



**Presents...**

# **A** *teacher's guide to basics of computers...*

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## **A** teacher's guide to basics of computers...

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*Hi Everybody,*

*I am Pandu, Instructor in CS Dept., JSSPPH, Mysore. For details about me, please spend some time to visit @ [www.geocities.com/pandu2020](http://www.geocities.com/pandu2020).*

*Well...about this guide...*

*This guide has been divided into 5 parts. They are,*

- 1. Introduction to Computers,*
- 2. Outer view of System box,*
- 3. Into Concepts,*
- 4. Program, Instruction, data related concepts,*
- 5. Operating System basics.*

*Enjoy learning...*

## Part I

# *Introduction to Computers...*

# What is a Computer?

- An electronic device,
- which can,
  - perform simple to complex calculations,
  - store and gives out Information whenever needed,
  - be used for Information Exchange.



# *Main parts of a computer*

- *System box or CPU box,*
- *Monitor,*
- *Keyboard,*
- *Mouse.*

# *Optional parts of a computer*

- *Speakers,*
- *Headphones and Microphones,*
- *Printers,*
- *Scanners,*
- *Modems.*

# *System box or CPU box*

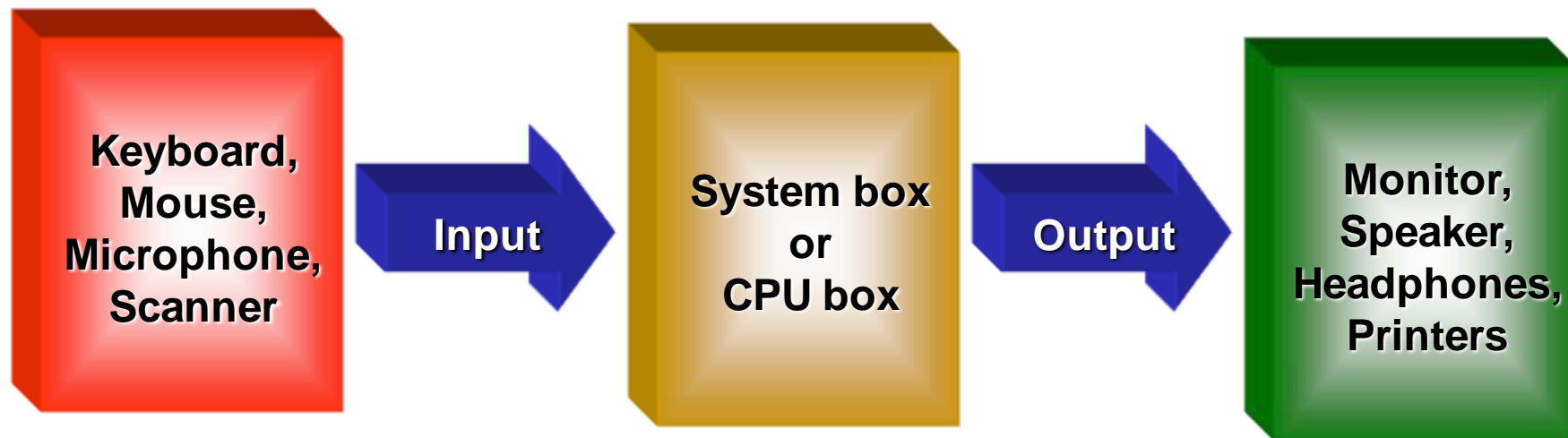


# *System box or CPU box*

- *constitutes actual computer,*
- *is also called as the heart of the computer,*
- *has got various electronic circuits, various electronic boards and also the externally visible components,*
  - *used for processing inputs, and to give output, which is an result of processing inputs.*



# *Input, Process, Output*



# **What does input, processing and output mean?**

- Whatever we feed to the computer is said to be input.
- Computer, on the other hand, takes the input and perform various computations, manipulations, through the use of software or programs is called as processing.
- The result produced by processing is said to be output.

