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Priscilla Grocer

Chair, Computer Information Systems, Bristol Community College

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12:31 PM 1/28/2020

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CIS156/56 Course Page

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Visual Basic CIS156/56

About This Course:
Introduction to CIS156
Syllabus

Site Resources:
Notes, Handouts, Presentations
VB 2019/2017/2015/2012:
Examples 2019/2017/2015/2012
Smartboard 2019/2017/2015/2012
Audio VB 2019/2017/2015/2012
VB.NET (previous version):
Programs VB.NET
Presentations VB.NET
Smartboard VB.NET
Audio/lectures VB.NET
VB.6 (previous version):
Programs written in VB.6
Programs written in VB.6 (Access/Excel)
Presentations for VB.6
Smartboard for VB.6
Video conferencing available.

Weekly Schedule:
Weekly schedule - CIS156

Links:
Links & Tutorials

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Visual Basic - CIS156/56

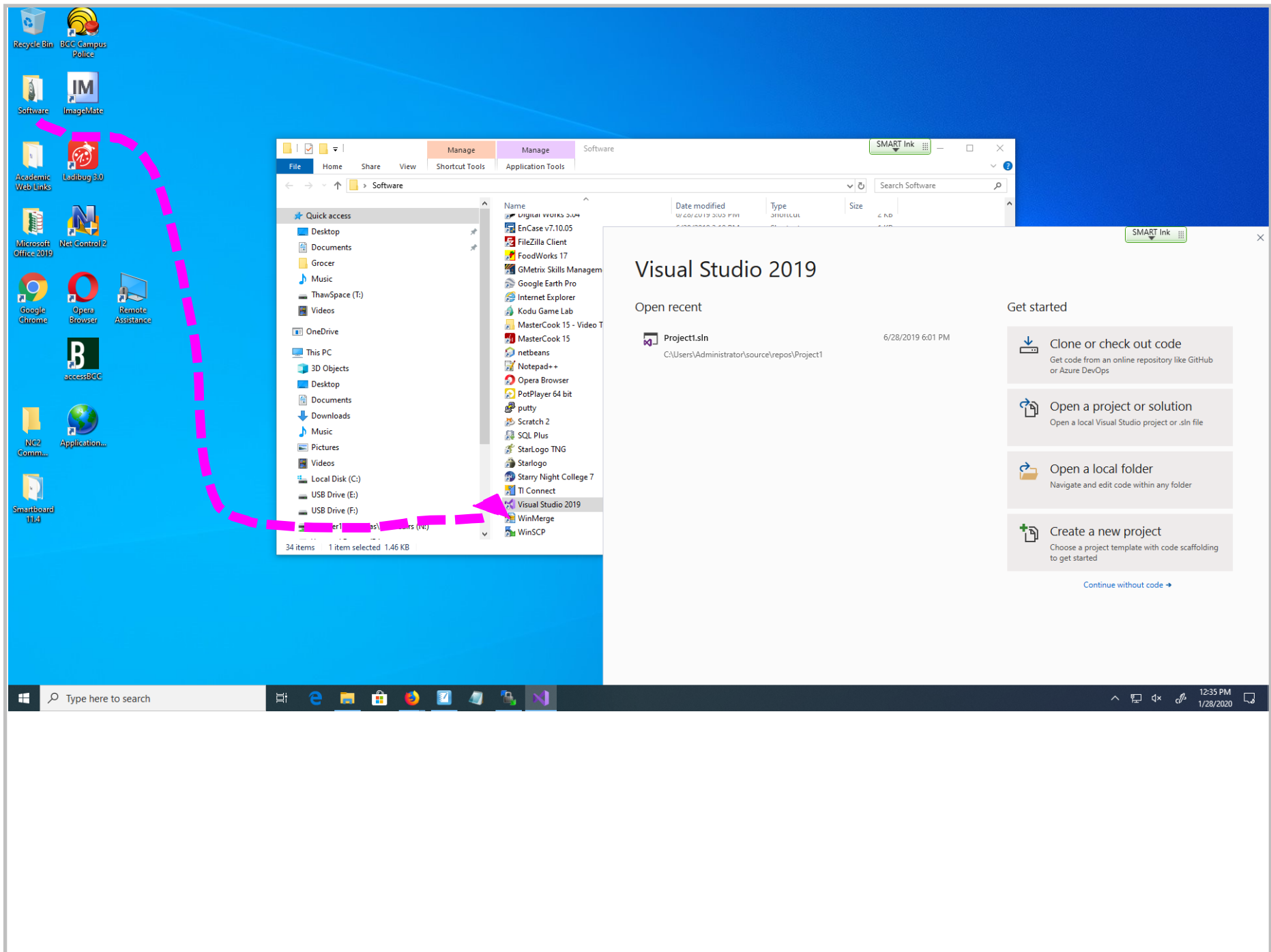
Weekly Schedule

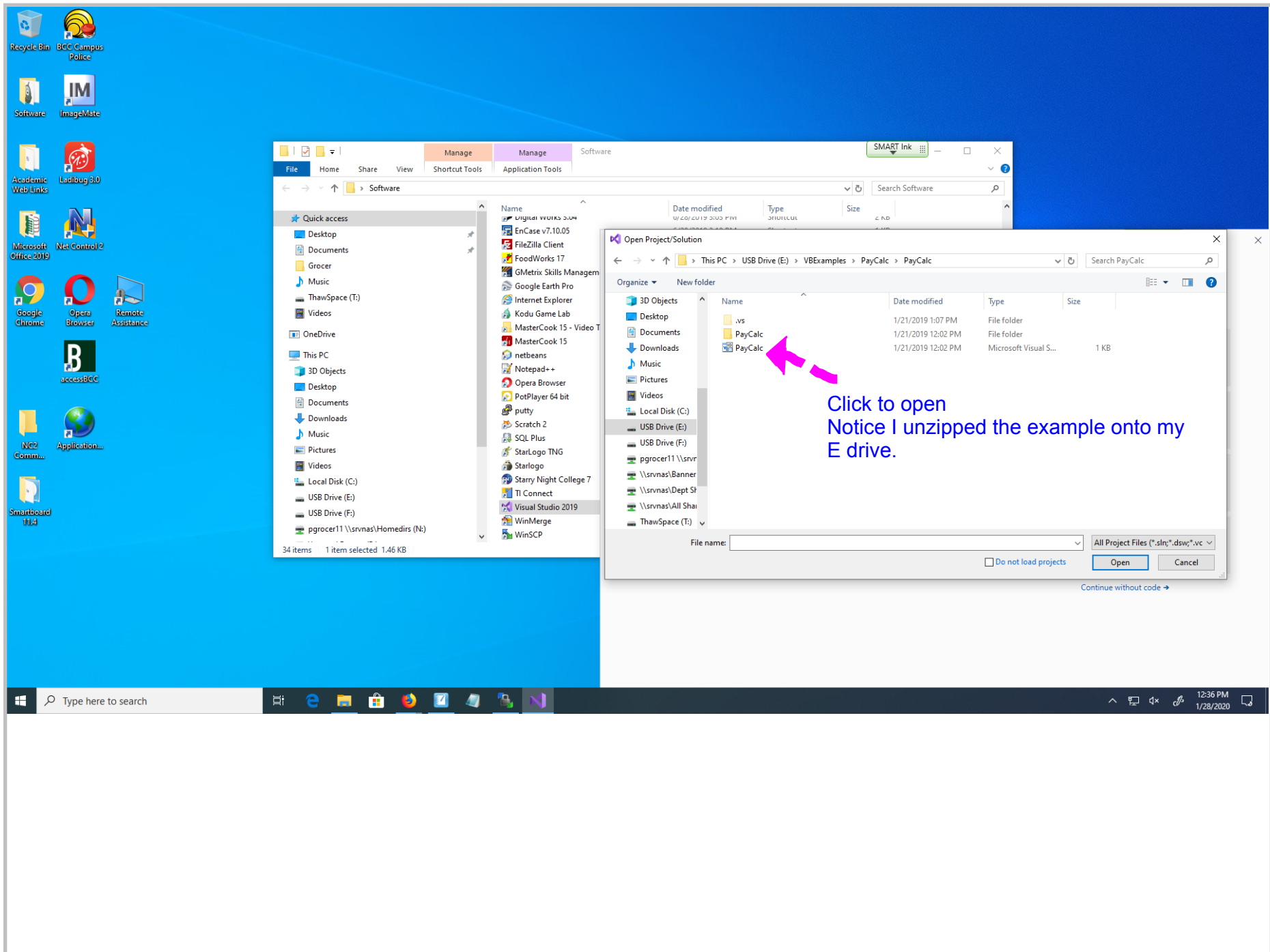
Remember RE-SUBMIT. If you get back a homework with errors and without a grade it means it has not been graded - you need to fix and resubmit to get a grade.

