# C++ (1)

## 1  Introduction to C++

Starting with C++

How C++ evolved from C?

Features of C++

Procedure-oriented programming

OOP vs. procedure-oriented programming

The basic anatomy of a C++ program

Starting with a simple "Hello World" program

Compiling, linking and running a C++ program

## 2  The Basics of C++

Base Data Types and sizes

User-defined Data Types

Variable Declarations, Variable Names

Dynamic initialization of variables

Constants and its types

Character Constants

String Constants

Standard input and standard output

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Formatted input –cin

Formatted output – cout

Use of << and >> operators

# 3  Working with Operators and Expressions

Operators

Arithmetic Operators

Relational Operators

Assignment Operator

Logical Operators

Increment and Decrement Operators (++ and --)

'Operate-Assign' Operators (+=, *=, ...)

Expressions

What are Expressions?

Operator Precedence

Precedence and Order of Evaluation

Conditional Expression

Casting and type conversion

# 4  Controlling the Program Flow (1)

Decision control

if

if – else

if - else if

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Case Control

switch

goto

# 5 Controlling the Program Flow (2)

Loop Control

while

do – while

for

break

continue

# 6 Using Functions

Why Functions?

Anatomy of a Function

Returning values from functions

Arguments Passed by Value

Passing Addresses of Arguments

Concept of variable scope and scope rules

Static and automatic variables

Global variables

# 7 Arrays

Understanding Arrays

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Arrays

Initializing Arrays

Passing Arrays to Functions