# *Monitor*



# ***Monitor***

- ***It is just like your television screen,***
- ***Displays what ever we do in computer,***
- ***Displays***
  - ***Text,***
  - ***Pictures,***
  - ***Movies and so on.***
- ***Two major types***
  - ***CRT (Cathode Ray Tube)***
  - ***TFT –LCD (Thin Film Transistor-Liquid Crystal Display)***

# *Keyboard*

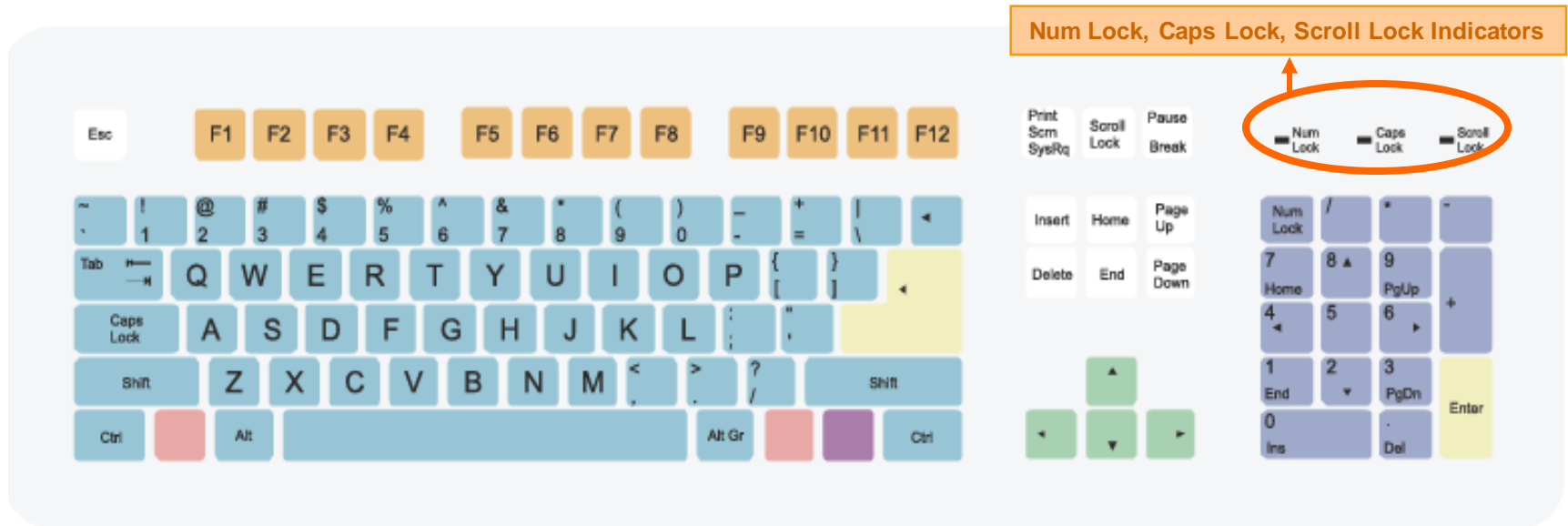


# Keyboard

- *is an input device.*
- *is used*
  - *to type text,*
  - *to give instructions to the computer for performing tasks.*
- *has got small switches which is called as keys.*
- *one need to press these keys to tell the computer, what to do, whether to display text or to perform some commands.*

# Keys in Keyboard

*What they are all called?*





# *Mouse*





# *Mouse*

- *is also an input device,*
- *resembles the real mouse which is seen in your home or in some other places.*
- *is useful for Graphical User Environment,*
- *is used for drag drop and selection operations.*

# *Speakers*



# *Speakers*

- *It is an output device,*
- *It is used to,*
  - *listen sound,*
  - *listen music.*

# *Headphones and Microphones*



# ***Headphones and Microphones***

- *Headphone is an output device, which can be used in place of speakers.*
- *It is used to listen to the sound and music.*
- *Two kinds of headphones are available today,*
  - *Headphones, without Microphone,*
  - *Headphones with Microphone (Shown in the previous screen)*
- *Microphone is an input device, which,*
  - *Allows the computer to take external sound or voice as an input.*

