Information Technology (402)

PART A : Employability

1. **Communication Skills**
2. **Self Management Skills**
3. **Information and Communication Technology**
4. **Entrepreneurial Skills**
5. **Green Skills**

PART B: Specific Skills

1. **Web Application and Security**
2. **Digital documentation(Advanced)**
3. **Electronic Spreadsheet(Advanced)**
4. **Database Management System**

1. **Information and Communication Technology**
2. **Web Application and Security**
3. **Self Management Skills**
4. **Entrepreneurial Skills**
5. **Green Skills**
6. **Digital documentation(Advanced)**
7. **Electronic Spreadsheet(Advanced)**
8. **Database Management System**

Operating Systems and Windows

What is an Operating System?

- The **most important** program that runs on your computer. It **manages** all other programs on the machine.

- Every PC **has to have one** to run other applications or programs. It's the first thing **"loaded"**.

Operating System

•It performs basic tasks, such as:

   •**Recognizing input** from the keyboard or mouse,

   •**Sending output** to the monitor,

(c) 2000 Michael P. Stype

O.P.Jindal School,Raigarh
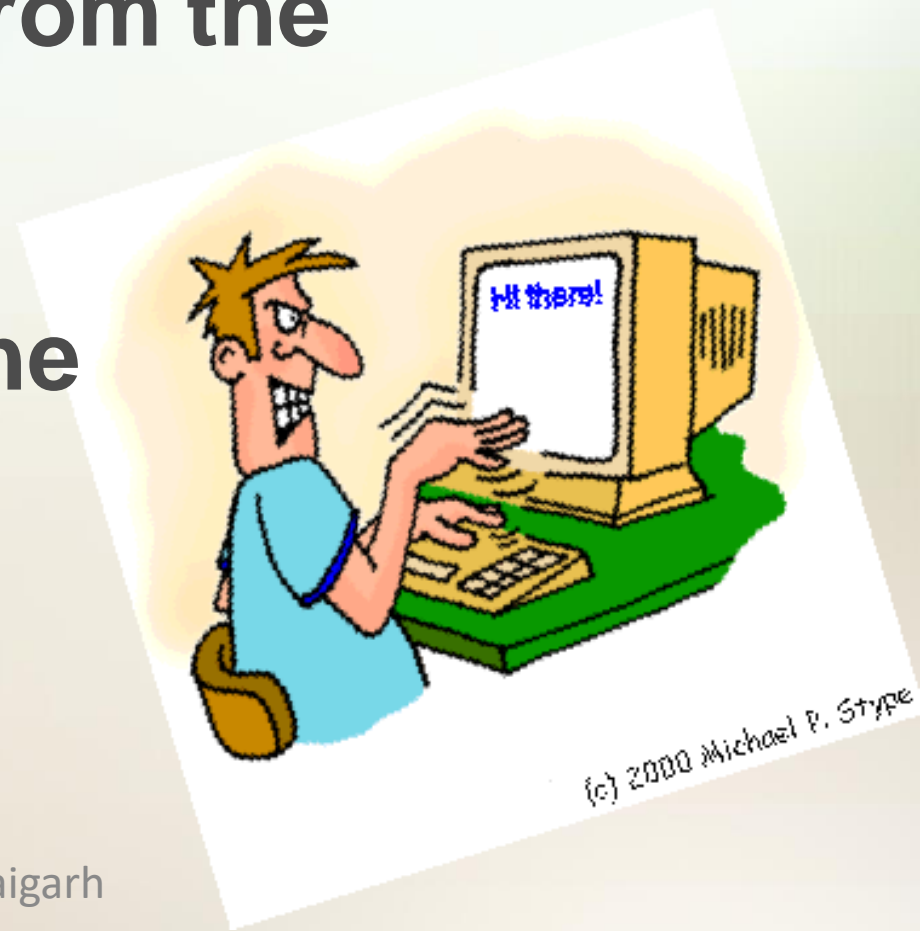
Operating System

- **Keeping track of files** and directories on the disk, and

- **Controlling peripheral devices** such as disk drives and printers.

Is There More Than One Type of OS?

