

I Year II Semester

L T P C

Code: 20ES2008

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OBJECT ORIENTED PROGRAMMING THROUGH JAVA

Course Objectives: This course is designed to:

1. Study the basic concepts and functions of operating systems
2. Understand the concepts of classes and objects, Applet and AWT
3. Learn classifications of inheritance
4. Introduce Identifying and rectifying errors using exceptions
5. Emphasize the concepts of Applets, AWT

Course Outcome: At the end of the course the student will be able to

1. Understand the object-oriented programming concepts
2. Create simple applications using classes and objects
3. Develop applications using different types of inheritances
4. Apply parallel processing applications using threads
5. Develop applications GUI applications using Applets/AWT

UNIT-I

Introduction to OOP, procedural programming language and object oriented language, principles of OOP, applications of OOP, history of java, java features, JVM, program structure. Variables, primitive data types, identifiers, literals, operators, expressions, precedence rules and associativity, primitive type conversion and casting, flow of control.

UNIT-II

Classes and objects, class declaration, creating objects, methods, constructors and constructor overloading, garbage collector, importance of static keyword and examples, this keyword, arrays, command line arguments, nested classes.

UNIT-III

Inheritance, types of inheritance, super keyword, final keyword, overriding and abstract class. Interfaces, creating the packages, using packages, importance of CLASSPATH and java Lang package, Exception handling, importance of try, catch, throw, throws and finally block, user defined exceptions, Assertions.

UNIT-IV

Multithreading: introduction, thread life cycle, creation of threads, thread priorities, thread synchronization, communication between threads.

UNIT-V

Applet: Applet class, Applet structure, Applet life cycle, sample Applet programs. Event handling: event delegation model, sources of event, Event Listeners, adapter classes, inner classes. AWT: introduction, components and containers, Button, Label, Checkbox, Radio Buttons, List Boxes, Choice Boxes, Container class, Layouts, Menu and Scrollbar.

Text Books:

1. The complete Reference Java, 8th edition, Herbert Schildt, TMH.
2. Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford.
3. Introduction to Java programming, 7th edition by Y Daniel Liang, Pearson

Reference Books:

1. Dietal & Dietal, Java: How to Program, 8th Edition, PHI, 2010
2. C.S. Horstmann and G.Cornell, Core Java, Vol1. Fundamentals, 7th Edition, Pearson Education, 2004
3. C. Horstmann, BIGJAVA Compatible with Java 5&6, 3rd Edition, Wiley Publishers, 2008