

## Savings Account

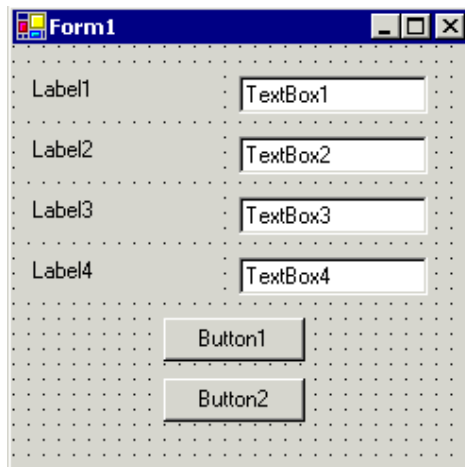
1. Start a new project. The idea of this project is to determine how much you save by making monthly deposits into a savings account. For those interested, the mathematical formula used is:

$$F = D [ (1 + I)^M - 1 ] / I$$

where

F - Final amount  
D - Monthly deposit amount  
I - Monthly interest rate  
M - Number of months

2. Place 4 labels, 4 text boxes, and 2 buttons on the form. It should look something like this:

A screenshot of a Windows form titled "Form1". The form has a grid background. It contains four labels (Label1, Label2, Label3, Label4) arranged vertically on the left. To the right of each label is a text box (TextBox1, TextBox2, TextBox3, TextBox4). Below the text boxes are two buttons, Button1 and Button2, arranged vertically.

3. Set the properties of the form and each object.

### Form1:

Name	frmSavings
FormBorderStyle	Fixed Single
Starting Position	CenterScreen
Text	Savings Account

### Label1:

Text	Monthly Deposit
------	-----------------

### Label2:

Text	Yearly Interest
------	-----------------

**Label3:**  
Text                      Number of Months

**Label4:**  
Text                      Final Balance

**Text1:**  
Name                      txtDeposit  
Text                      [Blank]

**Text2:**  
Name                      txtInterest  
Text                      [Blank]

**Text3:**  
Name                      txtMonths  
Text                      [Blank]

**Text4:**  
Name                      txtFinal  
BackColor                White  
ReadOnly                True  
Text                      [Blank]

**Button1:**  
Name                      btnCalculate  
Text                      &Calculate

**Button2:**  
Name                      btnExit  
Text                      E&xit

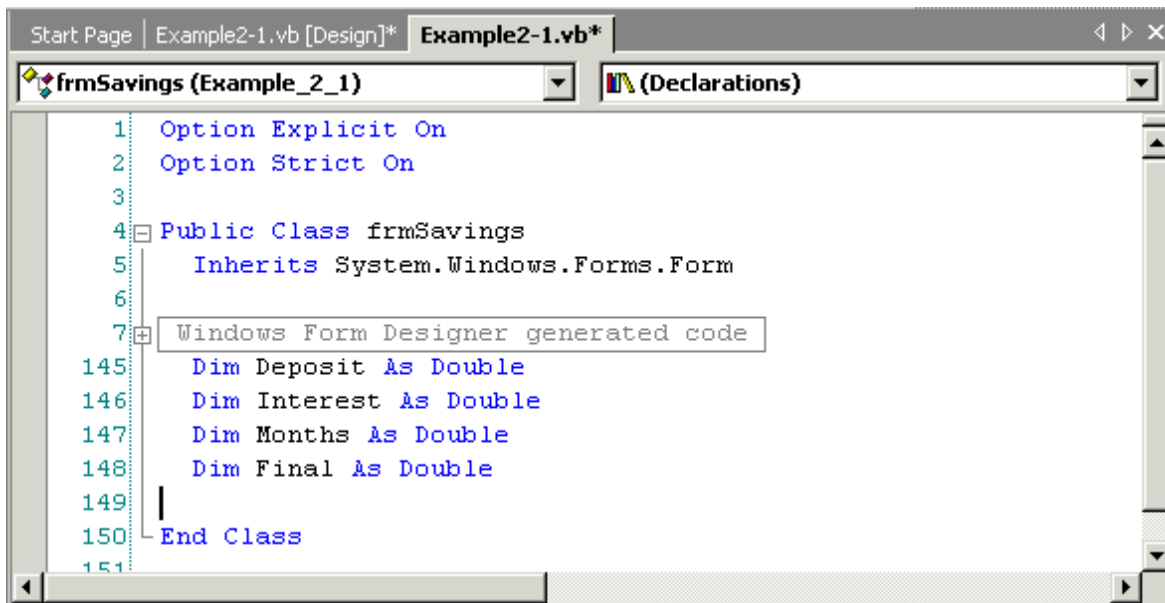
Now, your form should look like this:

The screenshot shows a Windows application window titled "Savings Account". The window contains four text boxes for input, each preceded by a label: "Monthly Deposit", "Yearly Interest", "Number of Months", and "Final Balance". Below these input fields are two buttons labeled "Calculate" and "Exit". The window has a standard Windows XP-style title bar with minimize, maximize, and close buttons.

4. Declare four variables under the **Windows Form Designer generated code** line in the Code window. This gives them form level scope, making them available to all the form procedures:

```
Dim Deposit As Double
Dim Interest As Double
Dim Months As Double
Dim Final As Double
```

At this point, the Code window should look like this:



5. Write code for the **btnCalculate** button **Click** event (remember to select the **btnCalculate** object from the object box and the **Click** event from the event box):

```
Private Sub btncalculate_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles btncalculate.Click
```

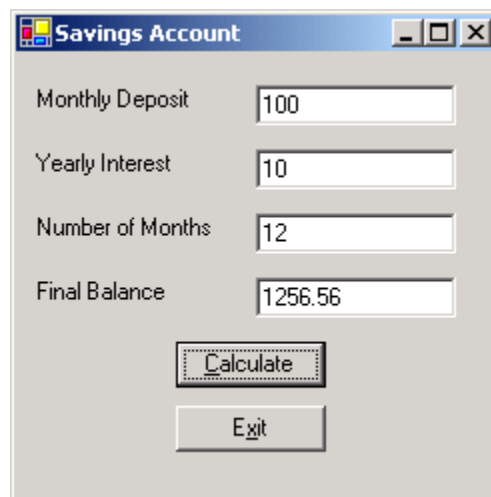
```
Dim IntRate As Double
    'read values from text boxes
    Deposit = Val(txtDeposit.Text)
    Interest = Val(txtInterest.Text)
    IntRate = Interest / 1200
    Months = Val(txtMonths.Text)
    'compute final value and put in text box
    Final = Deposit * ((1 + IntRate) ^ Months - 1) / IntRate
    txtFinal.Text = Format(Final, "0.00")
End Sub
```

This code reads the three input values (monthly deposit, interest rate, number of months) from the text boxes, converts those string variables to number using the **Val** function, converts the yearly interest percentage to monthly interest (**IntRate**), computes the final balance using the provided formula, and puts that result in a text box (after converting it back to a string variable).

6. Now, write code for the **btnExit** button **Click** event.

```
Private Sub btnExit_Click(ByVal sender As System.Object, ByVal  
e As System.EventArgs) Handles btnExit.Click  
    Me.Close()  
End Sub
```

7. Play with the program. Make sure it works properly. Here's a run I made:



The screenshot shows a Windows application window titled "Savings Account". Inside the window, there are four text boxes arranged vertically. The first three are for input: "Monthly Deposit" (containing "100"), "Yearly Interest" (containing "10"), and "Number of Months" (containing "12"). The fourth is for output: "Final Balance" (containing "1256.56"). Below these text boxes are two buttons: "Calculate" and "Exit". The "Calculate" button is highlighted with a dashed border, indicating it is the active control.

Save the project