

CS150 Assignment 4

Credit Card Processing

Date assigned: Monday, October 1, 2012

Program due: Wednesday, October 10, 2012, 1pm (35 points)

Most people pay a large portion of their bills with a credit card. Unfortunately, many maintain a balance with a large interest rate. You are to write a C++ program that processes the credit card account activity for an individual. The account activity will be maintained in a data file called **creditcard.txt** with the following format.

Account Number
Yearly Interest Rate
Beginning Balance
Date Purchase Amount

Here is a sample data file:

```
97116
19.99
1025.23
10/01/12 McDonalds 10.75
10/05/12 Walmart 50.65
10/14/12 McMenamins 23.00
10/15/12 Payment -25.00
10/21/12 Comcast 130.01
99/99/99
```

In order to process this data file you need to do the following:

1) Read in the account number, yearly interest rate, and beginning balance. The beginning balance is the unpaid portion from the previous month and your program is to calculate the interest on the unpaid balance. The interest rate is a yearly interest rate; however, the interest is calculated using a monthly interest rate because bills are sent out monthly.

2) Process each transaction one line at a time until the sentinel value of 99/99/99 is read at which time you are to output the summary information. The minimum payment is calculated such that an interest rate less than 20% has a minimum payment of 2% of the final balance; otherwise, the minimum payment is 3% of the final balance. Round the minimum payment to the nearest dollar, so for example, 24.63 is rounded to 25.00. For rounding, .5 and higher rounds up; otherwise, round down.

Here is an example of the output after processing the above data file.

* Credit Card Processing *

Account #97116
Previous Balance \$1025.23
Interest Charged \$ 17.08

Date	Purchase	Amount
10/01/12	McDonalds	10.75
10/05/12	Walmart	50.65
10/14/12	McMenamins	23.00
10/15/12	Payment	-25.00
10/21/12	Comcast	130.01

Final Balance: \$1231.72
Minimum Payment: \$ 25.00

To complete this assignment you must submit the following:

1. An electronic copy of your program on Turing

- a. Add a new project named 04_CreditCardProcessing to your previously created assignment solution called PUNetID-Assignments. 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 must 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 with no warnings. If you get any errors, double check that you typed everything correctly.
- 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 **CS150-01 Drop** folder. This solution folder must contain four projects: 01_Fraction, 02_Currency, and 03_PayCheckGenerator, and 04_CreditCardProcessing.
- f. The program must be in the drop folder by 1pm 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 1pm on the day that it is due.
- b. The hard copy must be printed in color, double-sided, and stapled if necessary. Staple the program output described above to your program.

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