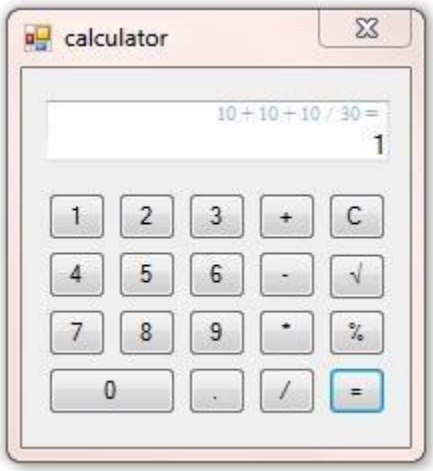
P1- Calculator

Build a simple working calculator in Microsoft Visual Studio using Windows Forms.

The display should look similar to this:



Start off by only coding the numbers, decimal, and basic operators and do this based on only a two number input.

Step 1: Pseudocode

- ❑ Open Word or Notepad and write out how your code should be executed, but in English.
- ❑ Include what each Button does when clicked, what the TextBox displays, and error checking.

Step 2: Create a New Project

- ❑ Open Visual Studio and click "New Project...," or do the following: File->New->Project.
- ❑ Select "Visual C#" in the Installed Templates Column and the Select "Windows Forms Application" in the right column.
- ❑ Name your project 'Calculator' in the name field.
- ❑ Click "OK" and let Visual Studio build the shell for your program.

Step 3: Designing the Project

- ❑ Click and drag (or copy) all the Buttons onto Form1 including a TextBox for the results.
- ❑ Save your project regularly.
- ❑ Single-click the TextBox and each Button to change the Properties, especially the name for each button. (ex. txtBxOne, btnOne)

Step 4: Creating Event Handlers

- ❑ Double-click on each Button to create each Button's click event.
- ❑ Write a /*COMMENT*/ at the top of your code that includes each team member's name.

Step 5: Declaring Variables

- ❑ Remember, variables are declared in the following form: <Data Type> <Variable Name> = <Initial Value>;

Step 6: Writing Code

- ❑ Write code for each number Button so that when the user clicks on it, a value is added to a variable and the combined input is displayed in the TextBox.
- ❑ Remember that the number is a string and needs to stay as a string until ready for calculations.
- ❑ Write code for each operand Button.
- ❑ Write code for the Clear Button.
- ❑ Make sure you write /*COMMENTS*/ throughout your code. This should be based on your pseudocode.

Step 7: Calculating Output

- ❑ Write code for the Equals Button to perform calculations.
- ❑ Include an error message for DIV/Zero error.

Step 8: Debugging

- ❑ Code a little, test a lot.
- ❑ Insert breakpoints in your code so that you can go line by line to see what it's doing.
- ❑ Fix any possible syntax or logic issues.

Step 9: Testing

- ❑ Allow someone else to try to break your program. If they succeed, fix the errors.

Step 10: Wrap-up

- ❑ At this point, you are done with the project and are ready to present. You should be ready to show your pseudocode and the working project.
- ❑ Click Project→Calculator Properties→Publish and change the Publishing Folder Location to your desktop. Click Prerequisites and uncheck the "Create setup program to install prerequisite components." Click OK. Click Options→Deployment and uncheck Use ".deploy" file extension. Click OK. Click Publish Now. You should see an application and Application Files folder on your desktop. Open the Application Files folder and drag and drop the Calculator Application file to your desktop. Double-click to execute.
- ❑ If you want to change the desktop icon of your program, Click Project→Application and then click on the ellipsis next to Icon and find a .ico file for your icon. You can use websites like iconarchive.com to get .ico files.
- ❑ If you have spare time before giving the presentation, you can enhance your project by changing certain properties.
- ❑ Send me your project files for grading. Find the folder it's contained in like C:\Users\[Computer Name]\Documents\Visual Studio 2013\Projects, zip up the Calculator folder, and email it to me.