

COMPUTER SOFTWARE

• **WHAT IS SOFTWARE**

Computer system is broadly classified as hardware and software. Hardware means physical components of the computer system. A complete set of instructions written to solve a problem on a computer is called software. i.e., software refers to the set of computer programs that cause the hardware (computer system) to function in the desired manner.

- Computer software is normally classified into two broad categories:

i. **System Software**

System software is a set of instruction to the machine to interpret and execute application software.

- #### ii. **Application Software**
- Application software is written to perform a specific task or process, such as accounting, payroll, mailing list, result preparation and so on.

- **COMPUTER LANGUAGE** If you want to get some work done by the computer, you have to tell the computer in a language that the computer understands, i.e., machine language. The machine language consists of only binary digits, i.e., 0 and 1. It was felt quite difficult and tedious for human beings to think in binary numbers. For communicating with the computer, it was thought that it is advisable to develop a third language, a programming language that can be understood by both human beings and the computer. Thus, a

programming language is a set of rules that provides a way of instructing the computer to perform certain operations. It can be classified into following categories.

- Machine Languages** - Programs that have only binary digits are called a machine language programs.
- Assembly Languages** - Assembly languages, also known as symbolic Computer Software languages use abbreviations or mnemonic code - codes that are more easily memorized to replace the 0s and 1s of machine languages.
- High Level Languages** - We will subdivide high-level languages into three generation:
 - Procedural-oriented Languages** - languages such as Pascal, BASIC, COBOL, and FORTRAN, which are designed to express the logic, the procedure, of a problem.
 - Problem-oriented Languages and Application Generators** - Fourth-generation languages, are high-level languages designed to solve specific problems or develop specific applications by enabling you to describe what you want rather than step-by-step procedures for getting there.
 - Natural Languages** - They are designed to make the connections that humans have with computers more natural - more human like. They are designed to allow the computer to become "smarter" - to actually simulate the learning

process by remembering and improving upon earlier information.

- **COMPILERS AND INTERPRETERS** For a high-level language to work on the computer it must be translated into machine language. There are two kinds of translators - compilers and interpreters. In a compiled language, a translation program is run to convert the high-level language program (which is called the source code) into a machine language code. This translation process is called compilation. In short Compiler reads the entire program for compilation. Interpreter reads single statement at a time for interpretation.

CHECK YOURSELF

1. Examples of system programs include:
 - A. Operating system
 - B. Trace program
 - C. Compiler
 - D. All of above
2. Translators for low level programming language were termed as:
 - A. Assembler
 - B. Compiler
 - C. Linker
 - D. Loader
3. Which computer language uses mnemonics?
 - A. Machine language
 - B. Assembly language
 - C. High level language
 - D. None of the above

4. Specialized program that allows user to utilize in specific application is:

- A. Relative programs
- B. Application programs
- C. Replicate programs
- D. None of the above

STRETCH YOURSELF

1. How is hardware different from software?
2. What is the difference between a compiler and an interpreter?
3. What are the different Computer languages?

ANSWERS

Answers to Check Yourself:

1. D
2. A
3. B
4. B