- Generally, there are four types, based on the **type of computer they control** and the **sort of applications they support.**

1.Single-user, single task

This type manages the computer so that one user can effectively do one thing at a time.
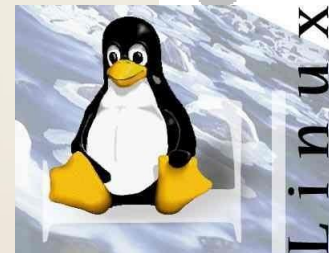
Anroid

MS DOS

Types of Operating Systems

2. Multi-user, multi-task

Allows **two or more users to run programs at the same time**. Some operating systems permit hundreds or even thousands of concurrent users.
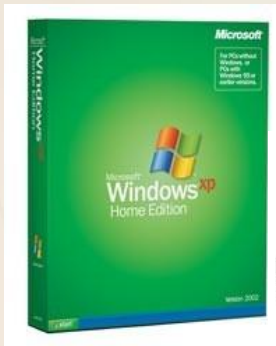
Types of Operating Systems

3. Single-user, Multi-tasking

This is the type of operating system most desktops and laptops use today.

Microsoft's Windows and *Apple's MacOS* are both examples of operating systems that will let a single user have several programs in operation at the same time.
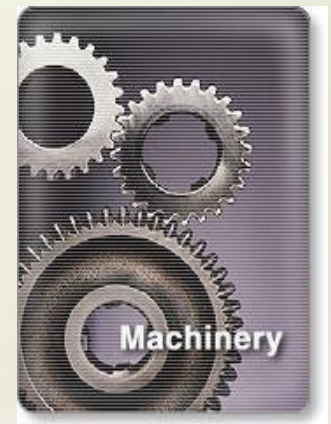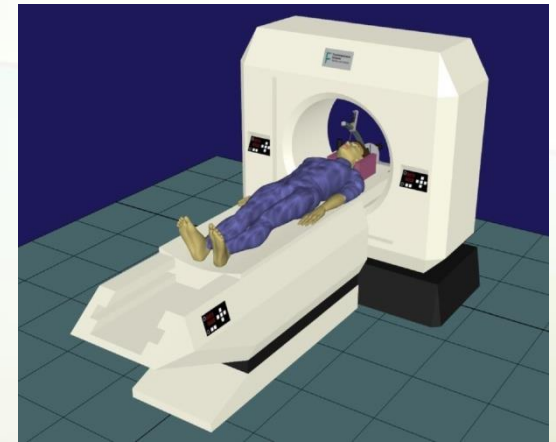
Types of Operating Systems

4. Real Time Operating Systems

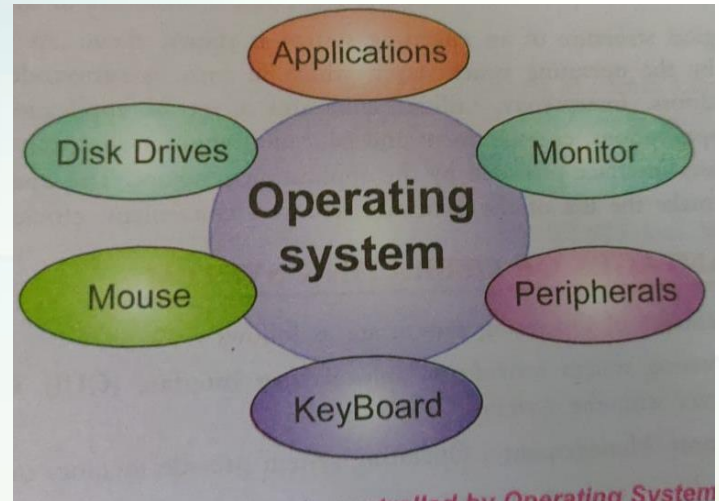**RTOS** are used to control machinery, scientific instruments, and industrial systems.

There is typically very little user-interface capability.

Resources are managed so that a *particular operation executes precisely the same every time*.

