

JAVA PROGRAMMING LAB ASSIGNMENT
DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY
K G Engineering Institute, Bishnupur, Bankura

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1. Write a program to print all the prime numbers between n and m numbers.
2. Write a program to find the sum of Even numbers and the sum of Odd numbers in the given array.
3. Write a program to find whether a given string is a palindrome or not.
4. Write a program to read two integers using command line arguments and find their maximum.
5. Write a program using *while* loop to reverse the digits of the number.
6. Write a class circle which consists two methods `getData()` and `calArea()`, and also write a main program to create a circle object and to find the area by calling the method `calArea()` in circle class and display the result.
7. Define a class Employee having members-id (private data member), name, department, salary. Define default and parameterized constructors. Create a subclass called "Manager" with private member bonus. Define methods accept and display in both the classes. Create an objects of the Manager class and display the details of the manager having the maximum total salary (salary+bonus)
8. Write a class Box with the variable width, depth and height and constructor to assigning the values for these variables and a method to find the volume of the box and also write the main program, which creates the box object, and find the volume of the box.
9. Write a program to demonstrate the method overloading for `sum()` method.
10. Create another class student, which has `stdid`, `stdname`, `stddob` and marks of 3 subjects as member. Write appropriate constructor for the student which assigns values to the members. Accept the details as command line arguments and create a student object using the arguments. Display the student details in proper format.
11. Create an abstract class Shape with methods `calArea()` and `calVol()`. Derive four classes Sphere(radius), Cone(radius, height), Cylinder(radius, height) and Box(length, breadth, height) from it. Calculate the area and volume for all. (Use Method overriding)
12. Write a program how method overriding can be prevented?
13. Write a program for initializing base class constructor from derive class constructor.
14. Create an abstract method called `getArea()` that calculates and returns the area of a shape as a double.
15. Write a program to create a thread by extending the thread class. Create a class Student with attributes rollno, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user-defined exception "AgeNotWithinRangeException". If name contains numbers or special symbols raise exception "NameNotValidException". Define the two exception classes.
16. Define a class **CricketPlayer** (name, no_of_innings, no_times_notout, total_runs, bat_avg). Create an array of n player objects. Calculate the batting average for each player using as static method "**bat_avg()**". Define a static method "**sort_Player()**" which sorts the array on the basis of average. Display the player details in sorted order.
17. Create a package named "**Maths**". Define class MathOperations with static methods to find the maximum and minimum of three numbers. Create another package "**Stats**". Define class "**StatOperations**" with the methods to find the average of three numbers. Use these methods in main to perform operations on three integers accepted using command line arguments.
18. Write a program to create a super class "**Vehicle**" having members as company and price. Derive 2 different classes "**LightMotorVehicle**" (mileage as float) and "**HeavyMotorVehicle**" (member data as capacity_in_tons as integer). Accept the information for n vehicles and display the information in appropriate form. While taking data, ask the user about the type of vehicle first.
19. Given a string, return a new string where the last 3 chars are now in upper case. If the string has less than 3 chars, uppercase whatever is there.
20. Write a program to find the vowel of a inputed string and generate the substring using the vowel you have inserted.
21. Create two threads and show both threads are running simultaneously.
22. Write a program for showing an exception for "**NegativeNumberException**". i.e. the inputed number is negative or not.
23. Define a class which contains method "**DisplayColor**" which takes one character as argument. Raise as error if the character in not an alphabet. If the alphabet is color of the rainbow, display the color name. if it is any other alphabet, report an error.
24. Write a program to count occurrences of a string with in a text file.
25. Write a program to display the contents of a file in the reverse order.
26. Write a simple applet program to draw different shapes (Line, rectangle, oval, polygon, rounded rectangle etc.) in applet.
27. Write a code for passing arguments to an applet.
28. Create an applet with Labels (One, Two & Three), Buttons (Yes, No, Undecided) when user click any button show message regarding user click, add Checkboxes(Windows 98/XP, Windows NT/2000) when user chose any checkbox show message regarding user choice & add text boxes (name, password) and text on these textboxes should be displayed on Applet.
29. Write a program for connecting with the Oracle database with insert, delete, update and select record from the database.