CS150 Assignment 3
A Credit Account Calculator

Date assigned: Friday, September 23, 2011
Program due: Friday, September 30, 2011, 9:15am (30 points)

You are employed by the First State Bank of Forest Grove to help generate information about payments on revolving credit accounts. The terms of a revolving credit account are as follows:

Unpaid Balance	Interest rate/month	Minimum Payment
$0-$500	19%	Balance
$500.01 - $1000	18.75%	$10
over $1000	18.5%	10% of Balance

Your job is to write a program that will help the bank provide information about users' balances and payments. First, the program will calculate the interest due on a given unpaid balance. The program will then add the interest on to the existing balance and report the new monthly balance and minimum payment to the user. The user then enters the amount that they wish to pay, and the new balance is reported to the user.

On the next page are two example runs of the program. They show exactly what your program is to output (asterisks and all), and example user input is in bold.

Notes:

1. If the user enters a negative amount as the starting balance, then you must display the message "That is not a valid unpaid balance" then exit the program.

2. If the user enters a payment that is less than the minimum payment, then you must display the message "The payment you entered is less than the minimum payment required" then exit the program.

3. If the user enters a payment that is greater than the unpaid balance, then you must display the message "The payment you entered is greater than the balance" then exit the program.

4. Pay close attention to the spacing and alignment in your output.

5. You must follow the coding standards and use constants whenever possible.

6. Make sure that you test your program thoroughly before turning it in.

7. Start early and come and see me with questions!

```
********************************
 First State Bank of Forest Grove
********************************

Enter your first and last name: Bob Smith

Enter your unpaid balance: $1500

Bob, here is your payment information for this month:

  Balance    Interest Rate    Interest Amount   Current Balance   Min Payment
---------    -------------    ---------------   ---------------   -----------
 1500.00           18.50%              277.50           1777.50        177.75

What is your payment this month? It must be greater than the minimum payment,
but no more than the balance. $200

Bob Smith, the remaining balance on your account is: $1577.50
```

```
********************************
 First State Bank of Forest Grove
********************************

Enter your first and last name: Jane Doe

Enter your unpaid balance: $300

Jane, here is your payment information for this month:

  Balance    Interest Rate    Interest Amount   Current Balance   Min Payment
---------    -------------    ---------------   ---------------   -----------
  300.00           19.00%               57.00            357.00        357.00

What is your payment this month? It must be greater than the minimum payment,
but no more than the balance. $200

The payment amount you entered is less than the minimum payment required.
```

To complete this assignment you must submit the following:

1. **An electronic copy of your program on Turing**

   a. Add a new project named 03_Bank to your previously created assignment solution called PUNetIDAssignments. It is *vital* that you name your project correctly!

   b. Type your program (fully documented/commented) into the project. The comment block at the top of the program needs to contain your name, the date the assignment is due, the class name, assignment number and name, and a brief description of the program.

   c. Pay attention to the example output! Your program's output should look **exactly** like the example output! The spacing and newlines in your output must match exactly.

   d. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive.

   e. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to Turing and placing your complete solution folder in the **CS150-02 Drop** folder. This solution folder must contain three projects: 01_Fraction, 02_Currency, and 03_Bank.

   f. The program must be in the drop folder by 9:15am on the day that it is due. Anything submitted after that will be considered late.

   g. Follow the coding standards!

2. **A hard copy of your program**

   a. The hard copy must be placed on the instructor's desk by 9:15am on the day that it is due.

   b. The hard copy must be printed in color, double-sided, and stapled if necessary. I do not bring a stapler to class.

   Good luck! And remember, if you have any problems, come and see straight away. ☺

   The printers in Marsh are slow. Do NOT expect to be able to print your code 10 minutes before class!