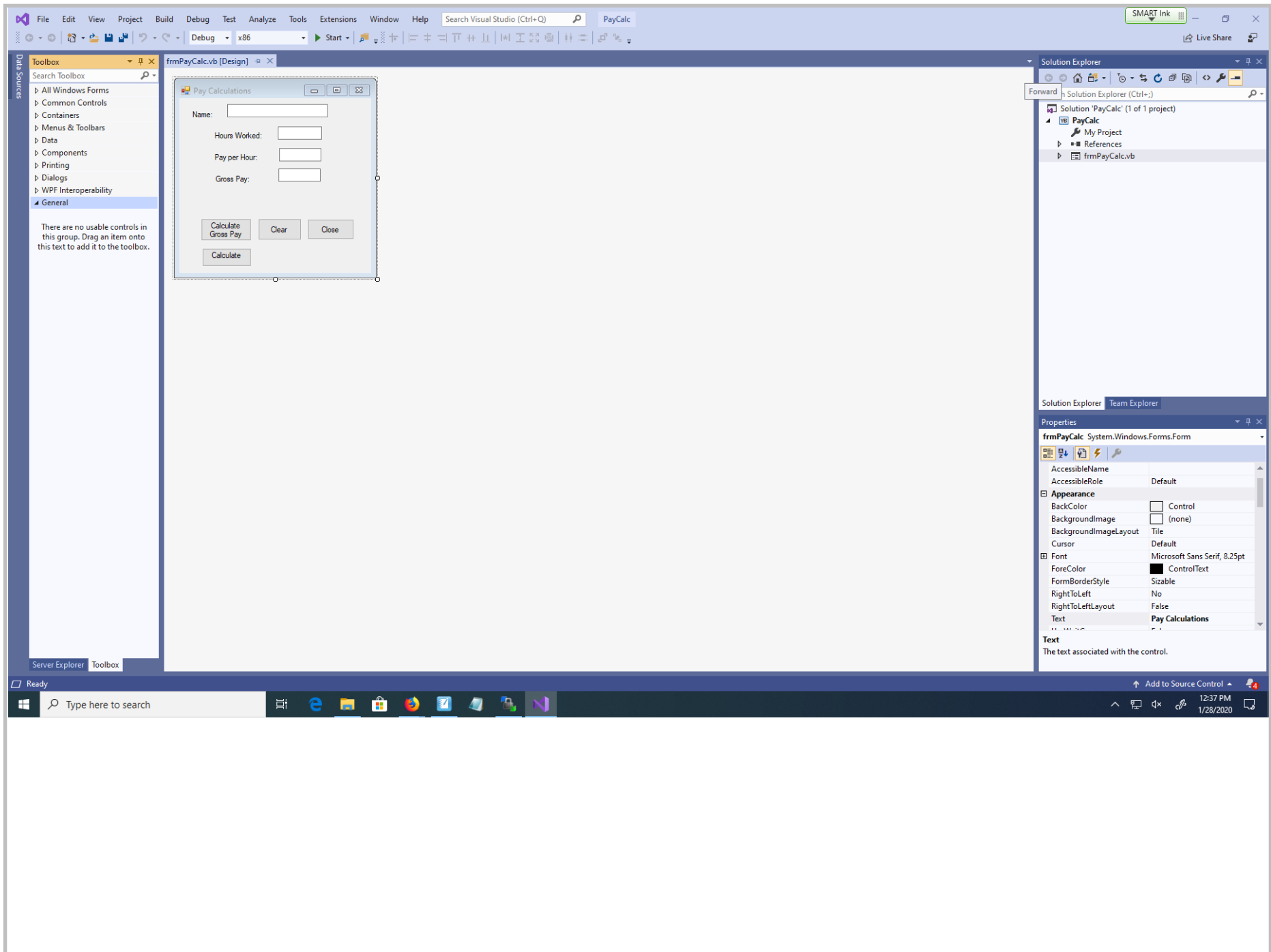
Week	Information
	<p>Information: Assignments due in one week unless otherwise stated. I am going to try to stay with the text to some degree but... The important thing is to follow the topics in the week of. We are using VB 2019 in the labs and you can get other versions through MSDN (community edition). Check the schedule several times a week, I may add some things during the week. Please keep copies of all work you submit until you receive your final grade at the end of the semester. Remember that I record all my classes and capture notes on the Smartboard. These are available to you under Audio and Smartboard.</p>
Week #2 Week of January 27th	<p>Either finish chapter #2 and then read chapter #3 or find another source to read about starting Visual Basic and using variables and input. The topics covered in the examples are the things you should follow through and read about.. We will slow down the chapter pace now...</p> <p>Additional notes on the first few examples: VBIntro23S15.pdf</p> <p>Our goal is to finish the examples under chapter #3 this week. If we have time, we will start to look at if statements. Below is a presentation on the structure of IF statements. Presentation on logical if structures - review Separate speaker notes to accompany presentation on logical if structures</p> <p>Assignments: Homework is due the Thursday of the week following the assignment. So assignments for this week are due Feb 6th by midnight. Visual Basic program week #2 Quiz: Debug Quiz #1 (zipped file)</p>
Week #1 Week of January 20th	<p>This course will use Visual Basic 2015/2017/2019, but the version in the classroom will be 2019. Some of the examples were written in 2010 and I checked many of them in VB2012 and found no problems.</p> <p>The text I recommend is expensive so if you want to use a different text for reference we can try and make that work. If you decide on a different text, please let me know what you choose. I mainly want the text to explain some of the details that I do not have time to go over in class. I do not give assignments from the text except in one case where I have you try a model problem but I have worked around it with students who do not have the text. You can also look for the 2015 version which is available at a better price.</p> <p>Whatever you decide, you should read the section that discusses the setup of the screen for visual basic (we looked at that in CIS120 if you were in my class).</p> <p>You can get a copy of Visual Studio Express community for desktops free. I can be used on your desktop or laptop computer. You can download a version which matches your book or 2015 or 2017 or 2019 if you want to try working with one of them.</p> <p>Site to download</p> <p>You should be looking at the beginning examples and programs. There are also examples written in .NET that will run as well. They are accompanied by PowerPoint explanations. Again, note while the .NET code works, there are development differences.</p> <p>We hopefully will look at the first two examples: PayCalc.zip, cisBasicProj.zip and developed one from scratch. Next week we will look at the examples under variables and input.</p> <p>Assignments: Assignments are due by Thursday at midnight on the week after they were assigned. This assignment is due by midnight on January 30th.</p> <p>For your first VB assignment, I want you to:</p> <ol style="list-style-type: none"> use labels, textboxes and buttons have at least one button to process, one button to clear and one to end do a couple of calculations (one should be an add) format the form (things like color, font) define and use a variable include something else from the book, the web or from other examples I have posted and explain what you did as a comment

