**CMPSC 221 Lab 3 Report**

**Date:September 12, 2012**

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**Code:**

**Source code for the random number histogram:**

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\* Name: Erik Arfvidson

\* Section: Program:

\* Lab 4

\* Date: 9/8/2012

\*\*/

**public** **class** BankAccount {

**private** String name;

**private** **double** balance;

**private** String accountType; // The account type either checking or savings

**public** BankAccount()// Default

{

**this**(" ", 0.0, "checking");

}

**public** BankAccount(String type)// Set type of account

{

**this**(" ", 0.0, "type");

}

**public** BankAccount(**double** amount)// set an amount of money to the type

{

**this**(" ", amount, "checking");

}

**public** BankAccount(String name, **double** balance, String accountType)// Bank account created with the name,balance, accountType

{

**this**.name = name;

**if** (balance > 0) {

**this**.balance = balance;

} **else** {

balance = 0.0;

}

**this**.accountType = accountType;

}

**public** Boolean Withdraw(**double** amount)// Withdraw money from the bank account

{

**if** (amount <= balance) {

**this**.balance = balance - amount;

**return** **true**;

}

**else** {

**return** **false**;

}

}

**public** **double** GetBalance() // returns from the account

{

**return** balance;

}

**public** String GetType()

// returns type of accounts

{

**return** accountType;

}

**public** **void** DisplayBalance() // Display account balance

{

System.*out*.printf("Your balance is currently $%.2f\n", balance);

}

**public** String toString()// returns the account information to string

{

String info;

info = "\nname: " + **this**.name;

info += "\nYour BankAccount's type is: " + **this**.accountType;

info += "\nYour balance is currently: " + **this**.balance;

**return** info;

}

**public** **static** **void** main(String[] args) {

// the BankAccount to the test the program

BankAccount John;

// 1:test constructors

John = **new** BankAccount("Erik", 100, "Saving");

System.*out*.println(John.toString());

// Test the default constructor

John = **new** BankAccount();

System.*out*.println(John.toString());

John = **new** BankAccount(100);

System.*out*.println(John.toString());

John = **new** BankAccount("saving");

System.*out*.println(John.toString());

// 2.Test the access

John = **new** BankAccount("saving");

System.*out*.println("\nThis BankAccount is a " + John.GetType()+ " account");

System.*out*.println("Now change the bank account to checking");

John = **new** BankAccount("checking");

System.*out*.println("This BankAccout is a " + John.GetType()+ " account\n");

// Part3: test the withdraw

John = **new** BankAccount(100);

// test withdraw for 3 times. 2 succesful withdrawl ut fails at the third try it fails

**for** (**int** i = 0; i < 3; i++) {

System.*out*.println("Now try to withdraw $50. ");

**if** (John.Withdraw(50)) {

System.*out*.println("Withdraw successfully. ");

John.DisplayBalance();

} **else** {

System.*out*.println("Unable to withdraw, insufficient funds");

}

}

}

}

**Sample Runs**

name: Erik

Your BankAccount's type is: Saving

Your balance is currently: 100.0

name:

Your BankAccount's type is: checking

Your balance is currently: 0.0

name:

Your BankAccount's type is: checking

Your balance is currently: 100.0

This BankAccount is a type account

Now change the bank account to checking

This BankAccout is a type account

Now try to withdraw $50.

Withdraw successfully.

Your balance is currently $50.00

Now try to withdraw $50.

Withdraw successfully.

Your balance is currently $0.00

Now try to withdraw $50.

Unable to withdraw, insufficient funds

**Discussion**

This was a straightforward assignment. I learned how to create a constructor and how to call it.