Programming Project #2 Inheritance (10 points total)

For project #2 we will implement a classic Inheritance hierarchy. A simple console based interface is all that is needed. Build your classes first, each in their own .h and .cpp files, then test them with the simple main method provided below.

Phase 1 :

Here is the following set of classes you will implement and their inheritance relationship:

Account

The generic BASE class Account will serve as the parent class to Checking, Savings and CreditCard.

Variables (private):

name – Name of account owner, a string

taxID – social security number, a long

balance – an amount in dollars, a double

Variables (protected):

last10withdraws – a double array of size 10. The last 10 withdrawal amounts.

last10deposits – a double array of size 10. The last 10 deposit amounts.

numdeposits – number of deposits, an int

numwithdraws – number of withdrawals, an int

Methods:

SetName, SetTaxID, Setbalance() assigns a new value for each with error checking

GetName, GetTaxID, Getbalance() returns a value for each variable.

MakeDeposit(double amount) - adjust the balance and put it in the deposit array

A constructor with no parameters and one with name, taxID and balance parameters

display() a **method** to display the name, taxID and balance

Checking

A specific DERIVED class that represents a bank checking account. It must inherit Account.

Variables (private):

last10checks – an int array of size 10. The last 10 check numbers.

Methods:

WriteCheck(int checknum, double amount) - adjust the balance and list it as a withdraw in the base class

A constructor with no parameters and one with name, taxID
and balance parameters

display() - display the accounts check register (number and amount) and deposit record

Savings

A specific DERIVED class that represents a bank savings account. It must inherit Account.

Methods:

DoWithdraw(double amount) - adjust the balance and list it as a withdraw in the base class

A constructor with no parameters and one with name, taxID
and balance parameters

display() - display the accounts withdrawal and deposit record

CreditCard

A specific DERIVED class that represents a credit card account. It must inherit Account.

Variables:

cardnumber – a long

last10charges – a string array of size 10. The last 10 names of the charges.

Methods:

DoCharge(string name, double amount) - adjust the balance and list it as a withdraw in the base class

MakePayment(double amount) - adjust the balance and list it as a DEPOSIT in the base class

A constructor with no parameters and one with name, taxID
and balance parameters

display() - display the accounts charges (name and amount) and deposit record

Note: all display() methods should use cout to output text to the console.

Write a main() Function

Write a main that creates 3 objects, starts each with a balance of $100. Create a loop that displays the following menu each time through the loop. Make sure the balance is updated each time AND you use the objects to perform the transactions.

```
 Checking balance: $100          Savings balance: $100      Cred
it Card balance: $100


 1. Savings Deposit
 2. Savings withdrawal
 3. Checking Deposit
 4. Write A Check
 5. Credit Card Payment
 6. Make A Charge
 7. Display Savings
 8. Display Checking
 9. Display Credit Card
 0. Exit
```