

# IT210 Business Applications with C++

## Program Assignment

### Credit Card Interest Calculator

#### Purpose

Write a C++ program **with functions** that will calculate the interest on **one or more customers'** credit card's unpaid balances using the average daily balance.

#### Program Input

The **standard input** for this program which **will also be echoed**, is:

- Customer's first and last name
- Credit card number
- Balance shown in the bill (*netBalance*)
- Payment made (*payment*)
- Days in the billing cycle (*d1*)
- Number of days payment made before billing cycle (*d2*)

Calculate the average daily balance, interest, and APR based on the formulas given below:

$$\text{averageDailyBalance} = (\text{netBalance} * d1 - \text{payment} * d2) / d1$$

$$\text{interest} = \text{averageDailyBalance} * \text{APR} / (100 * 12)$$

where APR depends on the average daily balance as shown below

$$\text{averageDailyBalance} < \$100 \quad \text{APR} = 5\%$$

$$\text{averageDailyBalance} \text{ between } \$100 \text{ and } \$1000 \quad \text{APR} = 10\%$$

$$\text{averageDailyBalance} > \$1000 \quad \text{APR} = 15\%$$

Your program will utilize functions to:

1. Read first and last name (void function)
2. Read credit card number (value returning function)
  - a. Use a void function to verify read credit card number is correct
3. Read the balance shown in bill (*netBalance*), payment made (*payment*), days in billing cycle (*d1*), and number days payment made before billing cycle (*d2*) using a void function
4. Calculate the average daily balance using a void function
5. Determine the APR using a value returning function
6. Determine the interest using a void function
7. Output the results using a void function

Your program's input/output must be identical to Module 5 Program Assignment (1) except you will be using functions. It is assumed that you will be displaying the descriptive header using a void function as shown in class.

#### Submission Requirements:

1. Please submit the program on Blackboard

```
==*****=  
*   IT210 Business Applications with C++   *  
*   Programmer: Vijay Kalburgi           *  
*   Date: February 27, 2017              *  
*   Module 5 Program Assignment           *  
*   Interest Calculator                   *  
==*****=
```

This program calculates the interest on unpaid  
credit card balances using the average daily balance

Please enter the first and last name on the credit card: Siri Gowri

You entered Siri Gowri

Please enter the credit card number: 1234

You entered 1234

If this is correct, press 0 or 1 to try again: 1

Please enter the credit card number: 2345

You entered 2345

If this is correct, press 0 or 1 to try again: 0

Please enter the balance shown in the credit card bill: 660

You entered \$660

Please enter the payment you made: 40

You entered \$40

Please enter the number of days in the billing cycle: 30

You entered 30

You entered 30

Please enter the number of days payment was made before billing cycle: 7

You entered 7

\*\*\*\*\*  
1234567890123456789012345678901234567890  
\*\*\*\*\*

Siri                      Gowri                      2345

-----  
FIRST NAME              LAST NAME              CARD NUMBER  
=====

Credit Card Balance.....              660.00

Annual Interest Rate.....              10.00

Payment Made.....                      40.00

Number of Days in Billing Cycle.....              30

Number of Days Before Billing Cycle.....              7

Average Daily Balance.....              650.67

Interest on Unpaid Balance.....              5.42

\*\*\*\*\*

Please enter 0 to exit or 1 for another customer: 1

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\*    Module 5 Program Assignment           \*  
\*    Interest Calculator                    \*  
=\*\*\*\*\*=

This program calculates the interest on unpaid  
credit card balances using the average daily balance

Please enter the first and last name on the credit card: \_