OS's Manage Applications

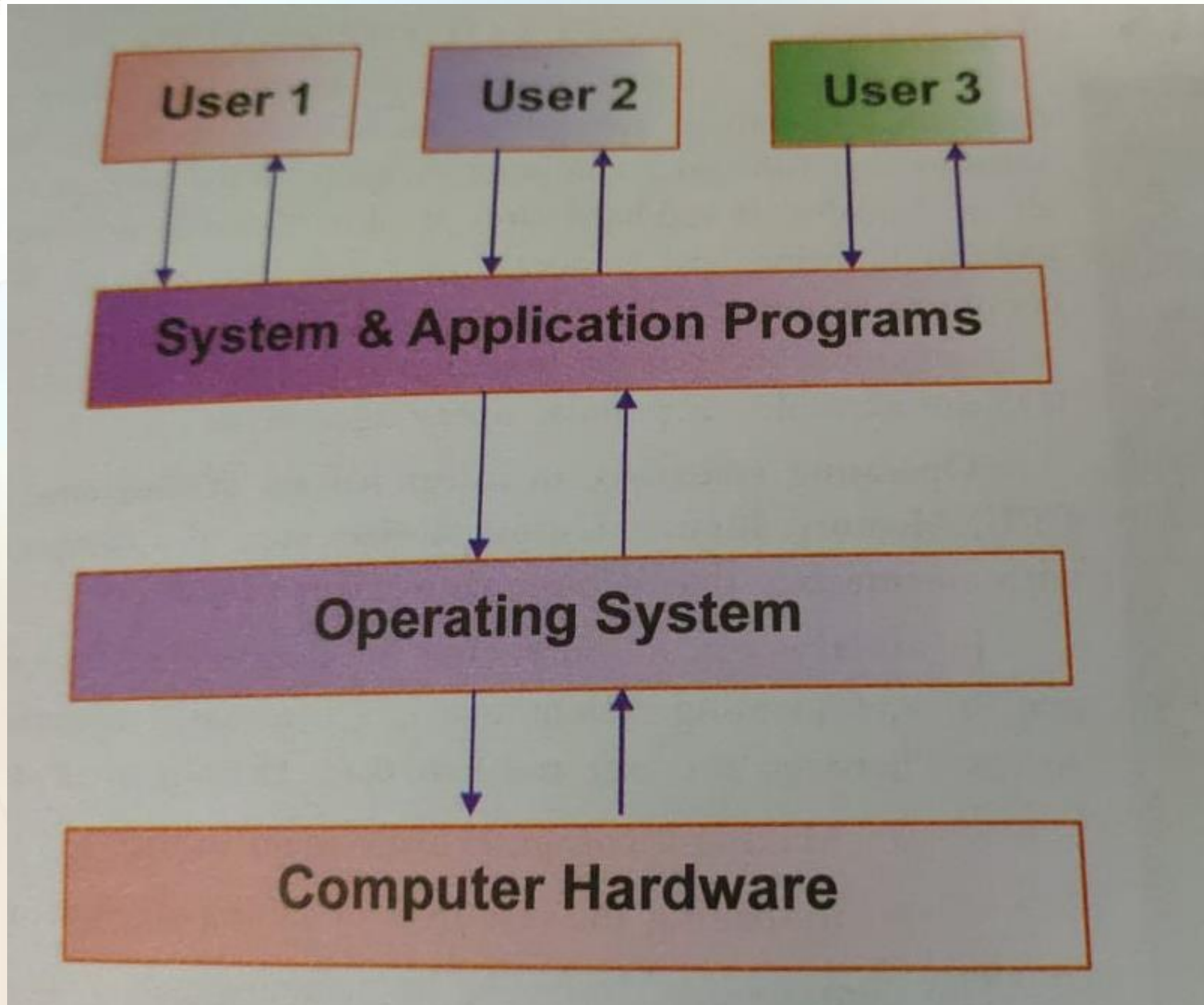•Operating systems provide a software platform on top of which other "application" programs can run.

•The application programs must be written to run on a particular operating system.