## Part II

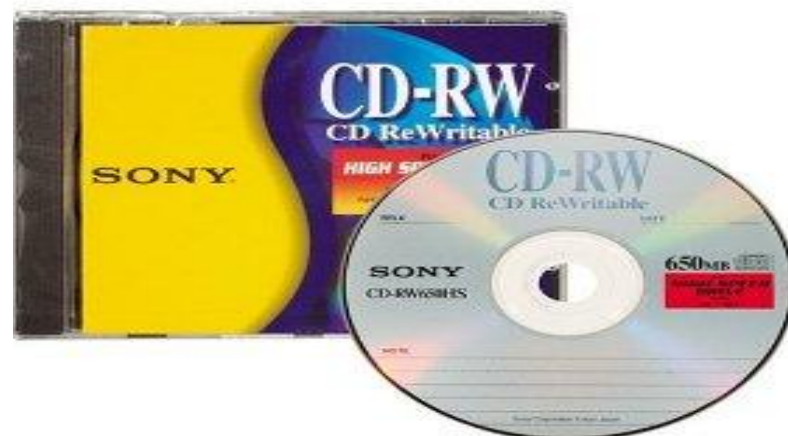
# *Outer view of system box...*

# *Outer view of system box or CPU box*





# *CD/DVD Drives, Discs*





# *Floppy drive, disc*



# *Outer view of system box or CPU box*

- *Shows how the system box's front panel is organized.*
- *Front panel of CPU Box has got slots for CD/DVD Drives,*
  - *CD/DVD stands for Compact Disc/Digital Versatile Disc,*
  - *One need a DVD to store 2 to 4 movies, where as  $\frac{1}{4}$  or  $\frac{1}{2}$  of a movie can be stored in CD.*
- *Some system boxes have got floppy disc drives where, one can insert a floppy, which can store very little amount of data.*
- *Power ON/OFF/RESET switches are usually provided at the front side of CPU box, some times on the side of the CPU box.*

