CS 1408 (Intro. to Computer Science with VB .NET) FALL SEMESTER 2009
Project #2
Due Date: Wednesday October 7, 2009

The objective of this project is to learn how to implement arithmetic expressions in VB.

Bayou Savings and Loan decides to provide their customers with a loan related calculator, so they can use the calculator to determine the monthly payment, loan amount, and monthly payment table. Your task is to create a VB application called *Mortgage Calculator* to provide customers for these calculations: find monthly payment and loan amount. Your VB application should have all the controls as shown in Figure 1.

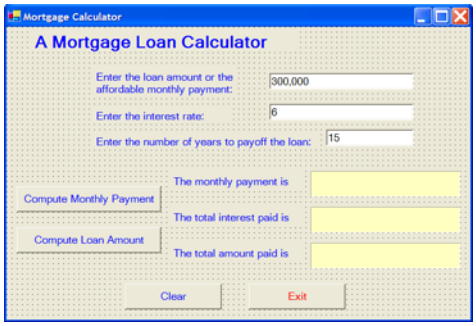

Figure 1: Mortgage Calculator at Design Time

There are three pale yellow background **Labels** used to display the monthly payment or the loan amount, the total interest paid, and the total amount paid. Three **TextBoxes** are used for inputting the loan amount or the affordable monthly payment, interest rate, and number of years. There are four **Buttons** as Follows

1. Compute Monthly Payment: Retrieve the loan amount, interest rate, and number of years then displays the monthly payment, the total interest paid, and the total amount paid. See Figure 3.
2. Compute Loan Amount: Retrieve the affordable monthly payment, interest rate, and number of years then displays the loan amount, the total interest paid, and the total amount paid. It also changes the text **The monthly payment is** label to T**he loan amount is** See Figure 4.
3. Clear: Clear the display labels and the list box as shown in Figure 2.
4. Exit: Close the application.

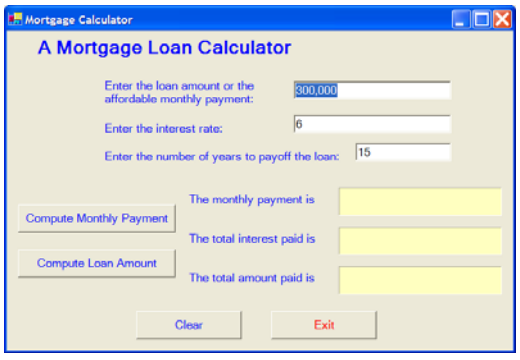

Figure 2: Mortgage Calculator at Initial Runtime and after Clear button is clicked.

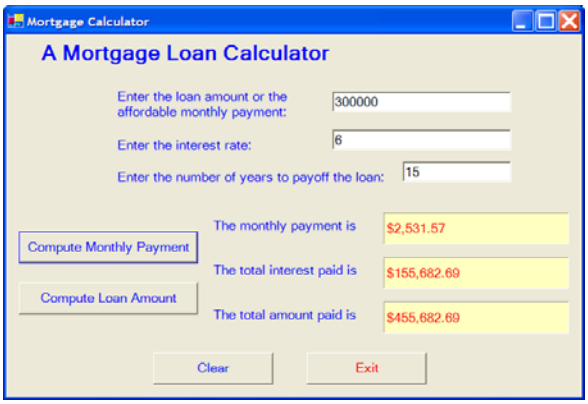

Figure 3: Compute Monthly Payment

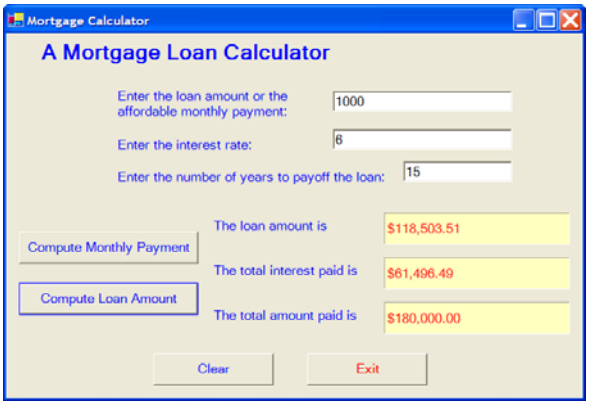

Figure 4: Compute Loan Amount

Use the following formula to compute the monthly payment from the input values of loan amount, interest rate (%), and number of years to payoff the loan:

$$\text{Payment} = \text{Loan amount}\left(\frac{i}{1-(1+i)^{-n}}\right)$$

Where *i* is **monthly** interest rate and *n* is number of months to payoff the loan.

To compute the loan amount from the input values of the affordable monthly payment, interest rate (%), and number of years to pay off the loan, we will use the following:

$$\text{Loan amount} = \text{Monthly payment}\left(\frac{1-(1+i)^{-n}}{i}\right)$$

Where *i* is **monthly** interest rate and *n* is number of months to pay off the loan.

Turn in a properties table of controls for the GUI, a chart that describes actions for each event on Monday October 5, 2009, and a hardcopy of the source code Wednesday October 7, 2009 in class at the beginning of the class and the whole project folder via email to this email address: ongards4@yahoo.com NOT MY SCHOOL EMAIL address.

Your source file should have a comment header as follows:

```
    REM ******************************************************
    REM Application Name: Project2
    REM Author: Your Name
    REM Class: CS 1408 Section #
    REM Due Date:
    REM Description: Mortgage Calculator
    REM
*************************************************************
```

One point will be taken off missing the comment header and 2 points/day for late submission. The maximum point for each project is 20.