•So, your choice of operating system determines what application software you can run.
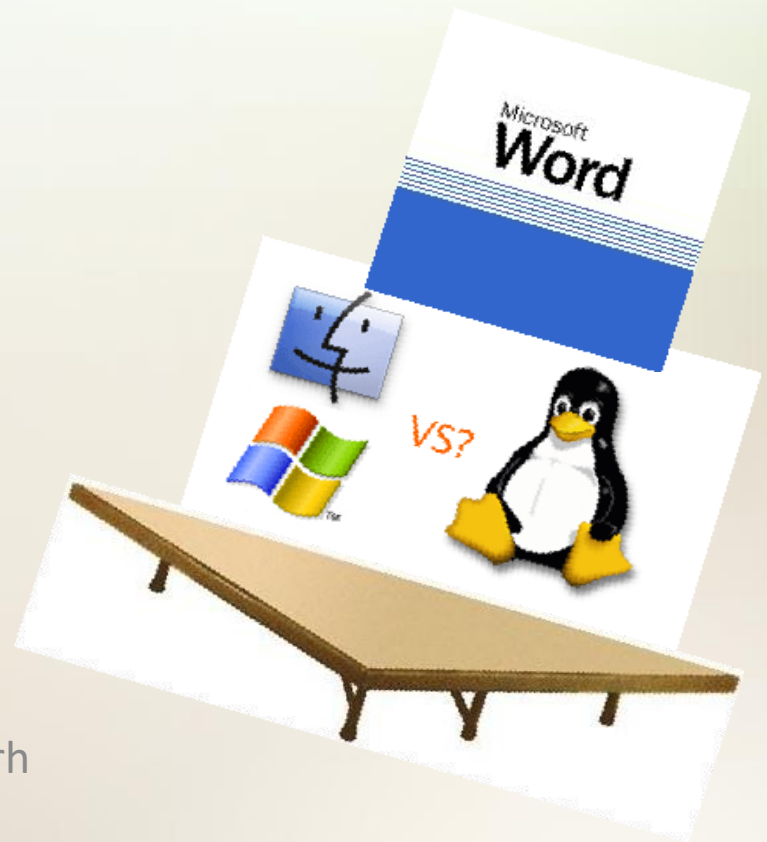
Logical Structure of OS

Function of Operating System

1. Making computer system convenient to use

2. Processor Management

3. Provide User Interface

4. Managing resources

Advantages of Operating System

1. Provide User Interface- GUI/CUI

2. Processor Management

3. Memory Management

4. Device Management

5. File Management

6. Security

O.P.Jindal School,Raigarh

Okay – So Now What?

- **When you turn on the power to a PC, the first program that runs is a set of instructions kept in the computer's read-only memory (ROM).**
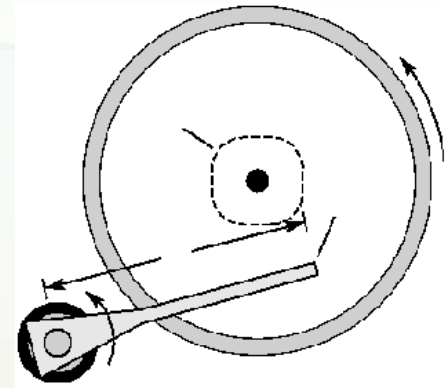
OS - Wake up Call

- It checks to make sure everything is **functioning properly**.

- It **checks** the CPU, memory, and basic input-output systems (BIOS) **for errors**.

OS – Wake up Call

- Once successful, the software will begin to **activate** the computer's **disk drives**.

- It then **finds** the first piece of the operating system: the **bootstrap loader**.

OS - Booting the PC

•The **bootstrap loader** is a small program that has a single function: It **loads the operating system** into memory and allows it to begin operation.
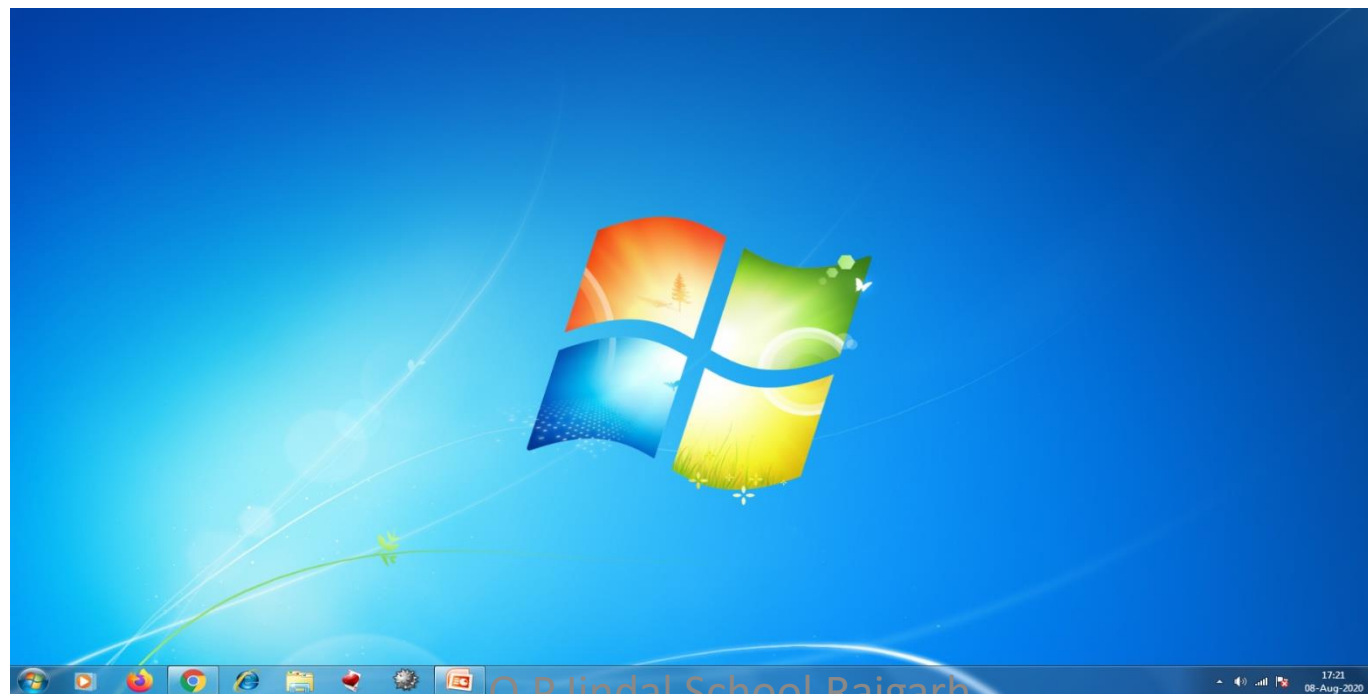
OS - Booting the PC