# Printers

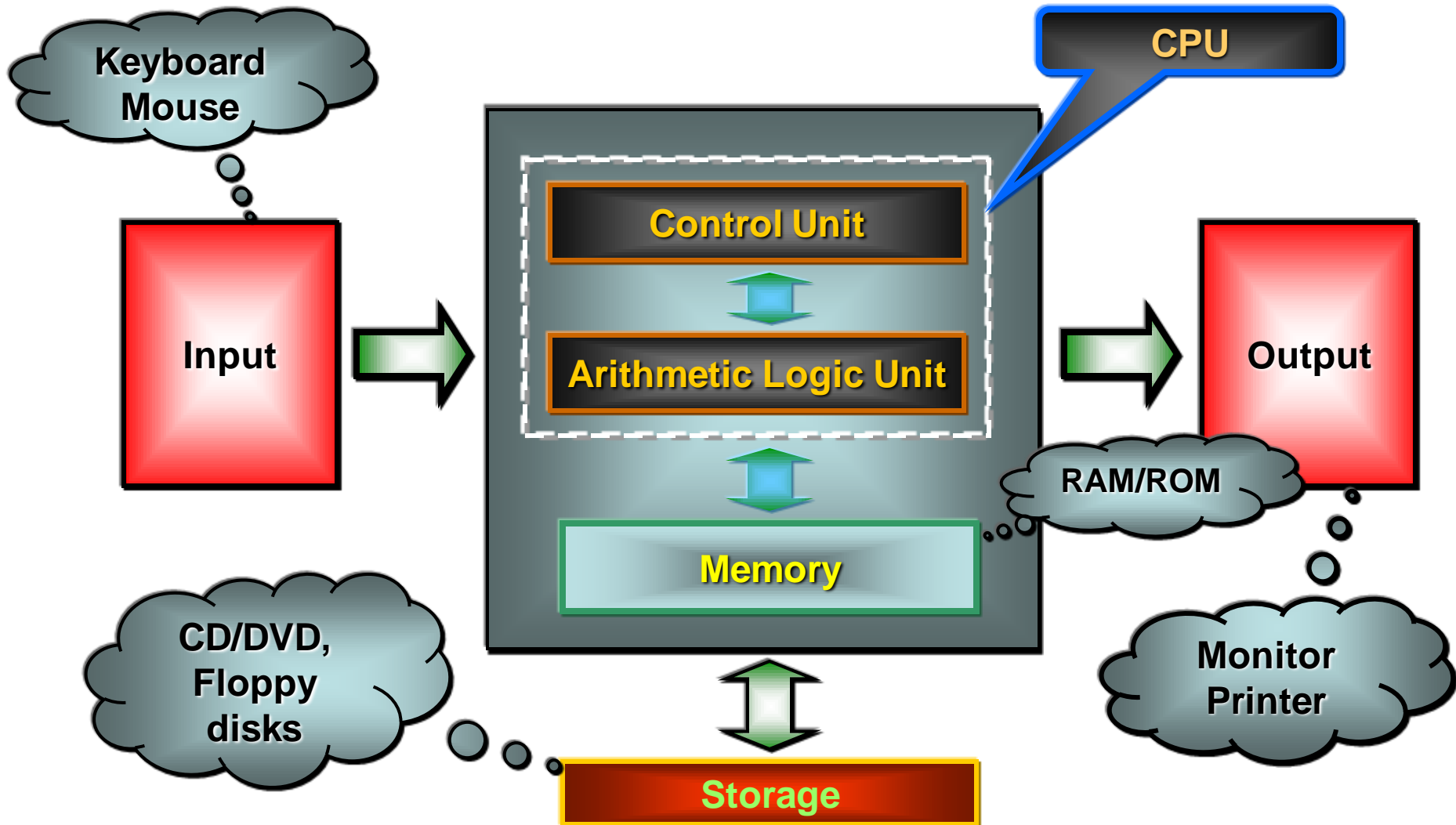


# *Printers*

- *An output device*
- *Used to print text, pictures on a paper,*
- *3 most commonly used types,*
  - *Dot Matrix*
    - *Prints by impact*
  - *Inkjet*
    - *operate by propelling variably-sized droplets of ink*
  - *Laser*
    - *Printing is done by the direct scanning of a laser beam*

# Part III *into concepts...*

# *Block diagram of a computer*



# ***Block diagram of a computer***

- ***Input***
  - *represents input devices which are used for giving input to the computer.*
  - *the computer processes the input according to the instructions given.*
  - *Keyboard, Mouse, Microphone are the most commonly used input devices.*
- ***Output***
  - *represents the output devices which are used for giving output.*
  - *The output is an result from the process.*
  - *Monitor, Speakers are some of the output devices.*

# ***Block diagram of a computer***

- ***CPU stands for Central Processing Unit***
- ***It acts like our brain,***
  - ***does calculations within fractions of a second, even faster than our brain,***
    - ***output results are perfect, even though you may say that human brain is faster than a computer.***
  - ***directs other devices, what to do.***



# ***Block diagram of a computer***

- ***Control Unit***
  - *responsible for controlling and coordinating all activities of a computer.*
  - *is like our nervous system.*
- ***Arithmetic Logic Unit***
  - *performs calculations such as addition, subtraction, multiplication and division, and also complex calculations.*
  - *performs logical operations such as AND, OR NOT, NAND, XOR.*

# *Block diagram of a computer*

- **Memory**
  - *temporarily stores programs and data for execution.*
    - *execution of computer program is the process by which a computer carries out the instructions of a computer program.*
    - *in most of the cases, the term “run” is used to represent program execution.*
  - *generally, the contents in the memory gets erased or wiped off when the computer gets powered off.*
- **Storage**
  - *stores the data and programs permanently in devices such as hard disk, floppy disks, CD/DVD's.*
  - *data stored in storage medium stored permanently, meaning that the data will not get wiped off unless one deletes it.*

## Part IV

***Program, Instruction, Data  
related concepts...***

# **What are programs and instructions?**

I think, many of you, have heard about computer games. They are called as Programs. Therefore, a program is a set of instructions given to a computer for telling the computer, what to do.

Therefore,

A instruction, on the other hand, when executed, produces some output or performs some task.

## *Data, information, bit, byte and so on...*

- *Whatever we give input to a computer and also whatever output the given by a computer is regarded as data.*
  - *Technically speaking, data is a smallest unit of information.*
- *Information is a collection of related data.*

## ***Data, information, bit, byte and so on...***

- ***Inside the computer, data is stored as a series of bits.***
- ***Because, the computer can only understand the logic of ON and OFF, the computer uses the concept of Presence of power or energy.***
- ***This means the presence of energy applied on the smallest area in the magnetic disc (Hard disc, CD/DVD, floppy disc) or RAM or ROM will indicate bit 1, and the absence will indicate bit 0.***

# *Data, information, bit, byte and so on...*

- *A group of 8 bits are called a byte*
- *Similarly we have,*
  - *(popular ones)*
    - *1 Kilo byte (KB) = 1024 bytes*
    - *Mega byte (MB) = 1024 KB*
    - *Giga byte (GB) = 1024 MB*
  - *(yet to become become popular)*
    - *Tera byte (TB) = 1024 GB*
    - *Peta byte (PB) = 1024 TB*
    - *Exa byte (EB) = 1024 PB*
    - *Zetta byte (ZB) = 1024 EB*
    - *Yotta byte (YB) = 1024 ZB*
    - *Beyond Yotta byte?... You can ask yourself!!!...*

