**CSI-155 OOP**

**Friday, April 27, 2018**

**Lab Assignment-Banking**

Create new windows Forms application.

Add a new Class Library Project (BankLib)

BanKLib project

**Add a class Transaction**. Define the following private fields:

\_amount (that is the transaction amount)

\_type (is it a deposit, a withdrawal, a transferIn, transferOut.

type could be an enum)

\_date (date the transaction took place)

\_description (additional information about the transaction)

Add constructor and properties

**Add an abstract class Account**. Define the following private fields:

\_accountNumber

\_currentBalance

\_bankName

\_transactionsList (to hold a list of transactions on this account)

Add the usual constructor and properties

Add method:

* Deposit(amount), which adds to the currentbalance.
* Withdraw(amount) method should be abstract.

Child classes should treat the withdraw method as:

Withdraw(amount), which takes away from currentbalance

(make sure that there is enough funds to allow the transaction

* TransferTo(Account toOther, amount), which transfers amount from

this account To the other account

**In all three methods you need to create a transaction object that fits the type of transaction requested and add it to the transaction list**

**Add a class CheckingAccount that inherits from Account**

This class should have an additional field \_minimumBalance

And an additional field \_fees (penalty to pay for allowing currentbalance to

Go below minimumbalance).

So the Withdraw method should deduct some fees when the account balance

Drops below the minimumbalance.

**Add a class SavingsAccount that inherits from Account**

This class should have an additional field: \_interest (in percent. That is the

Percent interest your account earn every year)

Define an additional method: ApplyInterest(), which increases the

currentBalance by the percent \_interest.

This account should not deduct fees, there is no minimumbalance

Build the library, making sure it compiles without errors.

**In Form1**

Create a List of Accounts

**In Form1\_Load**

Add at least 5 checking accounts, and 5 savings accounts

To each account perform at least 3 deposits, 3 withdraws, and 2 transfers. This will allow transactions to be created for each account.

Define a method that takes and accountnumber and returns the Account object or null if not found.

Define a method Display that takes a List of accounts and displays them to a listview

Add code so that when a user select a row in the listview, its transactions are displayed in a second listview.

Add gui to allow user to deposit, or withraw amount to/from selected account, reflect the changes in the listview

Add gui to allow user to transfer funds between 2 accounts.