Advantages and Disadvantages of C++ language

C++ is based on the C language, and it was developed in early 1980's by Bjarne Stroustrup at *AT&T Bell Laboratories*, Here "++" use for the extension because "++" is a syntactic construct used in C *to increment a variable*. Most of the C++ content is the super-set of "C", Due to this extension most C programs can be compiled using a C++ compiler.

A C++ program is a collection of commands, which tell the computer to do "something." This collection of commands is usually called *C++ source code*

C++ is the Mid-Level programming language because it acquires the feature of Low level as well as high-level programming language.

Using C++ Programming Language we can create a different kind of Software, *These are:*

- System software

- application software

- device drivers

- embedded software

- high-performance server and client applications and

- entertainment software such as video games

What is C++?

C++ is an object oriented [programming language](#)

What is language?

A language is a software computer is an electronic device cannot perform operating by own.

Language provides set of instructions to perform operations by computer.

Language is nothing but programming tool

C++ is the name of the language

'c' language is derived from 'B' language

'B' language is derived from BCPL

'C' language develops in the year 1972

C++ language is developed in the year 1980

What is a Program?

Set of instructions or collection of instructions and data.

Programming elements are

-Data

-instruction

To write a program to required Data and instructions.

programming is nothing but a process of organizing data and instructions according to given problem

object oriented means rules and regularity

What are Programming Principles

Programming principle defines set of rules and regulations for the organization of data and instructions

- Process Monolithic programming

- Process oriented programming

- Modular oriented programming

- Structure oriented programming

- Object oriented programming

Applications of C++

Using C++, you can develop system software like OS, Device Drivers, Network(N/W) protocols, PC – utilities

Application software you can develop application like

- Database

- Word processing

- Spreadsheets

- C++ is a general purpose programming language better than 'c'.

- General purpose means it is suitable for developing any software.

- CUI means a character user interface

Programming Concepts

Unstructured programming / Monolithic programming

- Organizing the data and instructions are organized in sequential manner called Monolithic programming

- In this approach instruction organization in sequential order

- A sequence is set of instructions used to solve a given problem. (Assembly level language, Basic)

- Program execution is controlled by using a goto statement

Disadvantages

Code redundancy: the same operation has to be more than one time, the same sequence has to copy at some places.

Size of program is incremental

Efficiency of the program is decreased

Procedural Programming

COBOL and Pascal are called as procedural oriented [programming languages](#).

In this approach instruction organized according to their operations by dividing into small programs or small pieces called the subroutine.

A subroutine is a small program within a program

This subroutine can be procedure or function

Advantages

- Modularity: Dividing a program into small pieces 0 also called as divide and conqueror According to their operations into small modular.

- Re-usability: write code once and use more than one time.

- Readability: Easy to read or understand.

Disadvantages

- Data is global or local

- Its emphasis on instructions, but not on data.

What is a Modular programming

In modular programming, a module is a programming in this approach; application contains one or more that one module

Each program is divided into a subroutine.

A program which contains a main is called an executable module which is compiled as .ex

A program which has doesn't have main is called reusable module which is compiled as .LIB(Library)

Structured programming

'C' and pascal are called structured programming language

Characters of structured programming

- Modular programming

- User defined data types (Pascal)

- scoped variables (local & Global)

- One subroutine communicates with another by passing values

- Top-down approach

Disadvantages

- Data is global and global data does not have security

- Unrelated [operation access](#) global data, if leads and logical errors.

- Debugging application is complex

- In a large program identifying which operation operates what data becomes complex.

Advantages and Disadvantages of C++ language

Advantages of C++

- Object oriented

- Portable language (writing a program irrespective of operating system as well as Hardware)

- Low-level language like Assembly language on Machine language called portable.

- C++ use multi-paradigm programming. The Paradigm means the style of programming .paradigm concerned about logics, structure, and procedure of the program. [C++](#) is multi-paradigm means it follows three paradigm Generic, Imperative, Object Oriented.

- It is useful for the low-level programming language and very efficient for general purpose.

- C++ provide performance and memory efficiency.

- It provides a high-level abstraction.

- In the language of the problem domain.

- C++ is compatible with [C](#).

- C++ used reusability of code.

- C++ used inheritance, [polymorphism](#).

Portability

- Portability allows developing program irrespective of hardware

- It allows moving the program development for one platform to another platform

- C compatible (COMP): Programs developed in 'C' language can be moved without any modifications into C++

- C++ is an object oriented embedded language which is having the characteristics of low-level language & which is also developing the embedded software.

- Which language having low-level features

Disadvantages

- It has no security

- Complex in a very large high-level program.

- Used for platform specific application commonly.

- For a particular operating system or platform, the library set has usually chosen that locks.

- When C++ used for web applications complex and difficult to debug.

- C++ can't support garbage collection.

- C++ is not secure because it has a pointer, friend function, and global variable.

- No support for threads built in.

What are the C and C++?

C is a procedural (aka structural) programming language. In addition to beginning procedural, **C++** is also an object oriented programming language.
In **C** language, the solution is achieved through a sequence of procedures or steps. Therefore, **C** is a function driven language.

How different is C# from C++?

C++ was designed to allow developers to use all of the existing features of C but provides some extensions to support object-oriented programming techniques in an intermediate-level programming language. **C#** is a complete outlive in this list. Despite its name, it has far more in common with Java than C or **C++**.

What is the difference between C & C++?

C	C++
It is a structured programming language.	It is an object-oriented programming language
It does not have inline function	It supports inline function
It does not support functions with default arguments	It supports() with default arguments
It does not have exception handing	It supports exception handling
It having pointers	It having pointer and references
It is a middle-level language	It is a high-level language
It uses scanf() and printf() function for standard input and output	It uses cin>>and cout<< for standard input and output
The C program file is saved with .C extensions	C++ program file is saved with.CPP extension.