

## **APPRENTICESHIP**

### **SET 53 – C++ Programming Language**

#### **(Public Inheritance with Runtime Polymorphism and Private Inheritance)**

1. Write a program to illustrate the pointer to the object
2. Write a program to illustrate the pointer to the Derived class object through typecasting Pointers.
3. Write a program to illustrate the pointer to the Derived class object by without typecasting Pointers.
4. Write a program to inherit a class called Big by a class called GCD. In Big class create a member function called operationOnTwoNos( ) to find the biggest of Two Numbers. In Class GCD create a member function called operationonTwoNos() to find the GCD of Two numbers using runtime polymorphism
5. Write a program to inherit a class called RevereArray by a class called ReverseArrayElements. In Base class create a member function called reverse() to reverse the array elements, Whereas in subclass create a member function called reverse() to reverse each elements of the array using virtual functions.
6. Write a program to inherit the classes called Square, Rectangle, Triangle, and Circle in multi-level manner. Each of the classes are having a member function named findArea() with same signature. And find the area of each shapes through virtual functions.
7. Write a program to inherit the classes called Two, Three, N\_nos in multiple inheritance mode. Each of the classes are having a member function named findBiggest() with same signature. and find the biggest Number through virtual functions.
8. Write a program to Inherit three classes called Complex, Array and Matrix into a class called Addition. Each of the super classes are having a member function called findAddition( ) to find the Addition of two Complex numbers, Addition of the Array elements and addition of matrix elements respectively using virtual functions.

9. Write a program to Inherit 5 classes Like RupeetoDollor, RupeetoYen, RupeetoPound, RupeetoEuro, RupeetoRubel, RupeetoDinar in multi-level manner in a class called Conversion. Each of the class is having a member function called doConversion() to perform respective actions using virtual functions.
10. Write a program to inherit Three classes called Student into a class called Customer. Student class will take data like Regno, Name and percentage and show in a function called operation(). Whereas same named function will be there in Customer class to take input as Account number and balance to display the same.
11. Write a program to find the bigger of two numbers, where one number is inherited from Super class and another belongs to subclass. Both the data members should be private and the member functions that are loading the data should also should be private.
12. Write a program to find the average of 3 integers, where 3 integers are inherited in multi-level manner into the 3<sup>rd</sup> Class. Each class should have one private data member and one private member function to load the data to the private data member.
13. Write a program to calculate the area of triangle using two different classes called Base & Height, where the base of Base class is a private data member and set the value of base using private member function. And height of Height class is a private data member and set the value of height using the private member function. Inherit both the classes into a class called Area to calculate the same in a function called findArea ( ).

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