Department of Computer Science & Engineering

Semester III
OOPs With C++(TCS-307)
Assignment-1

Note:
Date of Assignment: 30 Nov 2022
Date of Submission: 07 Dec 2022   **CO:4**

Q1. Design a class named PersonData with the following member variables:
  FirstName
  LastName
  Address
  City
  State
  Zip
  PhoneNo.

Write the appropriate accessor (getter) and mutator (setter) functions for these member variables. Next, design a class named CustomerData, which is derived from the PersonData class. The CustomerData class should have the following member variables:
  • Customerid
  • MailingList.

Q2. The Customerid variable will be used to hold a integer number for each customer. The MailingList variable should be a bool. It will be set to true if the customer wishes to be on a or false if the customer does not wish to be on a mailing list. Write appropriate Accessor and Mutator functions for these member variables.
  CustomerData class will have the InputCustomerData( ) member function which will Input all the data for customer. DisplayCustomerData( ) member function which will display all the data for customer.
  Demonstrate an object of the CustomerData class in a simple program

2. A retail store has a preferred customer plan where customers may earn discounts on all their purchases. The amount of a customer's discount is determined by the amount of the customer's purchases in the store.
  • When a preferred customer spends 5000, he or she gets a 5% discount on all future purchases.
  • When a preferred customer spends 10,000, he or she gets a 6% discount on all future purchases.
  • When a preferred customer spends 15,000, he or she gets a 7% discount on all future purchases.
  • When a preferred customer spends 20,000 or more, he or she gets a 10% discount on all future purchases.
Design a class named PreferredCustomer, which is derived from the CustomerData class which is having following attributes:
  • FirstName
  • LastName

- Address
- City
- State
- Zip
- PhoneNo.
- Customer_id

The PreferredCustomer class should have the following member variables:
- purchasesAmount (a double)
- discountLevel (a double)

The purchasesAmount variable holds the total of a customer's purchases. The discountLevel variable should be set to the correct discount percentage, according to the store's preferred customer plan. Write appropriate member functions for this class and demonstrate it in a simple program.

Q3. What do you mean by diamond problem in C++ and how you will resolve this problem?

Q4. With the help of a program explain the order of execution of constructor in multiple inheritance.