Information Technology, the Internet, and You

The future of computers and digital technology promises exciting opportunities. Powerful software and hardware systems are changing the way people interact in their dally life and on the internet.

This chapter introduces you to the basics of computing and technology in this ever-changing digital world, including:

1. The critical parts of a computer system and technology.
2. Understanding the connecting link between software, hardware and data.
3. How to maximise the use of technology.
4. How to integrate technology with people and understand the associated Ethics, Environment and Privacy aspects.
5. How the Internet, the web, and the wireless technology is changing and impacting human lives.

C0MPETENCIES

After reading this chapter, you should be able to:

1. Explain the parts of an information system: people, procedures, software, hardware, date, and the Internet.
2. Distinguish between system software and application software.
3. Differentiate between the three kinds of system software programs.
4. Define and compare general-purpose, specialised, and mobile applications.
5. Identify the four types of computers and the five types of personal computers.
6. Describe the different types of computer hardware, including the system unit, input, output, storage, and communication devices.
7. Define date and describe document, worksheet, database, and presentation files.
8. Explain computer connectivity, the wireless revolution, the internet, cloud computing, and IoT.i

INFORMATION SYST. EMS

When you think of a personal computer (pc), perhaps you just think of the equipment, such as the screen of the keyboard. Yet, there is more to a personal computer than that. The best way to think about a personal computer is as part of an information system. An information system has several parts: people, procedures, software, hardware, data, and the Internet.

* People: It is easy to overlook people as one of the parts of an information system. Yet this is what personal computers are all about-making people, end users like you, more productive.
* Procedures: The rules or guidelines which are to be followed by people when using software, hardware, and data are known as procedures. These procedures are typically documented in manuals written by computer specialists. Software and hardware manufacturers provide manuals with their products. These manuals are provided in printed or electronic form.
* Software: A program is step-by-step instruction that tell a computer how to do its work. Software is another name for a program, of programs. The purpose to software is to convert data (unprocessed facts) into information (processed facts). For example, a payroll program would instruct the computer to take the number of hours you worked in a month (data) and multiply it by your pay rate (data) to determine how much you are paid for the month (information).
* Hardware: The equipment that processes the data to create information is called hardware. It includes smartphones, tablets, keyboards, mouse, displays, system units, and other devices. Hardware is controlled by software.
* Data: The raw, unprocessed facts, including text, numbers, images, sounds, etc. are called data. Processed data yields information. Using the previous example of payroll program, the date (number of hours worked and pay rate) is processed (multiplied) to yield information (monthly pay).
* Internet: Almost all information systems connect and interact with other people and computers. This is done by the Internet. This connectivity greatly expands the capability and usefulness of information systems.

SOFTWARE

Software, as we mentioned, is another name for a program. A program is a set of instructions that tell a computer how to process data into the from you want. In most cases, the words software and program are interchangeable. There are two major kind of software: system software and application software. System software are designed to run resources.

System Software

The user interacts primarily with application software. System software enables the application software to interact with the computer hardware. System software is ‘background’ software that helps the computer manage its own internal resources.

System software is not a single program. Rather, it is a collection of programs, including the following:

* Operating system are programs that coordinate computer re-sources, provide an interface between users and the computer, and run applications. Smartphones, tables, and many other mobile devices use embedded operating systems, also known as real-time operating systems (RTOS). Desktop computers use stand-alone operating systems like Windows 10 or macOS, see Figures 1-2 and 1-3. Networks us network operating systems (NOS).
* Utilities perform specific tasks related to managing computer resources. One of the most essential utility program that every computer system should have is an antivirus program. This programs