Main Copy

Computer Programming With C

Chapter-1:Introduction

1.What is Computer ?

Answer: The word computer comes from the word 'Compute'. Computer is an electronics or calculating device which operations automatically can perform arithmetic or logical.

2.What do you mean by Computer Program ?

Answer: Program is a set of sequenced instructions written in a language by a computer which is used to solve a particular problems.

3.What is Programming Language ? What types of Programming Languages ?

Answer: Programming language is a language which is used to write a computer program.

There are three types of Programming language which are given below:

1. Low level language: Programming languages which normally translates from one source code to one object code. It is machine dependent. Two types of low level language which are given below:

a. Machine Language,
b. Assembly Language,

2.Mid level language: C, FORTRAN, PASCAL etc.

3.High level language: C, C++, JAVA, BASIC, PASCAL, FORTRAN etc.

4.Write the characteristics of a good programming languages.

Answer: There are some characteristics of a good programming languages which are given below:

- **Simplicity:** A good programming language must be simple and easy to learn and use.
- **Naturalness:** A good programming language should be natural for the application area for which it has been designed.
- **Abstraction:** Abstraction means the ability to define and then use complicated structures or operations in ways that allow many of the details to be ignored.
- **Efficiency:** Programs written in a good programming language are efficiently translated into machine code, are efficiently executed and acquire as little space in a memory as possible.
- **Suitable to its environments:** Depending upon the type of application for which a programming language has been designed, the language must be made suitable to its environment.

5.What do you mean by Machine Language ? Write advantages & limitations.

Answer: A low level language which is directly understandable by a computer system.

Advantages: There are some advantages of machine language which are given below:

I. It required to low memory location or space.
II. It can be executed the program so fast.
III. It does not need to translation of a program.

Limitations / Disadvantages:

I. It is machine dependent.
II. It is difficult to write the program.
III. It is difficult to debug the program.
IV. It is difficult to modify the program.

6.What do you mean by Assembly language ? Write advantages & limitations.

Answer: A programming language which allows instructions & storage location to be represented by letters and symbols instead of numbers.

Advantages: There are some advantages of assembly language which are given below:

I. It is easy to understand and use.
II. It is easy to locate and correct errors.
III. It is easy to modify.
IV. It is easy to debug the program.

Limitations / Disadvantages:

I. It is machine dependent.
II. It require to knowledge of hardware.
III. It require to the translator program.

7.What is High level language ? Write advantages & limitations.

Answer: A programming language whose structure is application oriented and is independent of a computer system.

Advantages: There are some advantages of high level language which are given below:

I. It is machine independent.
II. It is easy to learn and use.
III. It is easy to maintain.
IV. It has few errors.
V. It has lower program preparation cost.

Limitations / Disadvantages:

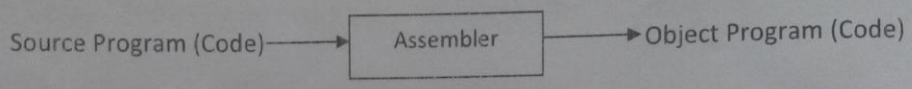
I. Lower efficiency.
II. Less flexibility.

8.What is Assembly program ?

Answer: A program which is written in an assembly language is called assembly program.

9.What is an Assembler ?

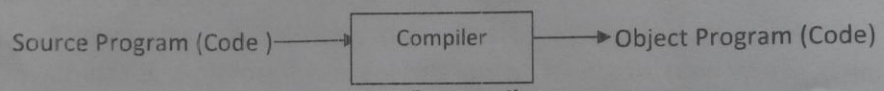
Answer: A computer program which translates an assembly language program to its machine language equivalent .



Figure@: An assembler.

10.What do you mean by Compiler ?

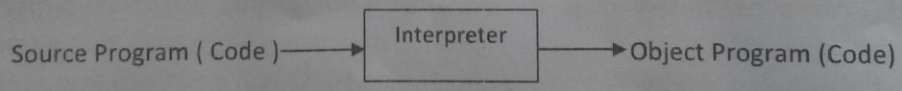
Answer: Compiler is a translator program which reads all the source code, if it has no error then translates its to object or machine code .



Figure©: Compiler.

11.What do you mean by Interpreter ?

Answer: Interpreter is a translator program which executes the program line by line and translates its to object code .



Figure©: Interpreter.

12.What do you mean by source code & object / machine code ?

Answer: Source Code: A program written in a symbolic or high level language such as: assembly language, COBOL, BASIC, C ,C++ etc which is called Source Code or Program.

Object / Machine Code: The results from the translation of a source program by a language processor is called Object or Machine Code or Program.

13.Which are so much familiar between Compiler & Interpreter and why ?

Answer: Compiler is so much familiar than Interpreter. Because Interpreter takes so much time than Compiler to convert the source code to object code.

14.What is an Algorithms ? How to represents the algorithms for solving a problem ?

Answer: An algorithm is a well defined list of step for solving a particular problems.

There are three ways to represents the algorithms for solving a problem :

1.AsProgram,
2.As Flowcharts,
3.As Pseudocode .

When an algorithm is represented in the form of a programming language, it becomes a program. Hence, any program is an algorithm, although the reverse is not true.

Besides represented as programs, algorithms are often represented as flowcharts and pseudocodes. These are the commonly used tools used by programmers for program planning which can be of immense help in developing an effective and correct algorithm for a program before it is coded into a programming language.

15.What is Flowcharts ? Write the basic symbols of flowcharts.

Answer: A flowcharts is a pictorial representation of an algorithms which is used by a programmer for solving a problem.

- **Terminal:** The terminal symbol is used to indicate the beginning (start) and end (stop) and pause (halt) in the program logic flow.
- **Input / Output:** It is used to denote any function of an input/output device in the program.
- **Processing:** A processing symbol is used in a flowchat to represent arithmetic and data movement instructions.
- **Decision:** It is used in a flowchart to indicate a point at which a decision has to be made and a branch to one of two or more alternative points is possible.
- **Flow lines:** Flow lines with arrowheads are used to indicate the flow of operation, that is the exact sequence in which the instructions are to be executed.
- **Connectors:** Whenever a flowchart becomes complex enough that the number and direction of flow lines is confusing or it spreads over more than one page, it is useful to utilize the connector symbol as a substitute for flow lines.

16.What are the advantages & disadvantages of Flowcharts ?

Answer: There are some advantages of flowcharts which are given below:

1. It is used for better communications.
2. It is used for proper program documentations.
3. It is used for efficient coding. It is used for systematic debugging.
4. It is used for systematic testing, etc.

There are several limitations of flowcharts which are given below:

1. Very time consuming,
2. Difficult to developed, etc.

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