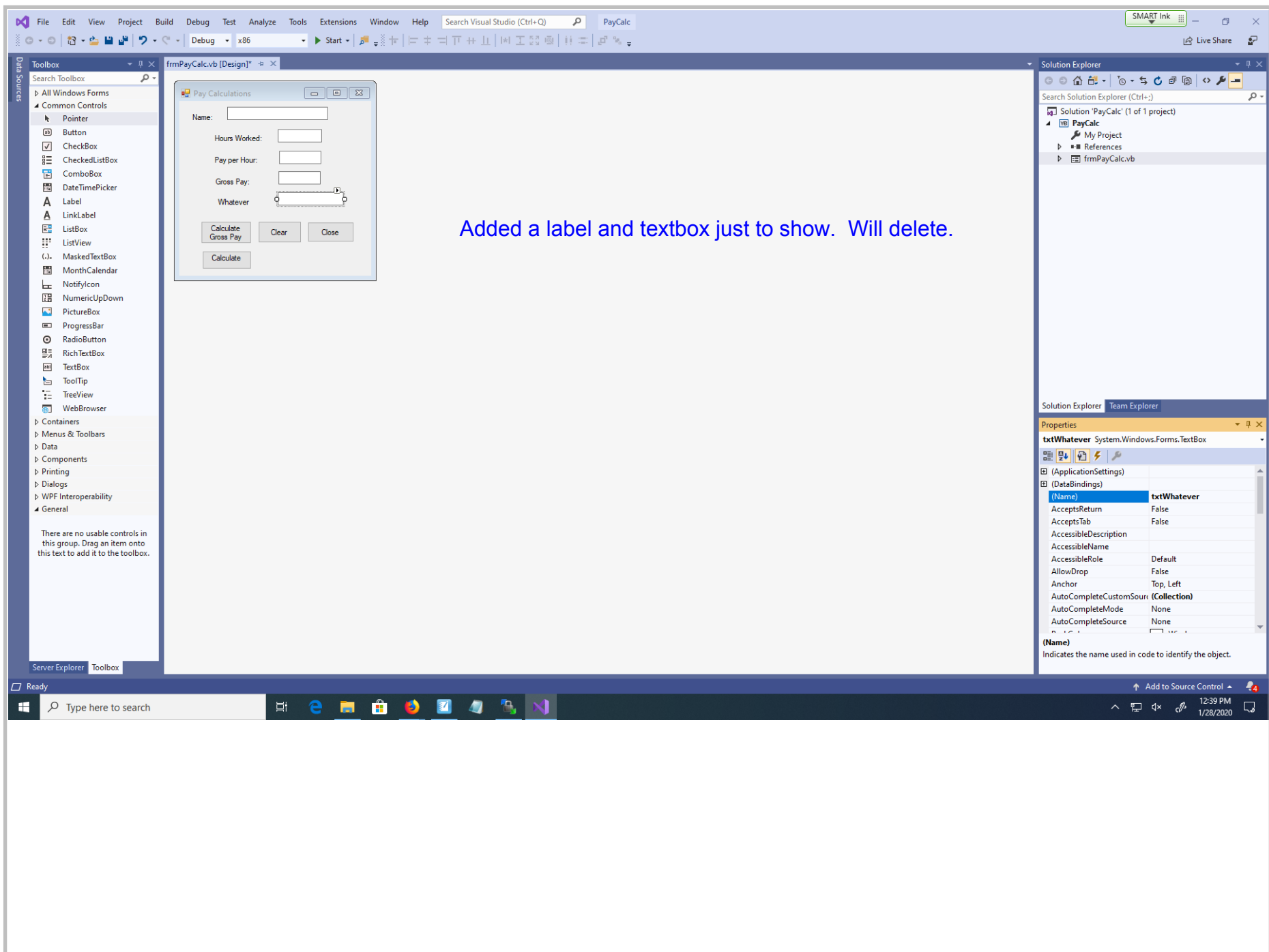
Send e-mail to Priscilla Grocer: pgrocer@bristol.mass.edu

