

SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES

I MCA - II Semester

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16MCA124 OBJECT ORIENTED PROGRAMMING THROUGH JAVA LAB

Course Objectives:

- To Practice Basic Java Programs
- To Illustrate Class, Object Concepts
- To Illustrate Inheritance, Interface, packages, Abstract Classes Concept
- To Handle Exceptions and Events
- To Develop Applets

Syllabus:

- 1) Write a Java program
 - a) To Find Sum of N Numbers
 - b) To Find Product of N Numbers
 - c) To Print Even Numbers and Odd Numbers from 1 to N
- 2) Write a Java Program to Print sum of Individual Numbers in a Given Number
- 3) Write a Java Program to Print Armstrong Numbers from 1 to 1000
- 4) Write a Java Program to Print whether a given number is Super Number or not.
- 5) Write a Java program that prints all real solutions to the Quadratic Equation $Ax^2 + Bx + C = 0$. Read 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.
- 6) Write a java program that uses both recursive and non-recursive methods.
 - a) To find the factorial of a given number.
 - b) To compute Ncr.
- 7) The Fibonacci sequence is defined by the following rule : The first two values in the sequence are one and one. 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.
- 8) Write a java program that prompts the user for an integer and then prints out all the prime numbers up to that integer.
- 9) Write a Java program to find both the largest and smallest number in a list of integers.

- 10) Write a Java Program to sort list of Numbers in both ascending Order and Descending Order
- 11) Write a Java program to perform
 - a) Addition of two Matrices
 - b) Subtraction of two Matrices
 - c) Multiplication of two Matrices
- 12) Write a Java program to perform the following operations:
 - a) Concatenation of two Strings.
 - b) Comparison of two Strings.
- 13) Write a Java program that uses functions to perform the following operations:
 - a) Inserting a sub-string in to the given main string from a given position.
 - b) Deleting n characters from a given position in a given string.
- 14) Write a Java program that checks whether a given string is a palindrome or not.
- 15) Write a Java program to make frequency count of words in a given text.
- 16) Write a Java Program to sort set of Names in both ascending Order and Descending Order.
- 17) Write a Java Program to Perform
 - a) Linear Search
 - b) Binary Search
- 18) Write a Java Program to Illustrate
 - a) Constructor OverLoading
 - b) Method OverLoading
- 19) Write a Java Program to Illustrate
 - a) Single Inheritance
 - b) Hierarchical Inheritance
 - c) MultiLevel Inheritance
- 20) Write a Java Program to Illustrate
 - a) Interfaces
 - b) Abstract Class
- 21) Write a Java Program to Illustrate Method Overriding concept
- 22) Write a Java program that illustrates the following
 - a) Creation of simple package.
 - b) Accessing a Package
- 23) Write a Java programs that illustrates the following

- a) Handling predefined Exceptions.
 - b) Handling User Defined Exceptions .
- 24) Write a Java program that creates a user interface to perform integer divisions. the user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the result field when the divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a number format exception. If Num2 were Zero, the program would throw an Arithmetic Exception display the exception in a message dialog box.
- 25) Write a Java Program for Creating Multiple Threads
- a) By Extending Thread Class
 - b) By Implementing Runnable Interfaces
- 26) Write a Java program that correctly implements producer consumer problem using the concept of Inter Thread Communication.
- 27) Write a Java Program to Illustrate the Following Collection Classes
- a) Stack
 - b) HashSet
 - c) LinkedList
 - d) Vector
- 28) Develop an Applet in Java that displays a simple message.
- 29) Develop an Applet to Illustrate
- a) Graphics Class Methods
 - b) Color Class Methods
 - c) Font Class Methods
- 30) Develop an Applet to Illustrate Different Layouts
- 31) Develop an Applet in Java that receives an integer in one text field, and computes its factorial value and returns it in another text field, when the button named “compute” is clicked.
- 32) 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.
- 33) Write a Java program for handling
- a) Mouse Events
 - b) Keyboard Events.

Course Outcomes:

- Write and Execute Basic Java Programs
- Write and Execute Various Inheritance Programs
- Create and access their own Packages
- Handling Predefined and User defined Exceptions
- Develop an own Applet

TEXT BOOKS :

1. Java: How to Program, 5/e, 2005, P.J.Deitel and H.M.Deitel , Low Price Edition-India.
2. Core Java- Volume 1-Fundamentals, 8/e, 2012, Cay S.Horstmann and Gary Cornell- Pearson Education, New Delhi.
3. Core Java- Volume2-Advanced Features, 8/e, 2012, Cay.S. Horstmann and Gary Cornell, Pearson Education, New Delhi.
4. Introduction to Java Programming, 6/e, 2006, Y. Daniel Liang, Pearson Education, New Delhi.
5. Java: „The Complete Reference” , 7/e , 2008, Herbert schildt ,Tata McGraw Hill- New Delhi.

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