Click the Shut down button to turn off, restart or temporarily hibernate your computer.

It is very easy to personalize your desktop to fit your needs by using **Control Panel** Settings. You can move the icons and shortcuts and rearrange them the way you like it.

The icon called "**Recycle Bin**" is the container that holds your deleted files.

At the bottom of your desktop you will find a darker narrow band - **Taskbar** containing small icons of most important Applications/Programs and those which are currently open - they are "pinned to the taskbar"; and on the right – there's a "**Notification area**".



Messages from Windows, e.g. updates or a piece of hardware that you've just connected, appear in the right corner of the taskbar. Some of the items may be hidden but you can find those by clicking on a “up” arrow. Other items like volume control, connection to the internet and date can be found in the right corner.



Practice Exercise

Go into **Start Menu** and open a **WordPad** program, **Calculator**, **Windows Media Player**, **Paint**. Notice the changes on your Taskbar and Notification Area.

SOME PRACTICAL TIPS:

- If you are sharing your computer with someone else, you can create different user accounts. In this way you can separate your data from someone else's and use a password to limit access to your data, e.g. parent's and children's account etc.



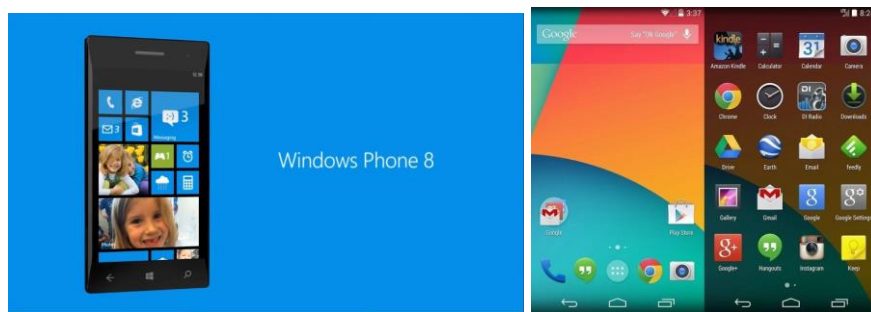
- If you are using another or a public computer, you will be required to log in (ask for instructions from a librarian or the member of staff);
- Use **Control Panel** to access and change all features and Applications of Windows OS. These settings also include access to Windows Updates and Personalization.

