

# **Lab – Java - Inheritance**

## ***Overview***

Write a class that uses inheritance as part of the solution. This program will store bank account information.

## ***Part 1***

### BankAccount Class (base class)

Write a program that contains a BankAccount class. The BankAccount class should store the following attributes: account name, account balance.

Make sure you use the correct access modifiers for the variables.

Write get/set methods for all attributes.

Write a constructor that takes two parameters.

Write a default constructor.

Write a method called Deposit(double) that adds the passed in amount to the balance.

Write a method called Withdraw(double) that subtracts the passed in amount from the balance. Do not allow a balance < 0.

## ***Part 2***

### InterestAccount Class (derived class)

Derive a new class called InterestAccount from the BankAccount class.

InterestAccount should store the following attributes: interest.

Write get/set methods for all attributes.

Write a constructor that takes three parameters. Make sure to call the base class constructor.

Write a default constructor.

Write a method called ApplyInterest() that will apply the interest amount to the balance (stored in the base class).

Override toString to create a string that has all member variable data.

Inside of main() create one instance of the InterestAccount class. Make sure you call Deposit, Withdraw, ApplyInterest. Finally, print out the values on the instance you created.

## ***Part 3***

### Customer Class

Write a customer class. You should have three attributes. Name (string), Savings (InterestAccount), Checking (InterestAccount).

Write get/set methods for the Name attribute.

Create DepositSavings and WithdrawSavings methods. These methods should deposit and withdraw money from the savings account.

Create DepositChecking and WithdrawChecking methods. These methods should deposit and withdraw money from the checking account.

Create an instance of the Customer class in main. Make sure you set values on that instance. Deposit and withdraw money from both accounts. Print the values of the Customer on standard output.