• The bootstrap loader **sets up** the small *driver* **programs** that interface with and control the various hardware.

• It **sets up** the divisions of

- memory
- user information, and
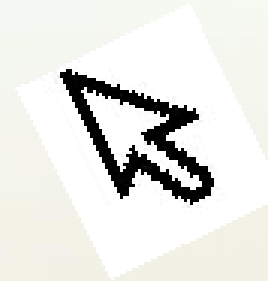- applications.

Windows Desktop

...Or like this.

Enter Commands

- **Commands can be entered several ways:**

  - **Through a keyboard.**

  - **Pointing or clicking on an object with a mouse.**
  (Graphical User Interface or GUI)

  - **Sending a command from another program.**

GUI – Standards

- **GUI** interfaces have **standards** that are usually the same or similar in all systems and applications.

- Standards apply to:
  - Pointers and pointing devices
  - Icons, desktops, windows and menus

Windows - GUI Pointers

- **GUI** uses *pictures, symbols, or icons* rather than words to **represent** some object or function. For example:

- A **pointer** or **mouse pointer** is a small arrow or other symbol that moves on the screen as you move a mouse.
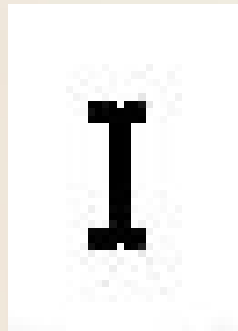
- An I-Beam pointer is used by many desktop publishing systems and word processors to **mark** blocks of text and **move** the insertion point.

GUI – Cursors / Pointers

- The term "**cursor**" typically is used to show where your typing will appear. Otherwise, the term "**pointer**" is the better choice.

Pointer Shapes

Normal Select		Vertical Resize	
Help Select		Horizontal Resize	
Working In Background		Diagonal Resize 1	
Busy		Diagonal Resize 2	
Precision Select		Move	
Text Select		Alternate Select	
Handwriting		Drag- make copy	
Unavailable		Drag - make shortcut	

Windows - GUI Icons

- **Icon** - **A small picture that represents a command, object, file, or window.**
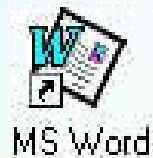
•**Point and click** **with a mouse** **to execute** **a command or convert the icon into a window.**

•**Icons are** **moveable** **around the display screen, just like moving things around on your desk.**

Object Icons & Shortcut Icons

•**One type of icon is an object icon. It allows you to open applications and documents on your PC.**

•You can create and use a shortcut icon to open any application quickly. You don't have to use the Start Menu to access a program or document.