# Part IV

## *Operating System basics...*



## *Operating System basics*

- *Operating System is a collection of programs that were designed and developed for managing system resources (such as Keyboard, CPU, Printer, Monitor etc.),*
- *abbreviated as OS,*
- *acts like a resource manager,*
- *has got equal importance, similar to CPU,*
- *acts as a Bridge between hardware and software,*
  - *(Even though the OS itself falls under software category)*
- *includes both system and application programs.*

## *Operating System basics*

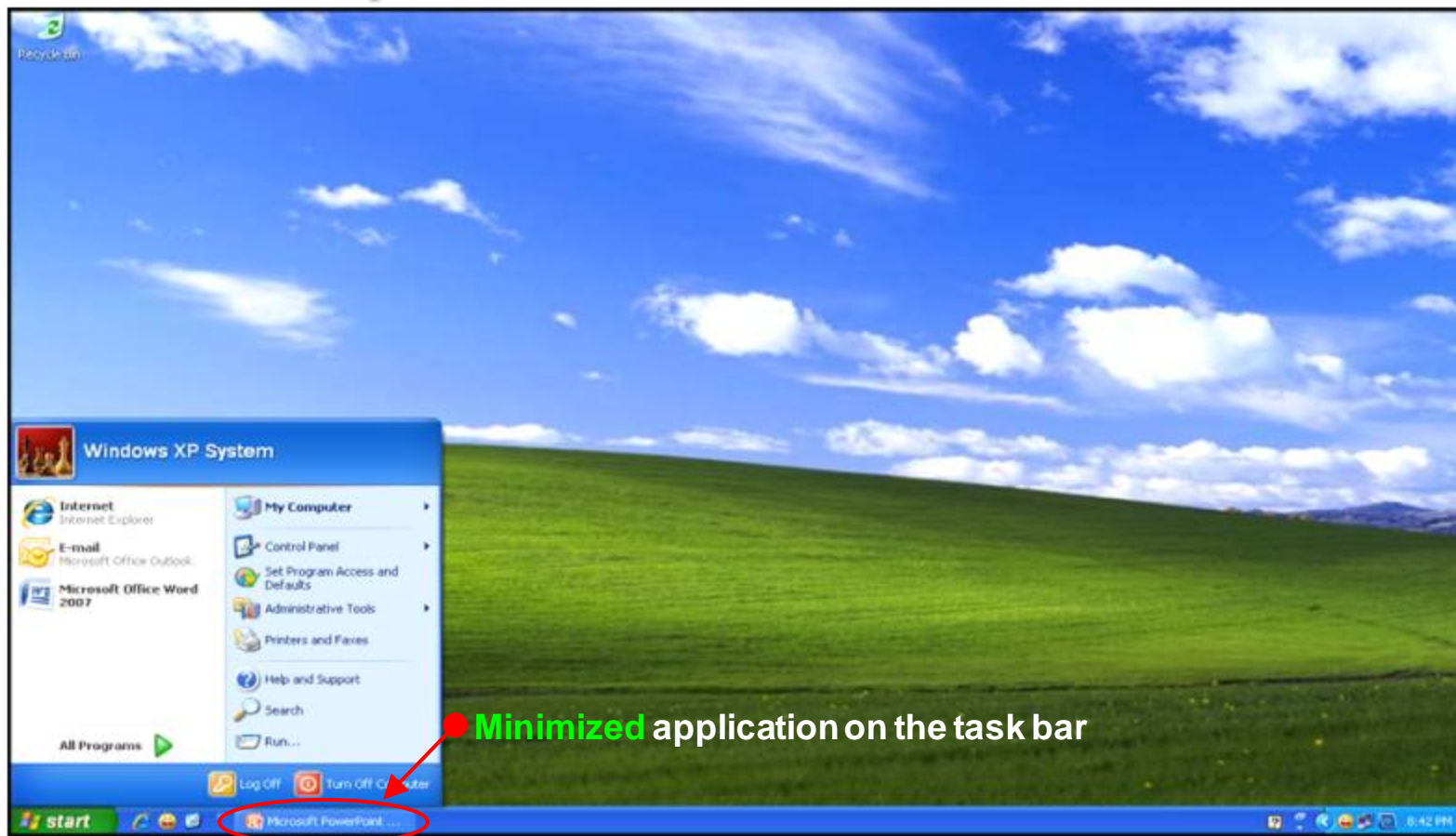
- *System program*
  - *Used to manage computer resources directly*
  - *Directly interact with the hardware.*
  - *Disk Defragmenter in Windows XP is one example.*
- *Application program*
  - *are designed for a particular use.*
  - *Does not manage computer resources directly.*
  - *Normally do not directly interacts with the hardware*
  - *Calculator, Word pad in Windows XP, falls under this category*