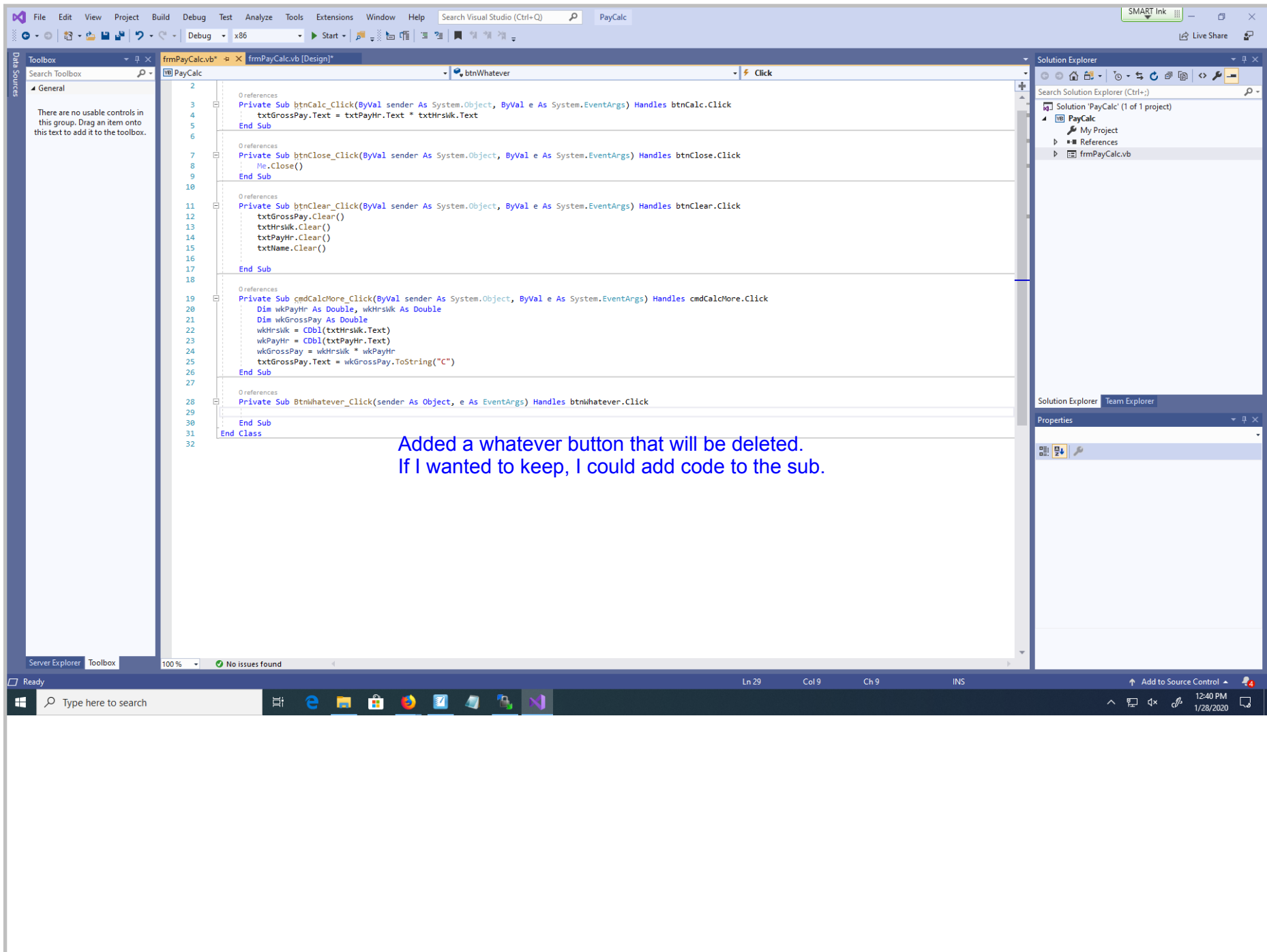
[Back to the Top](#)
[Return to home page](#)











The screenshot displays the Visual Studio IDE with the following components:

- Code Editor:** Shows the code for `frmPayCalc`. The `btnCalc_Click` event handler is highlighted with a pink dashed arrow pointing to the `Calculate` button in the application window. The code includes:

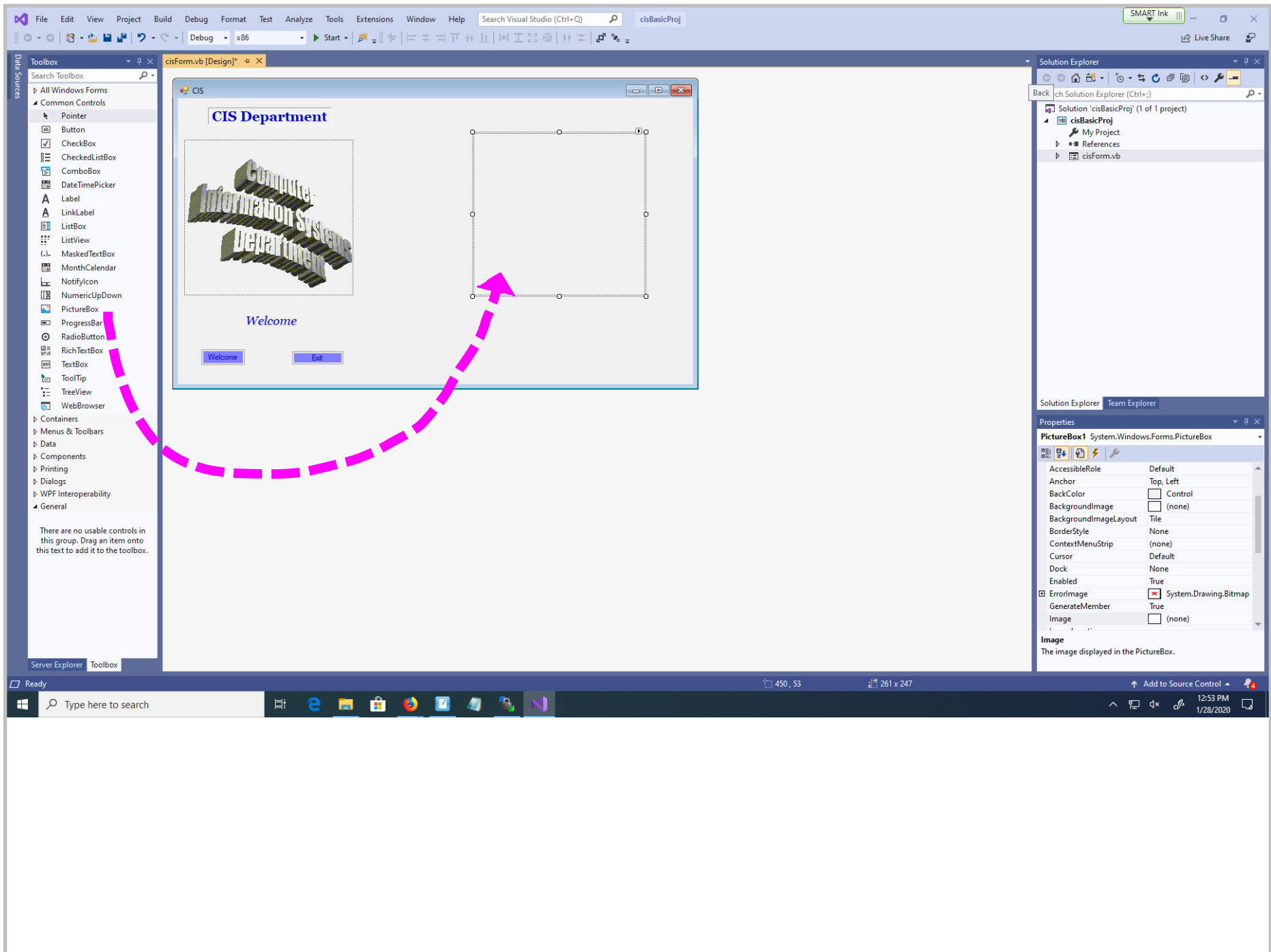
```
Public Class frmPayCalc
    Private Sub btnCalc_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnCalc.Click
        txtGrossPay.Text = txtPayHr.Text * txtHrsWk.Text
    End Sub

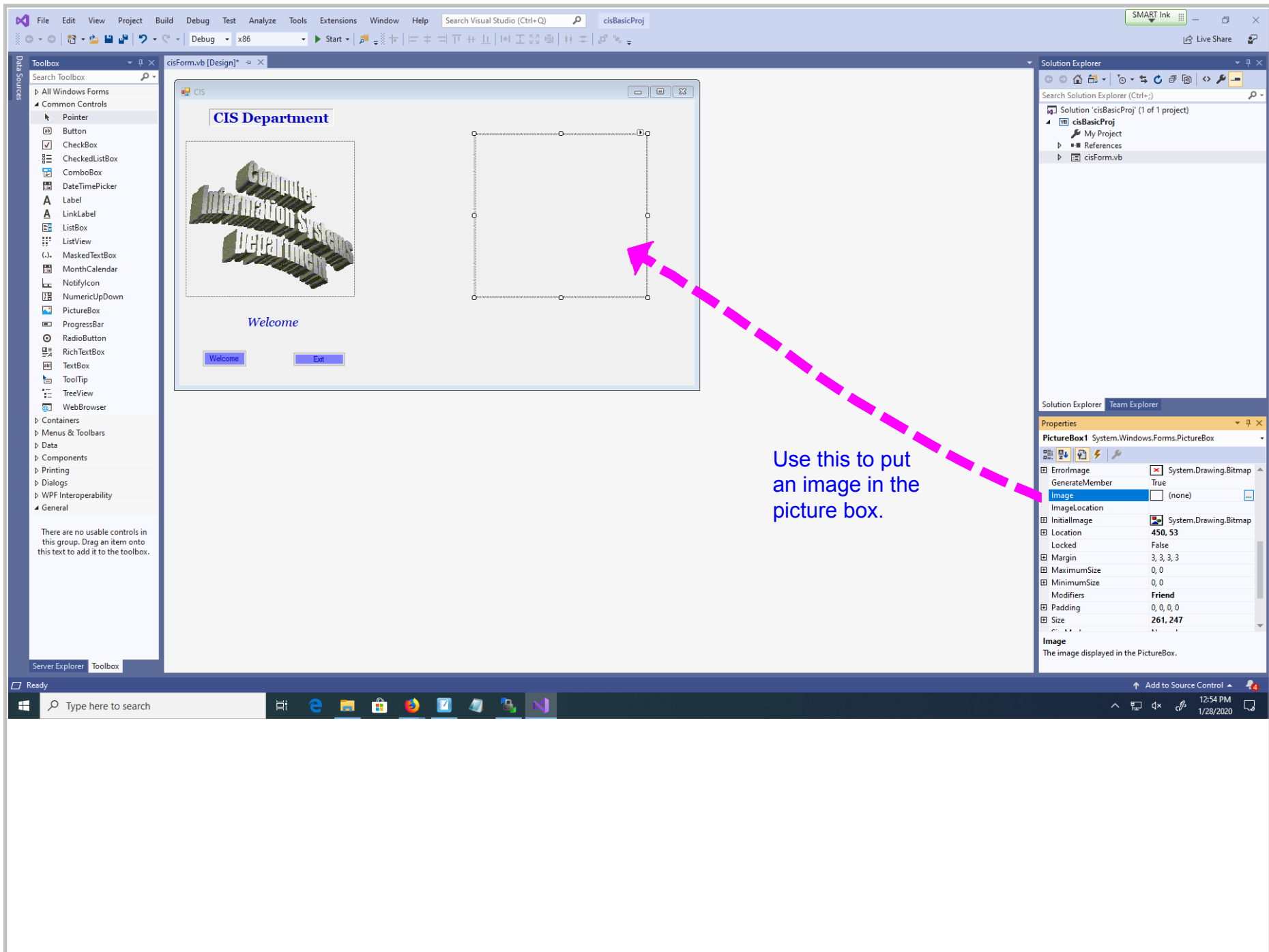
    Private Sub btnClose_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnClose.Click
        Me.Close()
    End Sub

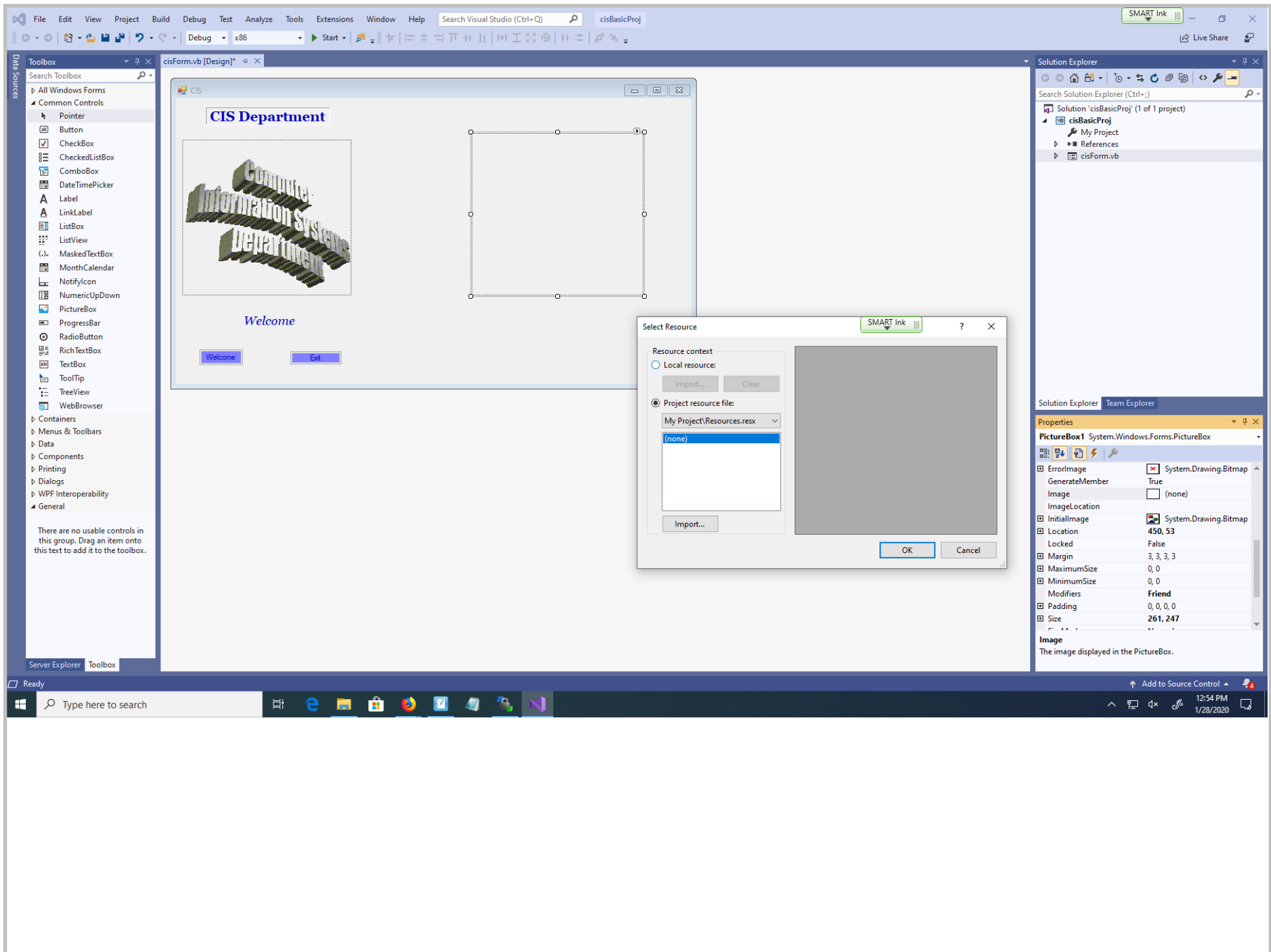
    Private Sub btnClear_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnClear.Click
