# Fundamentals of C Language

**Header file:**

A C program is written using many functions, which are available under many header files. The required header file has to be included whenever such functions are used in the program.

Example:

#include<stdio.h>
#include<conio.h>

**Q. Explain the need for the following header file:**
#include<stdio.h>
#include<math.h>

**Solution:** The header file <stdio.h> is used to include and link standard input/output functions in a C program.

The header file <math.h> is used to include and link mathematical functions like sqrt( ), fabs( ) and so on in a C program.

**Q.** What is Preprocessor?

**Solution:** The preprocessor is used to modify your program according to the preprocessor directives in your source code. Preprocessor directives (such as #define) give the preprocessor specific instructions on how to modify your source code. The preprocessor reads in all of your include files and the source code you are compiling and creates a preprocessed version of your source code. This preprocessed version has all of its macros and constant symbols replaced by their corresponding code and value assignments. If your source code contains any conditional preprocessor directives (such as #if), the preprocessor evaluates the condition and modifies your source code accordingly. The preprocessor contains many features that are powerful to use, such as creating macros, performing conditional compilation, inserting predefined environment variables into your code, and turning compiler features on and off. For the professional programmer, in-depth knowledge of the features of the preprocessor can be one of the keys to creating fast, efficient programs.

Q. What is a computer program?

A set of instructions written in one of the programming languages to solve a problem is called a computer program.

**Q.** What is an assembler?

An assembler is a computer program or translator which translates an assembly language program into a machine language program.

**Q.** What is a source program ?

**Solution:**
The language in which a programmer writes programs is called source language. It may be a high-level language or an assembely language. A program written in a source language is called a source program. When a source program is converted into machine code by an assembler or compiler it is known as an object program.

**Q.** What is an object program ?

The translated or binary form of a source program is called an object program.

**Q.** What is an executable program ?

A program generated from object program by linking the input/output devices in order to execute the instructions given in a source program is called an executable program.

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