Assignment-3

Topic: Polymorphism and Inheritance.

Objective: The objective of this assignment is to understand the concept of Polymorphism & Inheritance.

1. Write a java program to overload three methods named with addition() having different parameters.

2. Write a java program to overload the constructor named with Addition() having different parameters.

3. Overload the constructors for class Box for cube and cone and also display its volume.

4. [*] Repeat problem 3 for method overloading.

5. Create a class Student containing instance variables roll and name and a parameterized constructor. Create two objects of that class from the main class and print them (Hints: Override toString method of Object class).

6. Create a class EMP having instance variable name and id. Create its subclass (say Scientist) which has instance variable no_of_publication and experience. Now create its subclass, say Dscientist which has an instance variable award. Put a method: public String toString () { } in every class where you describe about the class and from the main create object of each class and print each object.

7. Create a class with a method void show () and make 3 subclasses of it and all subclasses have void show () method overridden and call those methods using their class references.

8. [*] Do the problem 6 using dynamic method dispatching.

9. Ava sitting in the first row wants to send a secret message to her friend Mia who is sitting in the last row. She wrote a secret message on a piece of paper and passed it through to her classmates. Ava has used a substitution cipher technique where every letter is replaced with the 7th alphabet before the letter in the alphabet series. Since Mia already knows the technique she easily got the exact message.

   The encrypted text (input) may have numbers or special characters along with letters. If so, ignore those and convert only the letters. If space occurs between the words of input, it must occur in output also. If no letters, then there is "No hidden message".
   Develop a java application that accepts the secret message to decrypt and print the actual message to the screen.
   Input consists of the encrypted text.
   Sample Input : Enter the encrypted text: Pukph
   Sample Output : Decrypted text: India