

## JAVA PROGRAMMING

**Objective: Implementing programs for user interface and application development using core java principles**

### UNIT I:

**Objective: Focus on object oriented concepts and java program structure and its installation**

#### Introduction to OOP

Introduction, Need of Object Oriented Programming, Principles of Object Oriented Languages, Procedural languages Vs OOP, Applications of OOP, History of JAVA, Java Virtual Machine, Java Features, Program structures, Installation of JDK1.6

### UNIT II:

**Objective: Comprehension of java programming constructs, control structures in Java**

#### Programming Constructs

Variables , Primitive Datatypes, Identifiers- Naming Conventions, Keywords, Literals, Operators-Binary,Unary and ternary, Expressions, Precedence rules and Associativity, Primitive TypeConversion and Casting, Flow of control-Branching,Conditional, loops.,

**Classes and Objects-** classes, Objects, Creating Objects, Methods, constructors-Constructor overloading, cleaning up unused objects-Garbage collector, Class variable and Methods-Static keyword, this keyword, Arrays, Command line arguments

### UNIT III:

**Objective: Implementing Object oriented constructs such as various class hierarchies, interfaces and exception handling**

**Inheritance:** Types of Inheritance, Deriving classes using extends keyword, Method overloading, super keyword, final keyword, Abstract class

**Interfaces, Packages and Enumeration:** Interface-Extending interface, Interface Vs Abstract classes, Packages-Creating packages , using Packages, Access protection, java.lang package

**Exceptions & Assertions** - Introduction, Exception handling techniques-try...catch, throw, throws, finally block, user defined exception, Exception Encapsulation and Enrichment, Assertions

### UNIT IV:

**Objective: Understanding of Thread concepts and I/O in Java**

**MultiThreading :** java.lang.Thread, The main Thread, Creation of new threads, Thread priority, Multithreading- Using isAlive() and join(), Synchronization, suspending and Resuming threads, Communication between Threads

**Input/Output:** reading and writing data, java.io package

### UNIT V:

**Objective: Being able to build dynamic user interfaces using applets and Event handling in java**

**Applets-** Applet class, Applet structure, An Example Applet Program, Applet Life Cycle, paint(),update() and repaint()

**Event Handling** -Introduction, Event Delegation Model, java.awt.event Description,Sources of Events, Event Listeners, Adapter classes, Inner classes

### UNIT VI:

**Objective: Understanding of various components of Java AWT and Swing and writing code snippets using them**

#### Abstract Window Toolkit

Why AWT?, java.awt package, Components and Containers, Button, Label, Checkbox, Radio buttons, List boxes, Choice boxes, Text field and Text area, container classes, Layouts, Menu, Scroll bar

#### Swing:

Introduction , JFrame, JApplet, JPanel, Components in swings, Layout Managers, JList and JScroll Pane, Split Pane, JTabbedPane, Dialog Box

Pluggable Look and Feel

**TEXT BOOKS:**

1. The Complete Reference Java, 8ed, Herbert Schildt, TMH
2. Programming in JAVA, Sachin Malhotra, Saurabh choudhary, Oxford.
3. JAVA for Beginners, 4e, Joyce Farrell, Ankit R. Bhavsar, Cengage Learning.
4. Object oriented programming with JAVA, Essentials and Applications, Raj Kumar Bhuyya, Selvi, Chu TMH
5. Introduction to Java programming, 7<sup>th</sup> ed, Y Daniel Liang, Pearson

**REFERENCE BOOKS:**

1. JAVA Programming, K.Rajkumar.Pearson
2. Core JAVA, Black Book, Nageswara Rao, Wiley, Dream Tech
3. Core JAVA for Beginners, Rashmi Kanta Das, Vikas.
4. Object Oriented Programming Through Java, P. Radha Krishna, Universities Press.