

ASSIGNMENT 3

1. A boy has his money deposited \$1000, \$1500 and \$2000 in banks-Bank A, Bank B and Bank C respectively. We have to print the money deposited by him in a particular bank.
Create a class 'Bank' with a method 'getBalance' which returns 0. Make its three subclasses named 'BankA', 'BankB' and 'BankC' with a method with the same name 'getBalance' which returns the amount deposited in that particular bank. Call the method 'getBalance' by the object of each of the three banks.
2. A class has an integer data member 'i' and a method named 'printNum' to print the value of 'i'. Its subclass also has an integer data member 'j' and a method named 'printNum' to print the value of 'j'. Make an object of the subclass and use it to assign a value to 'i' and 'j'. Now call the method 'printNum' by this object.
3. We have to calculate the percentage of marks obtained in three subjects (each out of 100) by student A and in four subjects (each out of 100) by student B. Create an abstract class 'Marks' with an abstract method 'getPercentage'. It is inherited by two other classes 'A' and 'B' each having a method with the same name which returns the percentage of the students. The constructor of student A takes the marks in three subjects as its parameters and the marks in four subjects as its parameters for student B. Create an object for each of the two classes and print the percentage of marks for both the students.
4. Various situations require that pairs of numbers be treated as a unit. For example, each screen coordinate has an x (horizontal) component and a y (vertical) component. Represent such a pair of numbers as a structure called pair that comprises two int member variable. Now, assume you want to be able to store pair variable on a stack. That is, you should be able to place a pair (which contains two integers) on to stack using a single call to a push() function with a structure of type pair as an argument, and retrieve a pair using a single call to a pop() function, which will return a structure of type pair.
First, create a class Stack which having standard push() and pop() methods. From this class derive a new class called PairStack. This new class need contain only two members: the overloaded push() and pop() functions.

5. Create interface Car, Bus with members: speed,distanceTravelled and distance(), speed() respectively.Create a class Vehicle that implements the above 2 interfaces with members: distancetravelled, averagespeed.

Note:-

$\text{distancetravelled} = \text{speed} * \text{distance}$

$\text{averagespeed} = \text{distancetravelled} / \text{speed}$

6. Create a course management system where coordinator can add a course, delete course and students can enrol to the course.(Menu Driven).