Programming Problems

Q1. Write a program to create a class named shape. In this class, we have three sub-classes circle, triangle, and square each class has two member functions named draw () and erase (). Create these using polymorphism concepts.

Q2. Write a program to create automatic type conversions that apply to overriding.

Q3. Create a class box and box3d. box3d is an extended class of boxes. The above two classes going to fulfill the following requirement

- Include constructor.
- set value of length, breadth, height
- Find out the area and volume.

Note: Base class and sub-classes have respective methods and instance variables.

Q4. Write a program to accept a specified number of characters as input and convert them into uppercase characters.

Q5. Write a program to get the input from the user and store it in a file. Using Reader and Writer files.

Q6. Write a Java program to create a class called Shape with a method called getArea(). Create a subclass called Rectangle that overrides the getArea() method to calculate the area of a rectangle.

Q7. Write a Java program that reads a list of integers from the user and throws an exception if any numbers are duplicates.

Q8. Write a Java program to create a banking system with three classes - Bank, Account, SavingsAccount, and CurrentAccount. The bank should have a list of accounts and methods for adding them. Accounts should be an interface with methods to deposit, withdraw, calculate interest, and view balances. SavingsAccount and CurrentAccount should implement the Account interface and have their own unique methods.

Q9. Write a Java program to create a class Shape with methods getArea() and getPerimeter(). Create three subclasses: Circle, Rectangle, and Triangle. Override the getArea() and getPerimeter() methods in each subclass to calculate and return the area and perimeter of the respective shapes.

Q10. Write a Java program to compare two files lexicographically.

According to Wikipedia:

In mathematics, the lexicographic or lexicographical order (also known as lexical order, dictionary order, alphabetical order or lexicographic(al) product) is a generalization of the way the alphabetical order of words is based on the alphabetical order of their component letters. This generalization consists primarily in defining a total order over the sequences (often called words in computer science) of elements of a finite totally ordered set, often called alphabet.