



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

Course Code: GR15A2070
II Year II Semester

L:3 T:1 P:0 C:4

Prerequisite: Knowledge on C, C++

Course Objectives

- To understand the concepts and features of object oriented programming
- To examine key aspects of java Standard API library such as util, io, applets, swings, GUI based controls.
- To learn java's exception handling mechanism, multithreading, packages and interfaces.
- To develop skills in internet programming using applets and swings

Course Outcomes

At the end of this course the students will be:

- able to apply object oriented programming features and concepts for solving given problem.
- able to use java standard API library to write complex programs .
- able to implement object oriented programming concepts using java
- able to develop interactive programs using applets and swings.

Unit-I

Introduction: OOP concepts, history of Java, Java buzzwords, data types, variables, scope and life time of variables, arrays, operators, expressions, control statements, type conversion and casting, simple java program.

Classes and Objects: concepts of classes, objects, constructors, methods, this keyword, garbage collection, overloading methods and constructors, parameter passing, recursion.

String handling: String, StringBuffer, StringTokenizer.

Unit-II

Inheritance: base class object, subclass, member access rules, super uses, using final with inheritance, method overriding, abstract classes.

Interfaces: defining an interface, implementing interface, differences between classes and interfaces and extending interfaces.



Packages: defining, creating and accessing a package, importing packages, access control, exploring package - Java.io

Unit-III

Exception handling: concepts of exception handling, benefits of exception handling, exception hierarchy, checked and unchecked exceptions, usage of-try, catch, throw, throws and finally, built in exceptions, creating own exception sub classes.

Multithreading: differences between multi-threading and multitasking, thread life cycle, creating threads, synchronizing threads, daemon threads, thread groups.

Unit-IV

Applets: concepts of applets, differences between applets and applications, life cycle of applet, types of applets, creating applets, passing parameters to applets.

Event Handling: events, event sources, event classes, event listeners, delegation event model, handling mouse and key board events, adapter classes. The AWT class hierarchy, user interface components-labels, button, canvas, scrollbars, text components, checkbox, checkbox groups, choices, lists.

Unit-V

Layout manager: layout manager types-border, grid, flow, card and grid bag.

Swing: Introduction, limitations of AWT, components, containers, exploring swing- JApplet, JFrame and JComponent, Icons and Labels, text fields, buttons – The JButton class, Checkboxes, Radio buttons, Combo boxes, Tabbed Panes, ScrollPanes, Trees and Tables.

Teaching Methodologies

White-board, marker, power point presentations

Text Books

1. Java The complete reference, 8th editon, Herbert Schildt, TMH.
2. Understanding OOP with Java, up dated edition, T.Budd, Pearson education.

Reference Books

1. An Introduction to programming and OO design using Java, J. Nino and F.A. Hosch, John Wiley & sons.
2. An Introduction to OOP, second edition, T. Budd, pearson education.
3. Introduction to Java programming 6th edition, Y. Daniel Liang, pearson education.
4. An introduction to Java programming and object oriented application development, R. A. Johnson-Thomson