

Object Oriented Programming through JAVA

Objective of the Course:

On Completion of this course is student. Will be able to program Java classes using a subset of data types, Control statements etc. Will be able to construct simple Java user interfaces and identify the data structures in those user interfaces.

Learning Outcomes: The student is expected to have

- Understanding of OOP concepts and basics of java programming (Console and GUI based)
- The skills to apply OOP and Java programming in problem solving
- Should have the ability to extend his knowledge of Java programming further on his/her own.

UNIT - I

Introduction: Creation of Java, Importance of Java to Internet, Byte code, Java buzzwords, OOP Principles - Encapsulation, Inheritance and Polymorphism, Data types, Variables, Declaring variables, Dynamic initialization, Scope and life time of variables, Arrays, Operators, Control statements, Type conversion and casting, Compiling and running of simple Java program, Reading data from Keyboard, I/O Basics

UNIT - II

Concepts of classes and objects Class fundamentals – Declaring objects, Assigning object reference variables, Introducing methods, Constructors, Usage of static with data and methods, Usage of final with data, Access control, this key word, Garbage collection, Overloading methods and constructors, Call by value, Recursion, Nested classes and Inner classes, Exploring the String class.

UNIT - III

Inheritance, Types of Inheritances, Member access rules, Usage of super key word, Method overriding, Abstract classes, Dynamic method dispatch, Using final with inheritance, the Object class.

UNIT – IV

Defining, Creating and Accessing a Package, Understanding CLASSPATH, Importing packages, Differences between classes and interfaces, Defining an interface, Implementing interface, Applying interfaces, Variables in interface and Extending interfaces.

UNIT - V

Exception Handling: Concepts of Exception handling, Types of exceptions, Usage of try, Catch, Throw, Throws and Finally keywords, Built-in exceptions, Creating own exception Sub classes.

TEXT BOOKS:

1. Herbert Schildt, "The Complete Reference Java J2SE", 7th ed., TMH Publishing Company Ltd, New Delhi, 2008.
2. Joe Wiggles worth and Paula McMillan, "Java Programming Advanced Topics", 3rd ed., TMH, 2009.

REFERENCE BOOK :

1. OCA Java SE 7 Programmer I Certification Guide PREPARE FOR THE 1Z0-803 EXAM MALA GUPTA
2. Cay Horstmann, "Big Java", 2nd ed., John Wiley and Sons, 2006 (for swings).