3.2. Operating systems for mobile devices

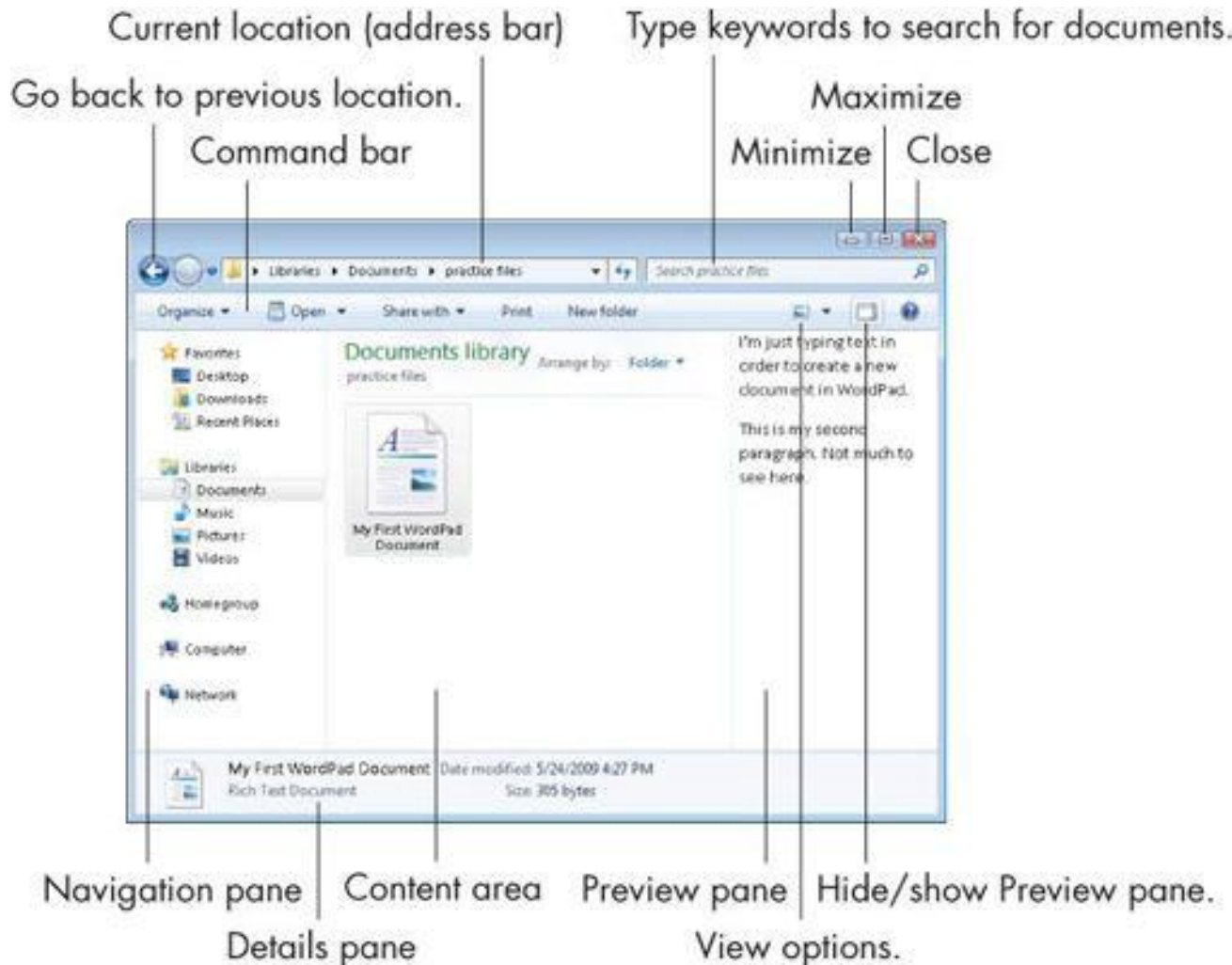
The operating systems we've been talking about so far were designed to run on **desktop computers (PCs)** and **laptops**. **Mobile devices** such as **phones, tablet computers,** and **MP3 players** are different, so they run operating systems that are designed specifically for mobile devices. Examples of mobile operating systems include **Apple iOS** and **Google Android**.

Operating systems for mobile devices generally aren't as fully featured as those made for desktop and laptop computers, and they aren't able to run all of the same software. However, you can still do a lot of things with them, like checking your emails, read, watch movies, browse the Web, manage your calendar, and play games.


Every manufacturer is striving to create the most user-friendly and at the same time the most functional OS, therefore each manufacturer's developments differ from that of another. e.g. Apple, Lenovo, Samsung, Google etc.



4. Exploring Windows 7: Win 7 Navigation: Windows Explorer and Windows Libraries: Managing Folders and Files



Microsoft Windows OS has become one of the most popular operating systems in the world thanks to its user friendly interface. When you open a file, folder or library, or run a program, you see it in a window!

Windows Explorer  is designed to help you navigate around Windows or work with your files, folders, and libraries more easily. Use Windows Explorer locked in your Taskbar to quick access your libraries.

After you open Windows Explorer, you'll see this window containing other folders [in the **Navigation Pane**]. Those folders called **Libraries** can contain different kinds of data, called **file**.

A **Library** is a file manager application that provides an overview and access to the files and folders (data) on your computer.

You can use libraries to access your files and folders, and arrange them in different ways, **usually by type**. By default these libraries are used for:

Documents - Use this library to organize and arrange **text-type files**, such as word-

processing documents, spreadsheets, presentations, and other (Formats txt, doc, docx, PDF, xls, xlsx, etc.)