Recycle Bin

My Computer

My Network Places

Shortcut to TechTraining

Shortcut (2) to Exercise

Shortcut (3) to Exercise

Windows - GUI Menus

- **Menu** - is an on-screen list of **options** for using a program. It can also be a list of categories with many other menu options under it. Menus can "pop up" or "pull down."
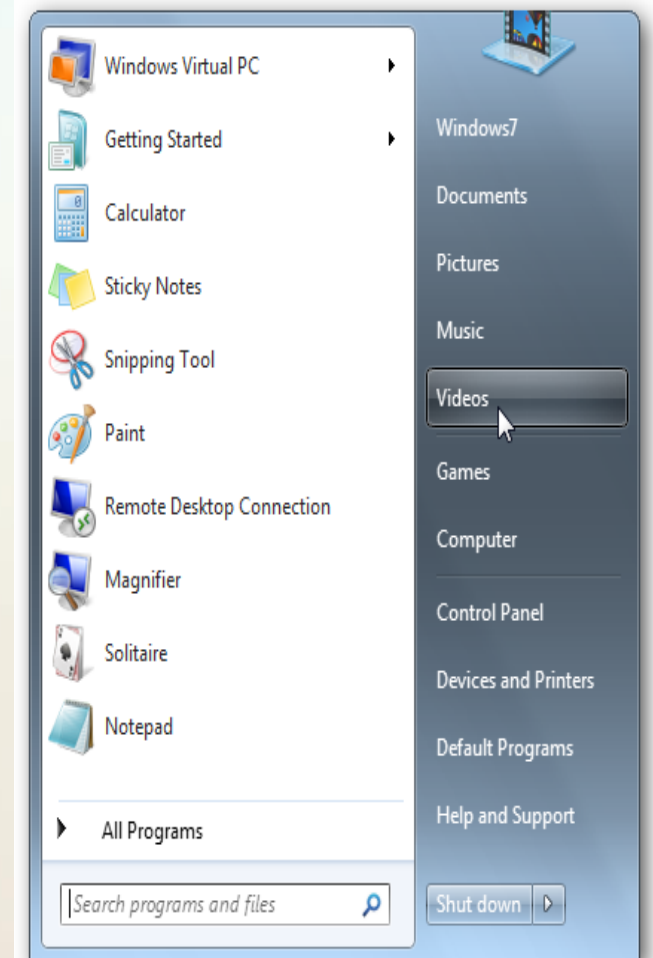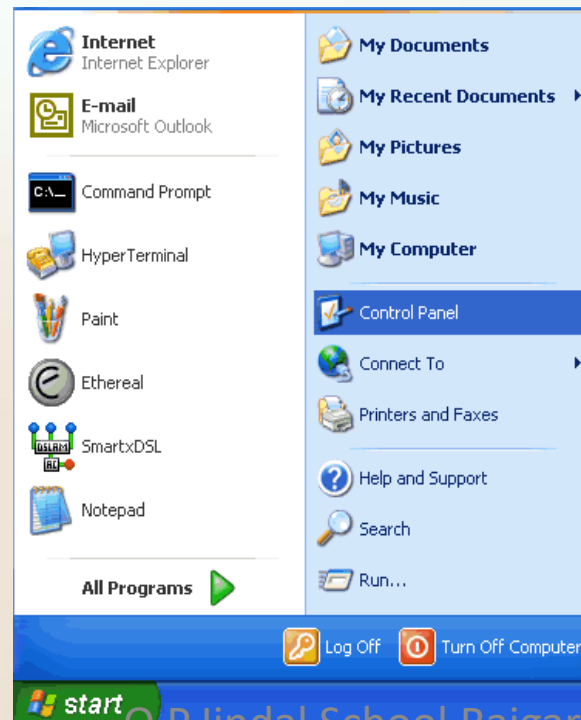
Parts of the Desktop

Windows - Taskbar

- **Taskbar** – shows you the windows or programs that are currently open on the desktop. You can switch between windows by clicking on the applicable button.

Each taskbar button represents an open program (a "task in progress")

start | 2 Windo... | Solitaire | Welcome ... | Calculator
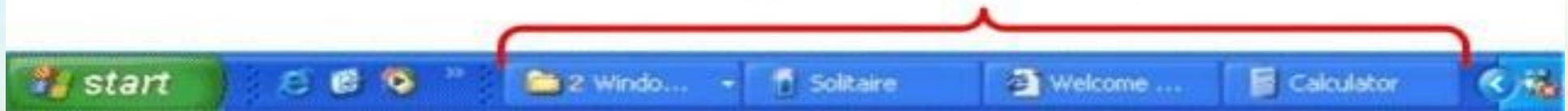
- **System Tray** – shows you running programs that were **started automatically** by the operating system, like anti-virus programs, the clock and volume controls. These programs are running in the background.

