#### Programming Fundamentals Assignment #1

### THE PERSONAL ATM

Write a Java program which simulates a personal ATM. Your personal ATM should begin by presenting the following menu of options to the user upon start-up.

```
ATM Menu
B - Display Current Balance
D - Deposit
I - Add Monthly Interest
T - Display Number of Transactions
W - Withdrawal
L - Logout
Select >
```

#### Fig 1. The ATM Menu

## **About the Options**

#### B - Display Current Balance

This option displays the current balance which starts out at \$0.00. When displaying the current balance, format the dollar amount to look like money, i.e., \$100.00 (use the showAsDollars() method provided to accomplish this)

#### D - Deposit

This option requires that you build a static method called, deposit. The deposit method will be called numerous times during the program.

static public double deposit(double amount, double currentBalance)

#### I - Add Monthly Interest

This option requires that you build a static method called, addInterest(). The user can run this option once a month to deposit 1% to the current balance. Note: no interest is deposited if the balance is under \$0.00.

static public double addInterest(double currentBalance)

#### T - Display Number of Transactions

This option displays the number of transactions which have taken place. Include all of the deposits and withdrawals.

#### W - Withdrawal

This option requires that you build a static method called, withdrawal. The withdrawal method allow an amount to be withdrawn from the account if and only if the currentBalance has enough funds to cover the withdrawal.

static public double withdrawal(double amount, double currentBalance)

L - Logout

This option terminates the program.

## Good Practice Guideline(s)

1. Static methods like deposit(), withdrawal(), and addInterest() should not output to the console. All outputting should be done by the main program. This practice allows the methods to be re-usable in other programs.

# Sample Session

🖪 Blue/: Terminal Window - ATM	ATM Menu	ATM Menu
Ortions	B - Display Current Balance	B - Display Current Balance
Options	D - Deposit	D - Deposit
	I - Add Monthly Interest	I - Add Monthly Interest
ATM Menu	T - Display Number of Transactions	T - Display Number of Transactions
B - Display Current Balance	W - Withdrawal	W - Withdrawal
D - Deposit		L - Logout
I - Add Monthly Interest	L - Logout	Select > i
T - Display Number of Transactions	Select > w	You've selected > I
W - Withdrawal	You've selected > W	Interest of \$1.00 was added.
L - Logout		Threfest of \$1.00 was added.
Select > b	How much are you withdrawing > 0.50	
You've selected > B	Your withdrawal of \$0.50 was successful.	
		ATM Menu
Your balance is: \$0.00		B - Display Current Balance
		D - Deposit
	ATM Menu	I - Add Monthly Interest
	B - Display Current Balance	T - Display Number of Transactions
ATM Menu	D - Deposit	W - Withdrawal
B - Display Current Balance	I - Add Monthly Interest	L - Logout Select > b
D - Deposit	T - Display Number of Transactions	You've selected > B
I - Add Monthly Interest	W - Withdrawal	
T - Display Number of Transactions	L - Logout	Your balance is: \$101.00
W - Withdrawal	Select > b	
L - Logout	You've selected > B	
Select > d		
You've selected > D	Your balance is: \$100.50	ATM Menu
		B - Display Current Balance
How much are you depositing > 100		D - Deposit
, , ,		I - Add Monthly Interest T - Display Number of Transactions
ATM Menu	ATM Menu	W - Withdrawal
B - Display Current Balance		L - Logout
D - Deposit	B - Display Current Balance	Select > t
I - Add Monthly Interest	D - Deposit	You've selected > T
T - Display Number of Transactions	I - Add Monthly Interest	
W - Withdrawal	T - Display Number of Transactions	Number of Transactions: 2
L - Logout	W - Withdrawal	
Select > b	L - Logout	ATM Menu
You've selected > B	Select > t	B - Display Current Balance
-	You've selected > T	D - Deposit
Your balance is: \$100.00		I - Add Monthly Interest
	Number of Transactions: 3	T - Display Number of Transactions
		W - Withdrawal
		L - Logout
		Select > 1
		You've selected > L

```
/**
* showAsDollars
*
* This routine formats the argument to look like dollars.
* This method accepts a double dollar amount and returns a string which is
* formatted to look like dollars.
*
* @param amount is the pre-formatted dollar amount (e.g. 100.0)
* @return a string which is formatted to look like dollars (e.g. $100.00)
*/
public static String showAsDollars(double amount) {
      NumberFormat format = NumberFormat.getCurrencyInstance(Locale.CANADA);
      String currency = format.format(amount);
      return currency;
}
public static void main(String[] args)
{//main
  //declarations
  double balance = 10.5;
             System.out.println( showAsDollars(balance) ); //will display as $10.50
```

}//main

Fig 2. A method which formats a double to look like dollars, i.e. 10.5 would be displayed as \$10.50