Pictures - Use this library to organize and arrange your **digital pictures**, whether you get them from your camera, scanner, or in an e-mail from other people (Formats JPEG, PNG, GIF, TIFF, BMP etc).

Music - Use this library to organize and arrange your **digital music**, such as songs that you rip from an audio CD, USB or downloaded from the Internet (Formats: mp3, wav, wma, m4a etc)

this library to organize and arrange your **videos**, such as clips from your digital camcorder, or video files that you download from the Internet (Formats: avi, mp4, wmv etc.)

Allows you to quick access most frequently used locations (*paths*).

You can change the way you view the files within a folder. Click on the **View button** in the **Menu Bar**. A drop down menu shows different options: *Thumbnails, Tiles, Icons, List, Details*.

4.1. Digital Data: What is a file/folder?

All digital data is usually stored in a file. A **file** is a collection of digital data that can contain any type of information (text, images, videos etc.) in a respective format. A file can also contain a programming code used to perform operations of the OS installed on a computer (program files). Each file is composed by:

- The file name
- The file extension (example: .doc; .exe; .jpg) →defining the type (**format**)¹ of a file

File Example:

My first document.docx

(file name) + (file extension)

A **folder** is a container for files. The exact location of a file is called its **path**. It is important to understand the path of a folder in case you would like to access, edit, delete, copy or move any files.

A folder within another folder is called a sub-folder. **Subfolders** contain more files. To keep your desktops organized it is recommended to store your data according to their types, e.g, documents in My Documents library, images - in My Pictures Library etc. In this way you know which file is in which folder in case you need to access the file. It is

also possible to create and use more than one folder in one library. By doing this you can sort your files even more efficiently, e.g. by date, by location, by a topic etc.



Practice Exercise

1. Find a Windows Explorer on your Taskbar and open it. Explore various libraries and their contents by (double-)clicking on them. What files have you found? Which formats of the files have you discovered?
2. Change the view of your window by using **View Options**

4.2. Introducing different programs (Software Applications): opening and creating different types of files (Ordinary Files): text, pictures, video, music files etc.

Different programs are created to work with a corresponding types of files. For example, you can **open/create** a text document in a **word-processing program** (e.g. WordPad, *MS Word*) or a movie file in a **video-editing program**. All programs are created with certain purposes.

When you open *WordPad*, for example, it means you are working with a text program and it starts with a blank page. The purpose of a word-processing program is to work with all kinds of text documents. After you call a *WordPad* or a *MS Office* program (e.g. from the Start Menu of your computer), start typing and when you are done, save your work by clicking on the **Save** button when you close the program. In the dialog box that appears, type a *filename* that will help you find the file again in the future, and then click Save. If you don't save the file, the information will be lost. By default, most programs save files in common folders of your libraries, e.g. My Documents and My Pictures, which makes it easy to find the files again next time. If you want, you can also choose your own location (*directory*) or create a new folder for your special files.

When you no longer need a file, you can remove it from your computer to save space and to keep your computer from getting cluttered with unwanted files. To **delete** a file, open the folder or library that contains the file, and then select the file. Press Delete on your keyboard and then, in the Delete File dialog box, click Yes. Other option to delete files is by using a context menu:

right-click on the file you want to delete and choose Delete option from the context

menu. After that confirm you want to delete by clicking Yes.

Same principle applies to folders and subfolders when creating containers for different kinds of files.

Right-clicking and choosing the option “New” is a quick way to create files and folders.



Practical Exercise:

- Open My Documents Library on your computer. Create a subfolder named “Test Documents”; then by right-clicking your mouse create a new document of .doc type, name it „doc1” and save it.
- Open and edit “doc1” file (you can practice 10-Fingers typing technique). Save and close the file. Delete the doc1 file and then restore it from the Recycle Bin.