# *Operating System basics*

- **Windows *XP***
  - *is an operating system,*
  - *developed and prepared by a US based reputed company, Microsoft which was earlier founded by **Bill Gates** with **Paul Allen**,*
  - *released during 2001,*
  - *incorporates GUI (**G**raphical **U**ser **I**nterface) which is attractive to look,*
  - *easy to learn and use,*
  - *used for many variety of applications across the world.*

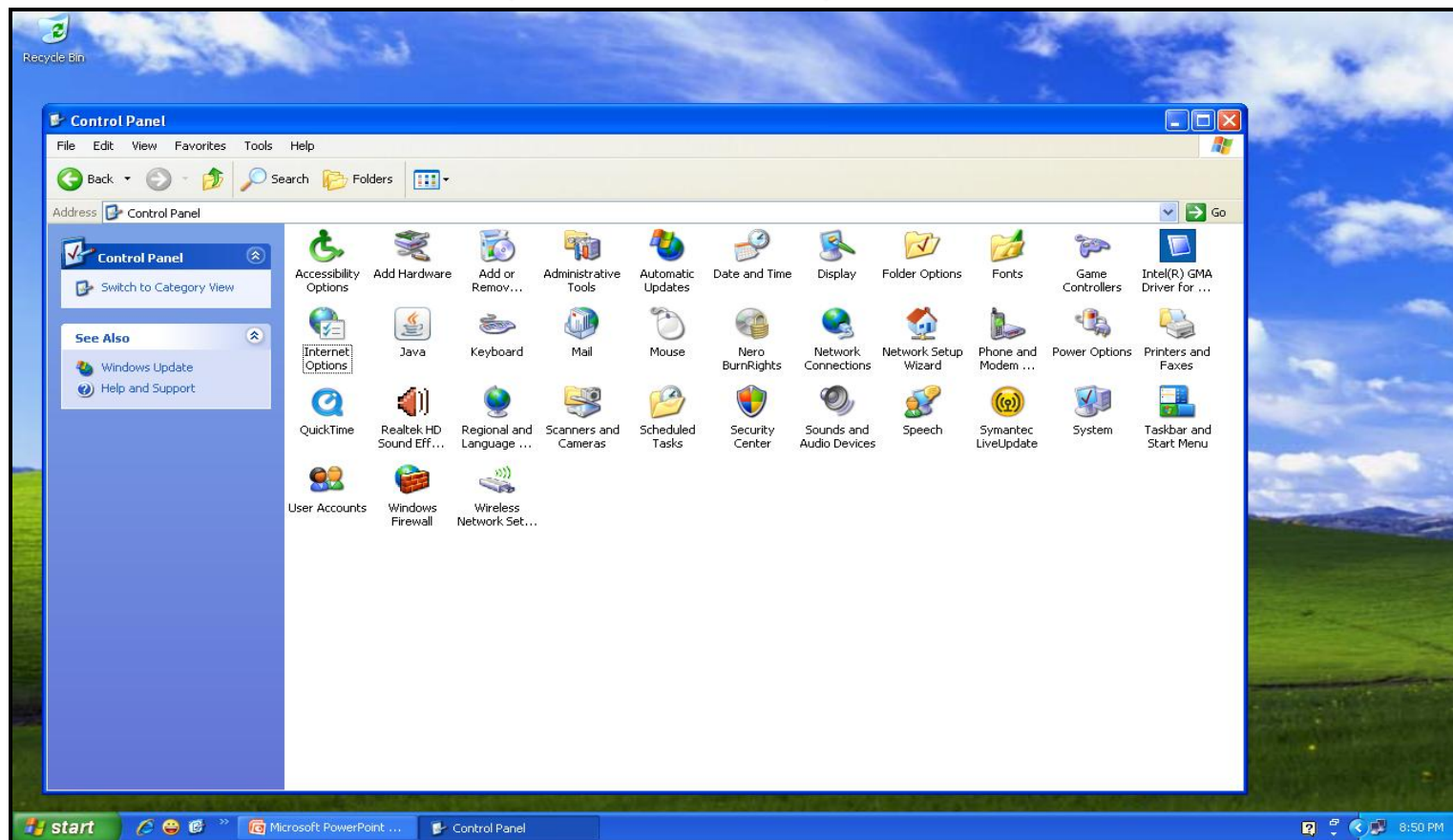