11:51 AM

Windows - Quick Launch Toolbar

•**Quick Launch Toolbar** – contains one-click *buttons*, or *shortcuts,* which open programs. You can customize this toolbar however you like.

Quicklaunch Toolbar

Start Button

•The **start button** allows you to easily access your computer programs or configure Windows. By default the start button is located at the bottom left side of the screen.

Parts of a Window

Title bar icon

Title text

Title bar

Windows buttons

Document

Menu bar

File   Edit   View

Scroll box

Window frame

Vertical scroll bar

Scroll arrow

O.P.Jindal School,Raigarh

Status bar

Size grip
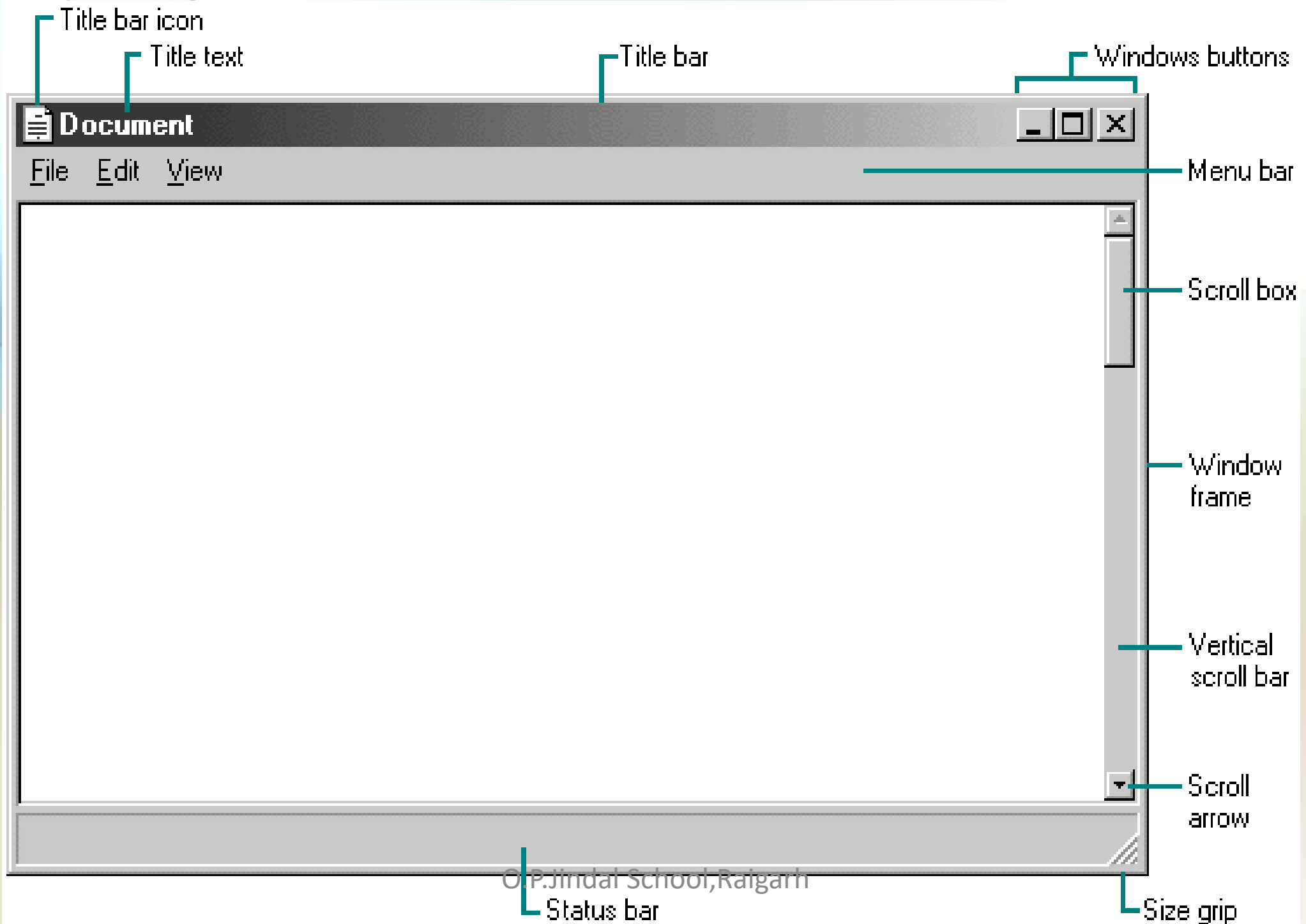
Dialog Boxes

1. **List box**
2. **Spin control box**
3. **Slide**
4. **Drop-down list**
5. **Radio button**
6. **Checkbox**
7. **Text box**

O.P.Jindal School,Raigarh

Folder

Folder is a named location on the disk of computer in which you can files and sub folders.

