C++ Programming Language Syllabus

DETAILS

On learning C Programming one can master C++ Programming language. C++ is an extension to C Programming and covers Object Oriented Programming popularly known as OOPS Concepts.
C++ is a powerful general-purpose programming language. It can be used to create small programs or large applications. It can be used to make scripts or DOS programs. C++ allows you to create programs to do almost anything you need to do.

The major difference between C and C++ is that C is procedural programming language and does not support classes and objects, while C++ is a combination of both procedural and object oriented programming language; therefore C++ can be called a hybrid language.

Hands-on Programming Practice

Techno Knowledge Center

Beginning with C++

- What is C++, its Applications, Advantages etc.
- Difference between C and C++. major and minor difference.
- Creating C++ source file, Editing, Compiling, Linking, Debugging. Etc.
- Make File Utility, Command Line Arguments etc.

Explaining Procedure oriented Language(C) and Object Oriented Language.(C++)

- Look at Procedure-oriented Programming
- A Brief Look At Object Oriented Programming(OOP).
- Applications of OOP, Benefits of OOPS

C++ Tokens, Expressions, and Control Structure.

- Tokens
- C++ keywords
- Basic Data Types
- User-defined Data Types
- Derived Data Types
- Operators in C++
- Reference Variables
- Operator Precedence
- Control Structure.

Functions In C++

- Different forms of functions
- function prototyping
- Call by Reference
- Inline Functions
- Function overloading
- Operator Overloading
- friend and virtual functions

Classes And Objects

- C Structure revision
- Defining classes, defining member functions.

- Declaration of objects to class Access to member variables from objects etc
- different forms of member functions dependence on access specifiers(i.e. Private, public, protected) .
- array of objects
- objects as function arguments
- returning objects
- pointers to members
- local classes.

Constructor and Destructor

- introduction
- constructors
- Types of constructors
- Use of Multiple constructors
- dynamic initialization of objects
- Destructors.

Operator Overloading and type conversion

- Introduction
- defining operator overloading
- overloading overloading(unary, binary operators)
- overloading binary operators using friends
- Rules for overloading operators
- type conversion

Inheritance – extending class

- Introduction
- Types of inheritance
- Single inheritance
- multiple inheritance
- Multilevel inheritance
- Hierarchical inheritance
- hybrid inheritance etc.

Pointer, Virtual Functions, Polymorphism.

- Introduction
- pointers

- pointers to objects
- this pointer
- pointers to derived class
- virtual functions
- pure virtual functions etc.

Managing Console I/O Operations

- Introduction
- C++ streams
- c++ stream classes
- unformated / formated I/O operations.
- managing output with manipulators.

Working with files.

- Introduction
- creating/ opening / closing / deleting files
- file pointers and their manipulators
- updating file random access to file
- Error handling during file operations.

Templates

- Introduction
- class templates
- function templates

Exception Handling

- Introduction
- Exception handling – throwing, catching, re-throwing an exceptions , specifying exceptions etc.