

CLUSTER UNIVERSITY SRINAGAR

COMPUTER APPLICATIONS

BG - 5th Semester

Object Oriented Programming Using C++

UNIT-I.

Introduction

Procedure Oriented Programming, Object Oriented Programming Paradigm, Basic Concepts of OOP, Benefits of OOP, Object Oriented Languages, Features of OOP, How OOP Differ from POP, Applications of OOP, A Simple C++ Program, Structure of C++ Program, Tokens, Keywords, Identifiers and Constants, Basic Data Types, User Defined Data Types, Derived Data Types, Dynamic Initialization of Variables, Reference Variables, Operators in C++, Scope Resolution Operator, Member Dereferencing Operators, Memory Management Operators-new & delete.

UNIT-II.

Functions, Classes and Objects:

Functions, Inline functions, Function Overloading, Default Parameters, Optional Parameters, const arguments Introduction to Classes, Specifying a Class, Defining a Member Functions, Constructors, Parameterized Constructors, Constructor overloading in a Class, Constructors with Default Arguments, Dynamic initialization of Objects, Copy Constructors, Dynamic Constructors, Destructors, Class Access Specifiers, Memory Allocation for Objects, Static Data Members, Static Member Functions, Arrays of Objects, Objects as Function Arguments,

UNIT-III

Inheritance:

Introduction to inheritance, Defining Derived Classes, Single Inheritance, Multiple Inheritance, Multi Level Inheritance, Hierarchical Inheritance, Hybrid Inheritance, Abstract Classes, Constructors in Derived Classes, Containership, Operator overloading, Rules for Operator overloading, overloading of binary and unary operators. Overloading type cast operators.

UNIT-IV

Pointers, Virtual Functions and Polymorphism:

Memory Management, new Operator and delete Operator, Pointers to Objects, this Pointer, Pointers to Derived Classes, Polymorphism, compile time polymorphism, Run time polymorphism, Virtual Functions, Pure Virtual Functions, Virtual Base Classes, Virtual Destructors.

References:

1. Object Oriented Programming in C++ by Robert Lafore Techmedia Publication
2. The complete reference C++ by Herbert shieldt Tata McGraw Hill Publication
3. Object Oriented Programming in C++ Saurav Sahay Oxford University Press
4. Object Oriented Programming in C++ R Rajaram New Age International Publishers 2nd

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