Windows – Recycle Bin

- Recycle Bin – Deleted files and folders go here first, where they wait to be permanently deleted by you, or by rules that you set up. This is a *temporary storage area* on your hard drive.

O.P.Jindal School,Raigarh

My Documents

- **My Documents** – a place to store the **documents** and **files** you create.

My Computer or This PC

- **My Computer** Shows all the content of computer.

O.P.Jindal School,Raigarh
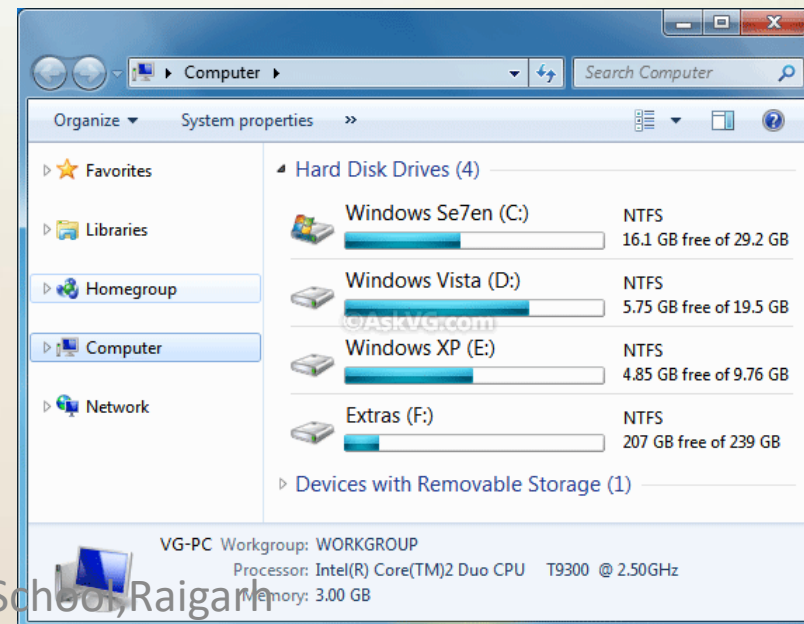
Logoff

•If your have **multiple users** on a PC with separate "**profiles**" or **user logons**, use the *logoff process* to close out of your profile or to switch users.

Shutdown Windows

- **There is a "graceful" way of shutting down your PC that will save your program settings and files.**

  - *This shutdown process basically puts the operating system to bed.*

Shutdown Computer

Standby   Shutdown   Restart

Cancel

Shut Down Windows

Are you sure you want to:

- ⦿ Shut down the computer?
- ○ Restart the computer?
- ○ Restart the computer in MS-DOS mode?
- ○ Close all programs and log on as a different user?

Yes   No   Help

O.P.Jindal School,Raigarh

File System

FAT   **(File Allocation Table)**

NTFS   **(New Technology File System)**

ReFS   **(Resilient File System)**

Feature	FAT	FAT32	exFAT	NTFS	ReFS
Maximum volume size	4 GB	32 GB	128 PB	256 TB	4.7 ZB (zettabytes)
Maximum file size	4 GB	4 GB	16 EB (exabytes)	18 EB (exabytes)	18 EB (exabytes)
Maximum filename length	8.3 characters	255 characters	255 characters	255 characters	255 characters
Maximum cluster size	64 KB	32 KB	32 MB	2048 KB	64 KB
File compression	No	No	No	Yes	No
File encryption	No	No	No	Yes	No
Permissions	No	No	No	Yes	Yes

WINDOWS 98,XP

WINDOWS NT,XP,7

WINDOWS 8,10

SESSION-2
MAINTENANCE OF COMPUTER

1. Cleaning computer component

2. Cleaning computer temp files

3. Backup regular basis
*Full backups *Differential backups*Online/Cloud Backup*Mirror Backup

4. Update antivirus and scan regularly