# Operating System basics

Windows **XP** Desktop with start menu



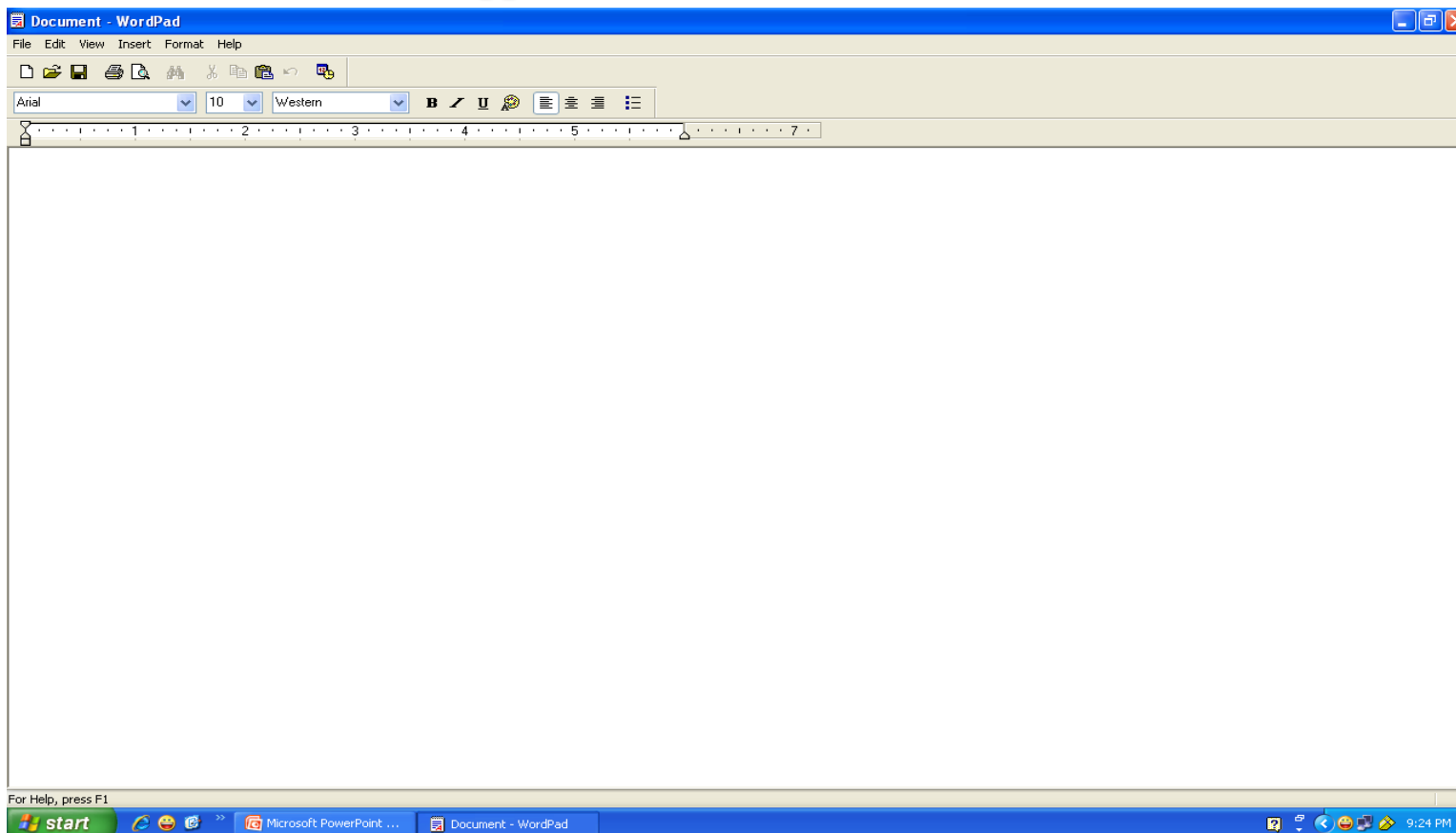
# Operating System basics

## Windows **XP** Control Panel (Normal Window)



# Operating System basics

## Windows **XP** WordPad Application (Maximized Window)

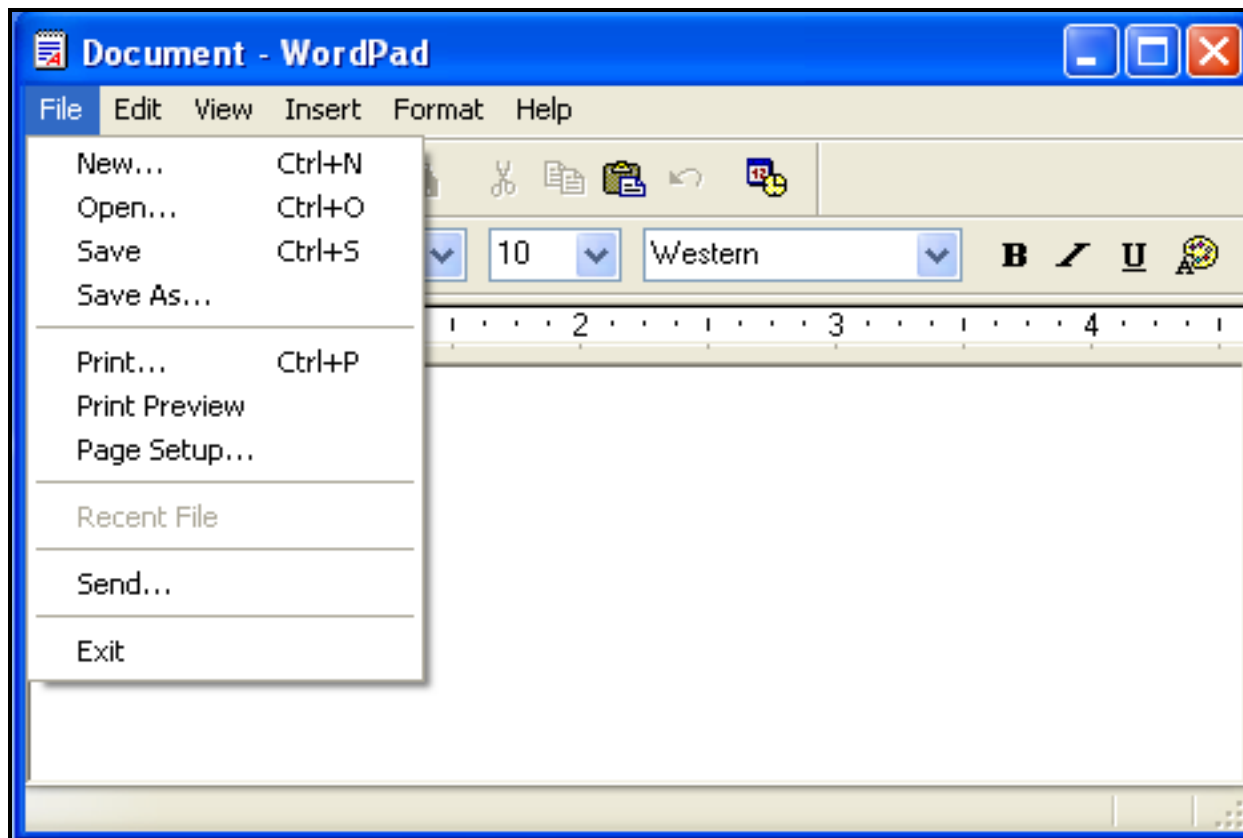




# Operating System basics

## Windows **XP** WordPad Application

*(Clearing showing the title bar, minimized, maximized, close buttons, menu, status bar and various other items)*



## *Final words....*

- *Liked this presentation? Whether you like it or not, I am very thankful to you for spending your valuable time in watching this presentation. It will be great, if you give a feed back on this presentation, so that, I can keep improving this presentation.*
- *I am also planning to bring out more technical/non-technical subject oriented presentations like this one.*
- *Mail me your feed back @ [pandu2020@yahoo.com](mailto:pandu2020@yahoo.com)*





*Thank You...*