

JAVA PROGRAMMING LAB (Common to CSE,IT & ECE)

II B. Tech. - II Semester
Course Code: A3CS15

L T P C
- - 3 2

LABORATORY OVERVIEW:

A Java Programming lab manual is intended to provide a basic knowledge of java programming for students. To develop software development skills in java programming and Students will have the proficiency to develop projects in java programming. The course helps the students to solve the inter disciplinary applications through java programming.

COURSE OBJECTIVES:

1. To teach fundamentals of object oriented programming in Java. Understand various concepts of JAVA.
2. To familiarize Java environment to create, debug and run simple Java programs.
3. To demonstrate java compiler and eclipse platform and learn how to use Net Beans IDE to create Java Application.

COURSE OUTCOMES:

At the end of the course students will be able to:

1. Implement Object oriented features using Java
2. Apply the concept of polymorphism and inheritance.
3. Implement exception handling
4. Develop network and window application using awt and swings.

SYLLABUS

WEEK 1

- a) Write a Java program that prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. If the discriminate $b^2 - 4ac$ is negative, display a message stating that there are no real solutions.
- b) The Fibonacci sequence is defined by the following rule: The first two values in the sequence are 1 and 1. Every subsequent value is the sum of the two values preceding it. Write a Java program that uses both recursive and non recursive functions to print the nth value in the Fibonacci sequence.

WEEK 2

- a) Write a Java program that prompts the user for an integer and then prints out all prime numbers up to that integer. (use Scanner class to read input)
- b) Write a Java program to multiply two given matrices.
- c) Write a Java Program that reads a line of integers, and then displays each integer, and the sum of all the integers (Use String Tokenizer class of java.util)

WEEK 3

- a) Write a Java program that checks whether a given string is a palindrome or not. Ex: MADAM is a palindrome.
- b) Write a Java program for sorting list of names. Read input from command line.
- c) Write a Java program to make frequency count of words in a given text.

WEEK 4

- a) Write a Java program to create a Student class with following fields
 - i. Hall ticket number
 - ii. Student Name
 - iii. DepartmentCreate 'n' number of Student objects where 'n' value is passed as input to constructor.
- b) Write a Java program to demonstrate String comparison using == and equals method.

WEEK 5

- a) Write a java program to create an abstract class named Shape that contains an empty method named number Of Sides (). Provide three classes named Trapezoid, Triangle and Hexagon such that each one of the classes extends the class Shape. Each one of the classes contains only the method number Of Sides () that shows the number of sides in the given geometrical figures.
- b) Suppose that a table named Table.txt is stored in a text file. The first line in the file is the header, and the remaining lines correspond to rows in the table. The elements are separated by commas. Write a java program to display the table using JTable component.

WEEK 6

- a) Write a Java program to read copy content of one file to other by handling all file related exceptions.

WEEK 7

- a) Write a Java program that reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.
- b) Write a Java program that reads a file and displays the file on the screen, with a line number before each line.
- c) Write a Java program that displays the number of characters, lines and words in a text file.

WEEK 8

- a) Write a Java program that creates three threads. First thread displays "Good Morning" everyone second, the second thread displays "Hello" every two seconds and the third thread displays "Welcome" every three seconds.
- b) Write a Java program that correctly implements producer consumer problem using the concept of inter thread communication.

WEEK 9

- a) Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -, *, % operations. Add a text field to display the result.

WEEK 10

- a. Write a Java program for handling mouse events.
- b. Write a Java program for handling key events using Adapter classes

WEEK 11

- a) Write a java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green. When a radio button is selected, the light is turned on, and only one light can be on at a time No light is on when the program starts.
- b) Write a Java program that allows the user to draw lines, rectangles and ovals.

WEEK 12

- a) Develop simple calculator using Swings.
- b) Develop an applet that displays a simple message in center of the screen