University of Engineering & Management, Kolkata

Course: B.Tech. CSE / CSE (AIML) / CSE (IOT-CYS-BCT) / CSBS

Semester: 6th

Paper Name: Object Oriented Programming using JAVA Laboratory

Paper Code: PCCCSE693

Assignment List

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Assignment No 1

1. Write a Java Program to Print "HELLO JAVA".
2. Write a Java Program to add two numbers by declaring variables value.
3. Write a Java Program to calculate factorial value of a declared variable.
4. Write a Java Program to calculate factorial value of a declared variable by creating separate method for factorial segment.
5. Write a Java Program to calculate factorial value of a declared variable by creating separate class and method for factorial segment.
6. Write a Java Program to calculate factorial value of a variable by taking input from command line.
7. Write a Java Program to display whether a number is odd or even
8. Write a Java program to find maximum of three numbers.
9. Write a Java program to swap two numbers.
10. Write a Java program to check whether a year is leap year or not.
11. Write a Java program for following grading system.

    Note: Percentage>=90% : Grade A

    Percentage>=80% : Grade B

    Percentage>=70% : Grade C

    Percentage>=60% : Grade D

    Percentage>=40% : Grade E

    Percentage<40% : Grade F
12. Write a Java program to check whether a number is divisible by 5 or not.

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Assignment No 2

1. Write a java program to create a simple array and access array element.
2. Write a java program to create 2D array and access the array element.
3. Write a Java program to find the sum of even numbers in an integer array.
4. Write a Java program to calculate Sum of two 2-dimensional arrays.
5. Write a Java program to find the sum of diagonal elements in a 2D array.
6. Write a Java program to multiply two matrices.
7. Implementation of default, no argument Constructor.
8. Implementation of parameterized constructor.
9. Implementation of returning the value from the caller method.
10. Implementation of call by value and call by reference.

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Assignment No 3

1. Write a java program to implement BufferedReader class.
2. Write a java program to take input from keyboard using Scanner class.
3. Write a Java program to reverse a number.
4. Write a Java program to check whether a number is palindrome or not.
5. Write a Java program to check whether a number is prime or not.
6. Write a Java program to convert a Binary Number to Decimal and Decimal to Binary.
7. Write a Java program to check whether a given number is Armstrong Number or not.
8. Write a Java program to calculate the sum of natural numbers up to a certain range
9. Write java codes to implement the followings –

   Basic string handling concepts- Concept of mutable and immutable string, Methods of String class-charAt(), compareTo(), equals(), equalsIgnoreCase(), indexOf(), length() , substring().; toCharArray(), toLowerCase(), toString(), toUpperCase() , trim() , valueOf() methods,
10. Write java codes to implement the followings –

    Methods of Stringbuffer class: append(), capacity(), charAt(), delete(), deleteCharAt().; ensureCapacity(), getChars(), indexOf(), insert(), length(), setCharAt(), setLength(), substring(), toString().

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Assignment No 4

1. Implementation of method overloading with respect to parameter number, parameter data type.
2. Write a java program to implement of constructor overloading.
3. Implementation of this keyword to invoke current class method.
4. Implementation of this keyword to invoke current class constructor.
5. Implementation of this keyword to pass as an argument in the method.
6. Implementation of this keyword to pass as argument in the constructor call.
7. Implement - this keyword can be used to return current class instance.
8. Prove that this keyword refers to the current class instance variable.
9. Implementation of this keyword as local variable suppressor.
10. Create a general class ThreeDObject and derive the classes Box, Cube, Cylinder and Cone from it. The class ThreeDObject has methods wholeSurfaceArea ( ) and volume ( ). Override these two methods in each of the derived classes to calculate the volume and whole surface area of each type of three-dimensional objects. The dimensions of the objects are to be taken from the users and passed through the respective constructors of each derived class. Write a main method to test these classes.

