



## INDEX

### Programming in Java Laboratory

Name: \_\_\_\_\_ Enrollment number: \_\_\_\_\_

Sr. no	Date	Title	Page no	Grade	Signature
1		Use Cramer's rule to solve the following 2 X 2 system of linear equations for $x$ and $y$ : $ax + by = e$ $x = (ed - bf)/(ad - bc)$ $cx + dy = f$ $y = (af - ec)/(ad - bc)$ Write a Java program that prompts the user to enter the constants <b>a, b, c, d, e,</b> and <b>f</b> and the display the solution ( $x = ??$ and $y = ??$ ). If $ad - bc$ is 0, then your program prints "The equation has no solution". Note: (1) $3.4x + 50.2y = 44.5$ (2) $2.1x + .55y = 5.9$			
2		Body Mass Index (BMI) is a measure of health on weight. It can be calculated by taking your weight in kilograms and dividing by the square of your height in meters. Write a program that prompts the user to enter a weight in pounds and height in inches and displays the BMI. Note:- 1 pound=.45359237 Kg and 1 inch=.0254 meters			
3		Write a program that reads a number in meters, converts it to feet, and displays the result.			
4		Write a program to check the given number is Prime or not			
5		Write a program that prompts the user to enter three integers and display the maximum number among these numbers.			
6		Write a program that prompts the user to enter a letter and check whether a letter is a vowel or consonant.			
7		Write a program to find length of string and print second half of the string			
8		Write a program to count the number of words that start with capital letters			
9		Write a program to find that given number or string is palindrome or not			
10		Write an interactive program to print a string entered in a pyramid. For instance, the string "stream" has to be displayed as follows:			



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11		Write a program that creates a Random object and displays the first 100 random integers between 1 and 49 using NextInt(49) methods.			
12		Assume a vehicle plate number consists of three uppercase letters followed by four digits. Write a program to generate a plate number.			
13		Write a program that prompts the user to enter a decimal number and displays the number in a fraction. Hint: Read the decimal number as a string, extract the integer part and fractional part from the string			
14		Write a program that reads an integer and displays all its smallest factors in increasing order. For example if input number is 120, the output should be as follows:2,2,2,3,5.			
15		Write a method with following method header. public static int gcd(int num1, int num2)Write a program that prompts the user to enter two integers and compute the gcd of two integers			
16		Write a test program that prompts the user to enter ten numbers, invoke a method to reverse the numbers, display the numbers.			
17		Write a program that generate 6*6 two-dimensional matrix, filled with 0's and 1's , display the matrix, check every raw and column have an odd number's of 1's.			
18		Write a program to sort the elements from given array of integer. Specify size of array and elements of array from command line argument.			
19		Write a program to do the addition of two matrices			
20		Write a program to implement the operation of stack using array			
21		Write an application that declares a class named Person. It should have instance variables to record name, age & salary. Use the new operator to create a Person object. Set & display its instance variables.			
22		Write a program of constructor overloading and make zero argument constructor to set a default values of student name, roll no and total marks.			



		And make another constructor with all the three parameters and make use of 'this' keyword. Using methods, display values of both the constructors.			
23		Write a program that defines a Circle class with two constructors. The first form accepts a double value that represents the radius of the circle. The second form accepts the integer radius of the circle and calculates the area of the circle.			
24		Write a program to create a class called Employee, having instance variables like name, age, salary and empno. Initialize all the instance members using constructor and empno should be auto generated by the program. Create an array of objects to define 10 Employees.			
25		Write a program to create a class called Teaching having one member nameOfSubject and another class called NonTeaching having member typeOfWork. Both the classes extend the Employee class. Provide information of two Teaching and two NonTeaching employees. Print all the information of employee by the given empNo.			
26		Create a class Vehicle, which has single variable NoOfWheels. Develop two subclasses, TwoWheeler and FourWheeler. Develop subclasses of these 2 subclasses. Create instances of these classes and print appropriate details. (use super keyword).			
27		Write a program that declares an abstract class A with an abstract method display( ). Provide subclasses A1 & A2 that each implements this method. Create instance of these subclasses & invoke that method.			
28		Write a program using interface inheritance. Make two interfaces one is Shape2D which contains a method to calculate the area of the circle and the second interface Shape3D which contains method to calculate the volume of the sphere. Both the classes, Circle and Sphere extends one abstract class Shape which contains a method display( ) to display the area and volume.			
29		Make a package called "MyPack" in which declare one class called "PackDemo" which displays the string from three different classes of that same package.			



30		Write a program to generate customized exception named ArgumentGreaterThanOne if there is more than one argument in command line.			
21		Write the bin2Dec (string binary String) method to convert a binary string into a decimal number. Implement the bin2Dec method to throw a NumberFormatException if the string is not a binary string.			
32		Write a program to generate customized exception named ArgumentGreaterThanOne if there is more than one argument in command line.			
33		Write a program to implement linked list using collection class			
34		Write a program that creates an Array List and adds a Loan object , a Date object , a string, and a Circle object to the list, and use a loop to display all elements in the list by invoking the object's toString() method.			
35		Write an Application that executes two threads. One displays "Hello" at every 1000 millisec. & Second displays "World" at every 3000 milliseconds. Create the threads by extending the Thread class.			
36		Write a program to list all the files in the given directory, and list all the file attributes			
37		Write a program to copy the content of one file to another file			
38		Write a program that creates a button and generate a click event to display."Welcome to JavaFx ".			
39		Write a program to create a checkbox to choose one option among the given choices			
40		Write a program that displays the color of a circle as red when the mouse button is pressed and as blue when the mouse button is released.			