

AIMS AND OBJECTIVES OF THE COURSE

- ❖ *To interact effectively with the computer.*
- ❖ *To know some basic things about the computer*
- ❖ *To know the uses of the basic components of the computer.*
- ❖ *To manage the system to some extent before involving an expert.*
- ❖ *To understand fundamentally the general scope of the computer system.*

INTRODUCTION

Computer as a revolution left no area of life untouched in the present world. It is of tremendous help in all field of life. Hence, the knowledge of computer is a necessity for existence of everybody in this global village. The invention of computer has transformed our simple manual works to sophisticated life of automated works to meet the global demand for the higher productivity and increased efficiency with high precision. Computer is increasingly becoming compulsory in nearly all fields of studies, not because of anything but its accuracy and versatility in processing data. Many tasks at home or office are being automated rapidly with computer. Thus, it is becoming apparent that in whatever discipline or working sector, the computer is now a very vital tool for efficiency improvement and precision of job or task execution.

A computer is an electronic device, operating under the control of instructions stored in its own memory. These instructions tell the machine what to do. The computer is capable of accepting data (input), processing data arithmetically and logically, producing output from the processing, and storing the results for future use. Most computers that sit on a desktop are called Personal Computers (PCs).

The "computer" is an ensemble of different machines that you will be using to get your job done. A computer is primarily made of the Central Processing Unit (usually referred to as the computer), the monitor, the keyboard, and the mouse. Other pieces of hardware are commonly referred to as peripherals.

It is essential to know that information is as good as the data from which it is derived, and the transformation process which they are subjected to. Meaningless data or inappropriate processing produces wrong information. Thus, computer gives you results corresponding to what data you supply and how you process it.

1-1 USES OF COMPUTER

People use computers in many ways; business, computers are used to track inventories with bar codes and scanners, check the credit status of customers, and transfer funds electronically, homes, tiny computers embedded in the electronic circuitry of most appliances control the indoor temperature, operate home security systems, tell the time, and turn video cassette recorders (VCRs) on and off. Automobiles regulate the flow of fuel, thereby increasing gas mileage, they also entertain, creating digitized sound on stereo systems or computer-animated features from a digitally encoded laser disc. Computers are used extensively in scientific research to solve mathematical problems, investigate complicated data, or model systems that are too costly or impractical to build, such as testing the air flow around the next generation of aircraft. The military employs computers in sophisticated communications to encode and unscramble messages, and to keep track of personnel and supplies.

1-2 HISTORY OF COMPUTING

Since the creation of man, a significant number of human activities has been ascribed to organizing and processing information so that it could be more easily presented for easy comprehension. Many devices have been used in the past before the advent of computer. It is then necessary to vividly look into their evolution.

Early computing machines:

- Abacus (-2500 BC): This is a hand- held device made of beads stung on rods in a frame. The rods correspond to positions of the digits while the beads correspond to the digits.
- Napierís Bone (2500BC): This was invented by John Napierís (1550 - 1617). This consists of small rods with appropriate markings on them. It is a mechanical aid to computation that consists of nine such rods (called bones) with one for each digit 1 through 9. He also invented logarithms which made possible to do division and multiplication by performing addition and subtraction.
- Slide Rule (1600AD) by William Oughtred (1575 - 660): He invented it in 1622 but announced it in 1632 this consist of rules on which markings represent logarithms of numbers and also permits calculation involving exponents, trigonometric functions, etc.

- Pascal mechanical calculator (1600) or Numerical wheel calculator: -Blaise Pascal (1623 -1664) in 1642 invented the first adding machine called Pascaline. The brass rectangular box used eight moveable dials to add and sum up of eight figures long using base 10. It can perform all the four-arithmetic operation with previous unheard speed.
- Leibniz mechanical multiplier (1600): In 1694 Gottfried Wilhelm Von Leibniz (1646 -1716) improved upon the Pascaline by creating a machine that can also multiply using a system of dials and gear.
- Colmar's Calculator (1820) by Charles Xavier Thomas de Colmar: This presented a more practical approach to computing.
- Punched-Card machine (Jacquard's loom) (1801): Joseph Marie Jacquard.
- Mechanical computer: Charles Gabbage (1792-1871). Father of the computer. Difference engine powered by steam and large as locomotive the machine has a stored program and could perform calculations and print the result automatically. We also have Analytical engine credited to him.
- Hermann Hollerith (1860-1929)
 - ✓ Hollerith's system punch-card reader machine: -for counting census result in 1890 in US.
 - ✓ formed Tabulating Machine Company in 1896(TMC)
 - ✓ Automatic Tabulating Machine (ATM)-1900
 - ✓ TMC was renamed to International Business Machines Corporation (IBM) in 1924 after series of mergers.

In summary, the history of computing began with an analog machine. In 1623 German scientist Wilhelm Schikard invented a machine that could add, and with the aid of logarithm tables, multiply and divide. Since then, the development has pass through a lot of stages such as the invention of punched cards to program patterns to create woven fabrics by Joseph-Marie Jacquard a French inventor in 19th century.

Another early mechanical computer was the Difference Engine, designed in the early 1820s by British mathematician and scientist Charles Babbage. In the 1930s American mathematician Howard Aiken developed the Mark I calculating machine, which was built by IBM. This electronic calculating machine used relays and electromagnetic components to replace mechanical components.

1-3 GENERATIONS OF COMPUTERS

The history of computer development is often referred to in reference to the different generations of computing devices. Each generation of computer is characterized by a major technological development that fundamentally changed the way computers operate, resulting in increasingly smaller, cheaper, more powerful, efficient and reliable devices.