RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Computer Science & Information Technology, III-Semester

CSIT306 (Java Programming Lab)

Course Objectives:

1. Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
2. Understand fundamentals of object-oriented programming in Java and be familiar of the important concepts like class, inheritance and multithreading, AWT and JDBC.
3. Students will able to use the Java SDK environment to create, debug and run simple Java programs.

Unit I-Overview of Java, Installation, First Simple Program, Compilation process , Java Keywords , Identifiers , Literals, Comments, Data Types, Variables, Dynamic initialization, type conversion and casting, Operators, Control Statements.

Unit II-Declaring Objects, Introducing Methods, Constructors, this Keyword, Garbage Collection, finalize Method, Overloading Methods, Overloading Constructors, Using Objects as Parameters, Inheritance, Creating a Multilevel Hierarchy, Packages and Interfaces, Exception Handling, Multithreaded

Unit III-The Applet Class: Applet Basics, The Applet Class, Applet Architecture, Applet Initialization and Termination , Simple Applet Display Methods, Simple Banner Applet, Using the Status Window, The HTML APPLET Tag, Passing Parameters to Applets, Improving the Banner Applet.

Unit IV-Introducing the AWT: Working with Windows, Graphics, and Text, AWT Classes, Window Fundamentals, Component, Container, Panel, Frame, Working with Frame Windows, Handling Events in a Frame Window, AWT Controls, Layout Managers, and Menus, Adding and Removing Controls, Grid Layout, Border Layout, introduction to swing and servlet.

Unit V-Event Handling, Two Event Handling Mechanisms, The Delegation Event Model, Events, Event Sources, Event Listeners, Event Classes, The Mouse Event Class and others, JDBC: JDBCODBC bridge, the connectivity model, the driver manager, navigating the result set object contents, the JDBC exceptional classes, connecting to remote database.

Course Outcomes:

On the completion of this course students will be able to understand:

1. The concepts of Java programming
2. The basic terminology used in computer programming and write, compile and debug programs in JAVA language.
3. The different data types, decision structures, loops, functions to design Java programs.
4. Develop program using the java collection API as well as the java standard class library.
5. Develop Java applets

Reference Books:

1. E. Balagurusamy, “Programming with Java A Primer”, McGrawHill.
2. Sharanam Shah, “Core Java 8 for Beginners”, Shroff Publisher.
3. Naughton & Schildt, “The Complete Reference Java 2”, Tata McGraw Hill.
4. Horstmann & Cornell, “Core Java 2” (Vol I & II), Pearson.

List of Experiments:

1. Write a program that accepts two numbers from the user and print their sum.
2. Write a program to calculate addition of two number using prototyping of methods.
3. Program to demonstrate function overloading for calculation of average.
4. Program to demonstrating overloaded constructor for calculating box volume.
5. Program to show the detail of students using concept of inheritance.
6. Program to demonstrate package concept.
7. Program to demonstrate implementation of an interface which contains two methods declaration square and cube.
8. Program to demonstrate exception handling in case of division by zero error.
9. Program to demonstrate multithreading.
10. Program to demonstrate JDBC concept using create a GUI based application for student information.
11. Program to display “Hello World” in web browser using applet.
12. Program to add user controls to applets.
13. Write a program to create an application using concept of swing.
14. Program to demonstrate student registration functionality using servlets with session management.