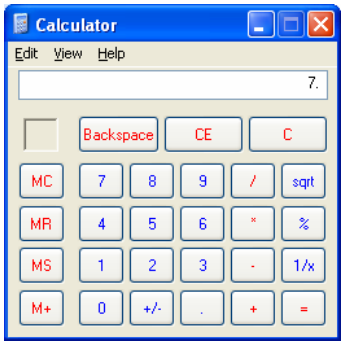
Visual Basic II
Building a Calculator with Variables



Earlier, you made a **variable** called myName that you used to store information. You will now use variables to perform calculations.

Set up a form with two buttons on it. Change the text property on one of them to “Enter Numbers” and on the other to “Produce Answer”

Double click on the Enter Numbers button and put the following code in:

```
my1stNum = InputBox (“Enter the 1st Number”)
my2ndNum = InputBox (“Enter the 2nd Number”)
```

Now double click on the 2nd button (you may need to go back into *Form Design* – look at the top of your code) and enter the following:

```
myAnswer = my1stNum ++ my2ndNum
msgBox (myAnswer)
```

Note that when we add, it is sometimes better to use two pluses. When we multiply, subtract and divide, we can use one symbol.

If you try running your program, you will find it doesn’t work properly. We need to **define** the variables with the **Dim** command.

We need to set up the variables **outside** your two subroutines. If you use the Dim command in one of your two subroutines (Private Sub…) the variable will go back to zero when the subroutine has finished.

Go to the top of your code and click on the end of the 2nd line which should read:

```
Inherits System.Windows.Forms.Form
```

Press *Enter* a couple of times and then enter the following code:

```
Dim my1stNum
Dim my2ndNum
Dim myAnswer
```

This creates **public variables** that will not go back to zero when a subroutine finishes.

Extension
Add three more buttons that will either subtract, multiply or divide to produce your answer.

The Calculator Exercise

You need to produce a calculator program similar to the one that comes with Windows. Design something that a child could use to help them with their maths work.

A proper calculator is actually quite complicated so take it one step at a time.

The following bits of information might help you.

Text boxes

You can use a textbox to display the numbers that are being typed in. Draw a textbox in the same way you would draw a button. It will be called textbox1. Find its text property in the *Properties* window and change it to 0. Change the textalign property to right.

Making the buttons work

When we click a number button, we want the number to appear in the textbox. We do this by changing the text property of the textbox. For instance, when you click the number 7, the code might be:

```
Textbox1.text = “7”
```

Other things to consider

What about numbers with more than one digit? If you press the 7 button twice, you want the textbox to read 77.

Consider this code:

```
If textbox1.text = “” Then
        Textbox1.text = “7”
Else : textbox1.text = textbox1.text & “7”
Endif
```

This basically says that if the textbox is blank (“”), put a 7 in it. Otherwise, add a 7 to the end.

What happens when you press a symbol such as plus or multiply? How does the computer know you have done this and what you have chosen?

Consider using a variable like myMaths to store what the user has pressed. The following code might be useful:

```
myMaths = “Plus”
```

and

```
If myMaths = “Plus” Then
        myAnswer = my1stNum ++ my2ndNum
ElseIf myMaths = “Minus” Then….
```