

Subject: Information and Communication Technology



Lecture – 06

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Outlines

- Software
- Operating System
- Data & Information



Software

Software refers to a program or a set of instructions and applications used to manage and control various functions of computer. There are **two** types of software on the basis of their functionality:

1. System Software
2. Application Software



System Software

There are **three** types of system software

- i. Operating system
- ii. Device driver and
- iii. Utility program



Application Software

There are **two** types of application software

- i. Customized and
- ii. Package software



Purpose of Software

The function of application software is to perform specific operations for various applications. These functions include writing reports, creating spreadsheets, manipulating images, keeping records, developing websites and calculating expenses.



Difference between Hardware and Software

Hardware	Software
Physical parts of the computer are called hardware	A set of instructions given to the computer is called software.
You can touch, see and feel hardware.	You cannot touch and feel software
Hardware is constructed using physical materials or components	Software is developed by writing instructions in programming language.
Computer is hardware, which operates under the control of a software	The operations of computer are controlled through software.



Difference between Hardware and Software

Hardware	Software
If hardware is damaged, it is replaced with new one.	If software is damaged or corrupted, its backup copy can be reinstalled
Hardware is not affected by computer viruses.	Software is affected by computer viruses.
Hardware cannot be transferred from one place to another electronically through network	Software can be transferred from one place to another electronically through network
User cannot make new duplicate copies of the hardware.	User can make many new duplicate copies of the software.



Operating system

An **operating system** (OS) is system software that manages computer hardware and software resources and provides common services for computer programs. An operating system (OS) is the program that, after being initially loaded into the computer by a boot programs, manages all the other program in a computer.

Example: Windows 3.0, Windows 3.1, Windows 95, Windows 98, Windows ME, Windows NT, Windows XP, Windows Vista, 7 and 8.



Function of Operating system

1. Resources management
2. Memory management
3. Input/output management
4. File management
5. Processor management
6. User interface
7. Security



Function of Operating system

8. Task management
9. Networking
10. Utilities.



System Software

System software is computer software designed to operate and control the computer hardware as well as to run application software, such as Web browsers, media players and office suites.



Example of System Software

- Microsoft Windows
- Linux
- Unix
- Mac OS
- Device Driver Software



Why Windows operating system is most popular?

Windows is so popular due to its easy way of handling the operating system and it is user friendly. Creating the folders or deleting them can be done very effectively in windows even by a person who is new to the OS. It does not have to be dealt though command prompt and every activity can be done through mouse interface hence, Windows is very popular.



Difference between DOS and Windows

- DOS and Windows both are operating systems. DOS is a single tasking, single user and is CLI based OS whereas Windows is a multitasking, multiuser and GUI based OS.



Difference between DOS and Windows

DOS	Windows
DOS stands for Disk Operating System.	Windows stands for Windows, no specific form.
DOS is single tasking OS.	Windows is multi-tasking OS.
DOS consumes quite low power.	Windows consumes high power.
DOS memory requirements are quite low.	Windows memory requirements are quite high as compared to DOS.
DOS has no support for networking.	Windows supports networking.



Difference between DOS and Windows

DOS	Windows
DOS is complex in usage. You need to remember commands to use DOS properly.	Windows usages is user-friendly and is quite simple to use.
DOS is command line based OS.	Windows is GUI based OS
Multimedia is not supported in DOS.	Windows supports multimedia likes games, videos, audios etc.
DOS command execution is faster than Windows.	Windows operations are slower as compared to DOS.
DOS supports single window at a time.	Windows supports multiple window at a time.



Application program

An **applications program** is program designed to perform a specific function directly for the user or, on some cases, for another application program. Examples of applications include word processors, database programs, Web browsers, development tools, drawing, paint, image editing programs and communication programs.



Application Package

Bundle of two or more computer programs that together address a specific business need. For example, an 'illustration package' might include a drawing program, photograph manipulation program, page program and a color matching and output control (printing) program.



Data

Data can be defined a representation of facts, concepts or instructions in a formalized manner which should for communication, interpretation or processing by human or electronics machine.

Data is represented with the help of characters like alphabets (A-Z, a-z), digits (0-9) or special characters (+,-,/,*,<,>= etc).



Types of Data

There are **two** types of data: **Qualitative** and **Quantitative**

- **Quantitative** data deals with numbers and things you can measure objectively: dimensions such as height, width and length. Temperature and humidity, prices, area and volume.
- **Qualitative** data deals with characteristics and descriptors that can't be easily measured, but can but can be observed subjectively such as smells, tastes, textures, attractiveness and color.



Information

Information is organized or classified data which has some meaningful values for the receiver. Information is the processed data on which decisions and actions are based.



Information

For the decision to be meaningful, the processed data must qualify for the following characteristics:

- **Timely** - Information should be available when required.
- **Accuracy** - Information should be accurate.
- **Completeness** - Information should be complete



Any Questions?