



All About Software

LESSON OUTCOMES

After this lesson, students will be able to:

- » List the two major components of a computer.
- » Define software.
- » Give examples of software.
- » Define and give examples of system software:
 - Classify system software into different types.
 - Define and give examples of operating system.
 - List the main functions of an operating system.
 - Define and give examples of computer languages.
 - Describe the need for computer languages.
 - Classify computer languages into different types.
- » Define and give examples of application software:
 - Define and give examples of general-purpose software.
 - Classify general-purpose software into different types and give examples of each.
 - Define specific-purpose software.
- » Differentiate between system software and application software.
- » Define software piracy.
- » State the reasons why piracy is harmful and illegal.

WARM UP

» Circle the software.



Ans. Circle 2, 3 and 4.

CHAPTER NOTES

- » A computer is made up of two major components – Hardware and Software.
- » Software is a term used to describe a computer program, which is a set of instructions that tells the computer what to do.
- » Software can be split into the following two categories: System Software and Application Software.
- » Software required to run the hardware of the computer and other application software is called system software.
- » The data and instructions provided by input devices are received by system software.

- » System software is further divided into the following: Operating System (OS), Language Processors, Device Drivers and Utility Programs.
- » An operating system manages the computer's memory and processes, as well as all of its software and hardware.
- » The main functions of the OS include managing the software and hardware of the computer; coordinating the need to use the CPU simultaneously by multiple programs; interacting with the computer; keeping track of the primary memory and allocating memory when a process requests it; and providing security with the help of passwords to prevent misuse of the computer.
- » Windows (by Microsoft), Mac OS (by Apple), Android, UNIX and Linux are some popular operating systems.
- » Machines understand only binary language.
- » Software is required to convert all human instructions into machine understandable instructions.
- » There are three basic types of computer languages:
 - Machine Language, which is nothing but a string of 0's and 1's that the machines can understand. It is completely machine dependent.
 - Assembly Language, which uses symbols called mnemonics. Mnemonics are English like words or symbols used to denote a long string of 0's and 1's.
 - High Level Language (HLL), which uses English-like statements and is completely independent of machines. Programs written in high level languages are easy to create, read and understand. Examples of HLLs are QBasic, GW-BASIC, C++, Python, Java, etc.
- » Programs written in high level programming languages like Java, C++, etc., are called source code.

- » Set of instructions in machine-readable form is called object code or machine code.
- » Language processor converts the source code into object code.
- » Assembler converts an assembly level program into a machine level program.
- » Interpreter converts high level programs into machine level programs line by line.
- » Compiler converts high level programs into machine level programs at one go rather than line by line.
- » System software that controls and monitors the functioning of a specific device on a computer is called device driver.
- » Application software that assists system software in doing its work smoothly is called utility software.
- » Antivirus software provides protection to your computer against virus attacks. Norton, Quick Heal, AVG and McAfee are examples of some popular antivirus software.
- » File management tools allow us to browse, search, update and preview files. Windows Explorer in Windows OS, Google desktop, Directory Opus, etc., are examples of such tools.
- » Compression tools are software tools that shrink files so that they occupy less space in the computer's memory. WinZip, WinRAR, PkZip, etc., are popular compression software tools.
- » Backup tools enable backing up of files, folders, databases and complete disks. Backups are taken so that data may be restored in case of data loss. A software that is designed to perform a single specialised task and nothing else is called application software.
- » Application software is further divided into two main categories: General-purpose Application Software and Specific-purpose Application Software.

- » General-purpose software is meant to perform some general functions.
- » Specific-purpose application software, also called tailor-made software or customised software, is developed by companies or organisations to meet their specific requirements.
- » Software piracy is the illegal copying, distribution or use of software.

DEMONSTRATION

- » Using general-purpose software
- » Using specific-purpose software
- » Using antivirus
- » Using WinZip
- » Taking a backup

LAB ACTIVITIES

- » Open Word 2013, type the following text and save it as a file.

COMPUTER SOFTWARE

Software is a program that enables a computer to perform a specific task, as opposed to the physical components of the system (hardware).

This includes application software such as a word processor, which enables a user to perform a task, and system software such as an operating system, which enables other software to run properly, by interfacing with hardware and with other software.

Practical computer systems divide software into three major classes: system software, programming software and application software, although the distinction is arbitrary, and often blurred.

Computer software has to be “loaded” into the computer’s storage (such as a hard drive, memory or RAM).

Once the software is loaded, the computer is able to execute the software.

Computers operate by executing the computer program.

This involves passing instructions from the application software, through the system software, to the hardware which ultimately receives the instruction as machine code.

Each instruction causes the computer to carry out an operation — moving data, carrying out a computation or altering the control flow of instructions.

ASSESSMENT

Teacher can assess students on the basis of the following questions.

1. Differentiate between hardware and software.
2. Define operating system. Write down its various functions.
3. Differentiate between system software and application software.
4. Why is it essential to have backup files?
5. What is BIOS?