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Assignment No 5

1. Write a java program to implement the static keyword in java.
2. Write a java program to implement the static method in java.
3. Write a java program to implement the single inheritance in java.
4. Write a java program to implement the hierarchical inheritance in java.
5. Write a java program to implement the multilevel inheritance in java.
6. Multiple inheritance does not support in java – justify.
7. Implementation of method overriding in java.
8. Implementation of dynamic method dispatch in java.
9. Write a java program to stop method overriding.
10. Create a "circle" class & a "point" class. The coordinates of the circle are given and used within the "circle" class as object of the "point" class. Display the area of circle
11. Write a program to define a class Employee to accept emp_id, emp _name, basic_salary from the user and display the gross_salary.
12. Write a program to define a class Fraction having data members numerator and denominator. Initialize three objects using different constructors and display its fractional value.
13. Write a program to define a class Item containing code and price. Accept this data for five objects using array of objects. Display code, price in tabular form and also, display total price of all items.

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Assignment No 6

1. Write a java program to implement the abstraction property.
2. Write a java program to implement interface.
3. Write a java program to implement multi level inheritance with the help of interface.
4. Write a java program to implement the inheritance in interface.
5. Write a java program to implement multiple inheritance using interface.
6. Write a java program to implement super keyword in java.
7. Write a java program to implement super() method without parameter.
8. Write a java program to implement super() method with parameter.
9. Create an interface called Player. The interface has an abstract method called play() that displays a message describing the meaning of "play" to the class. Create classes called Child, Musician, and Actor that all implement Player. Create an application that demonstrates the use of the classes(UsePlayer.java
10. Create an abstract class Accounts with the following details:
    Data Members: Balance (b) accountNumber (c) accountHoldersName (d) address
    Methods: withdrawl()- abstract , (b) deposit()- abstract , (c) display() to show the balance of the account number
    Create a subclass of this class SavingsAccount and add the following details:
    Data Members: (a) rateOfInterest
    Methods: (a) calculateAount()

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Assignment No 7

1. Implementation of final keyword before a variable.
2. Implementation of final keyword before a method.
3. Implementation of final keyword before a class.
4. Write a java program to create package.
5. Write a java program to create a subpackage.
6. Write a java program to access the methods from package.
7. Write a java program to access the methods from package & subpackage both.
8. Write a java program to observe the utility of public access specifier.

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Assignment No 8

1. Exception CASE-1: Problem without exception handling
2. Exception CASE-2: Exception creates but properly handled
3. Exception CASE-3: Exception creates but not handled
4. Write a java program to implement Java Multi catch block
5. Write a java program to implement Java Nested try statement
6. Write a java program to implement the throw keyword.
7. Write a java program to implement the throws keyword.
8. Finally CASE – 1 : Case 1: finally example where exception doesn't occur.

   Case 2: finally example where exception occurs and not handled.

   Case 3: finally example where exception occurs and handled.

9. Create a user-defined exception named CheckArgument to check the number of arguments passed through the command line. If the number of argument is less than 5, throw the CheckArgumentexception,else print the addition of all the five numbers.

10. Consider a Student examination database system that prints the mark sheet of students. Input the following from the command line.
    (a) Student's Name
    (b) Marks in six subjects

    These marks should be between 0 to 50. If the marks are not in the specified range, raise a RangeException, else find the total marks and prints the percentage of the students.

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Assignment No 9

1. Write a java program to create Thread by extending the Thread class.
2. Write a java program to create Thread by implementing the Runnable interface.
3. Write a java program to implement the yield( ) method in thread programming.
4. Write a java program to implement the sleep(n) method in thread programming.
5. Write a java program to implement the suspend( ) & resume( ) method in thread programming.
6. Write a java program to implement the sleep(n) method in thread programming.
7. Create 4 threads with priority 1,3,5,7 respectively. Update a counter in each of the threads for 10 ms. Print the final value of count for each thread.
8. Write a Java Program to Synchronize the Threads Acting on the Same Object. The Synchronized Block in the Program can be Executed by Only One Thread at a Time.
9. Write a Java Program to Check a Thread is Alive or Not.
10. Write a Java Program to Get the Name of a Running Thread.

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Assignment No 10

1. Write a java program to implement the concept of Applet.
2. Write a java program to implement the parameter passing applet.
3. Write a java program to implement JButton Class.
4. Write a java program to implement JTextField Class.
5. Write a java program to implement JPanel Class.
6. Write a java program to implement JMenu Class.
7. Write a java program to implement Chat Frame comprising JFrame, JMenuBar, JMenu, JMenuItem, JPanel, JLabel, JTextField, JButton etc.