        txtGrossPay.Clear()
        txtHrsWk.Clear()
        txtPayHr.Clear()
        txtName.Clear()
    End Sub

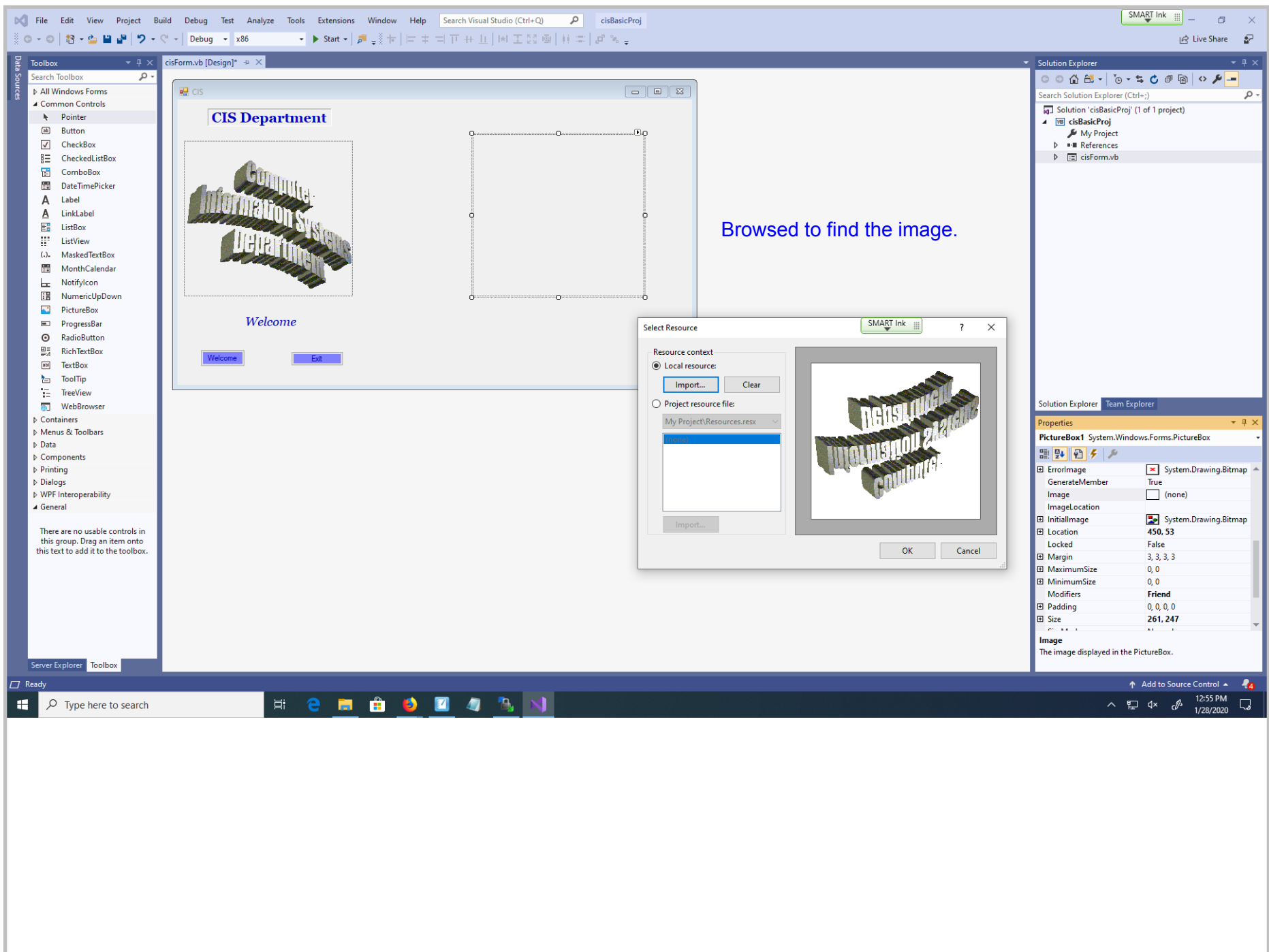
    Private Sub cmdCalcMore_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles cmdCalcMore.Click
        Dim wkPayHr As Double, wkHrsWk As Double
        Dim wkGrossPay As Double
        wkHrsWk = Cdbl(txtHrsWk.Text)
        wkPayHr = Cdbl(txtPayHr.Text)
        wkGrossPay = wkHrsWk * wkPayHr
        txtGrossPay.Text = wkGrossPay.ToString("C")
    End Sub
End Class
```
- Application Window:** A window titled "Pay Calcul" is open, showing a form with the following fields and values:
 - Name: John Doe
 - Hours Worked: 40
 - Pay per Hour: 25
 - Gross Pay: \$1,000.00Buttons include "Calculate Gross Pay", "Clear", "Close", and a "Calculate" button at the bottom.
- Diagnostic Tools:** Shows a diagnostics session for 9:01 minutes. The CPU usage graph shows 0% usage. The summary table lists events:

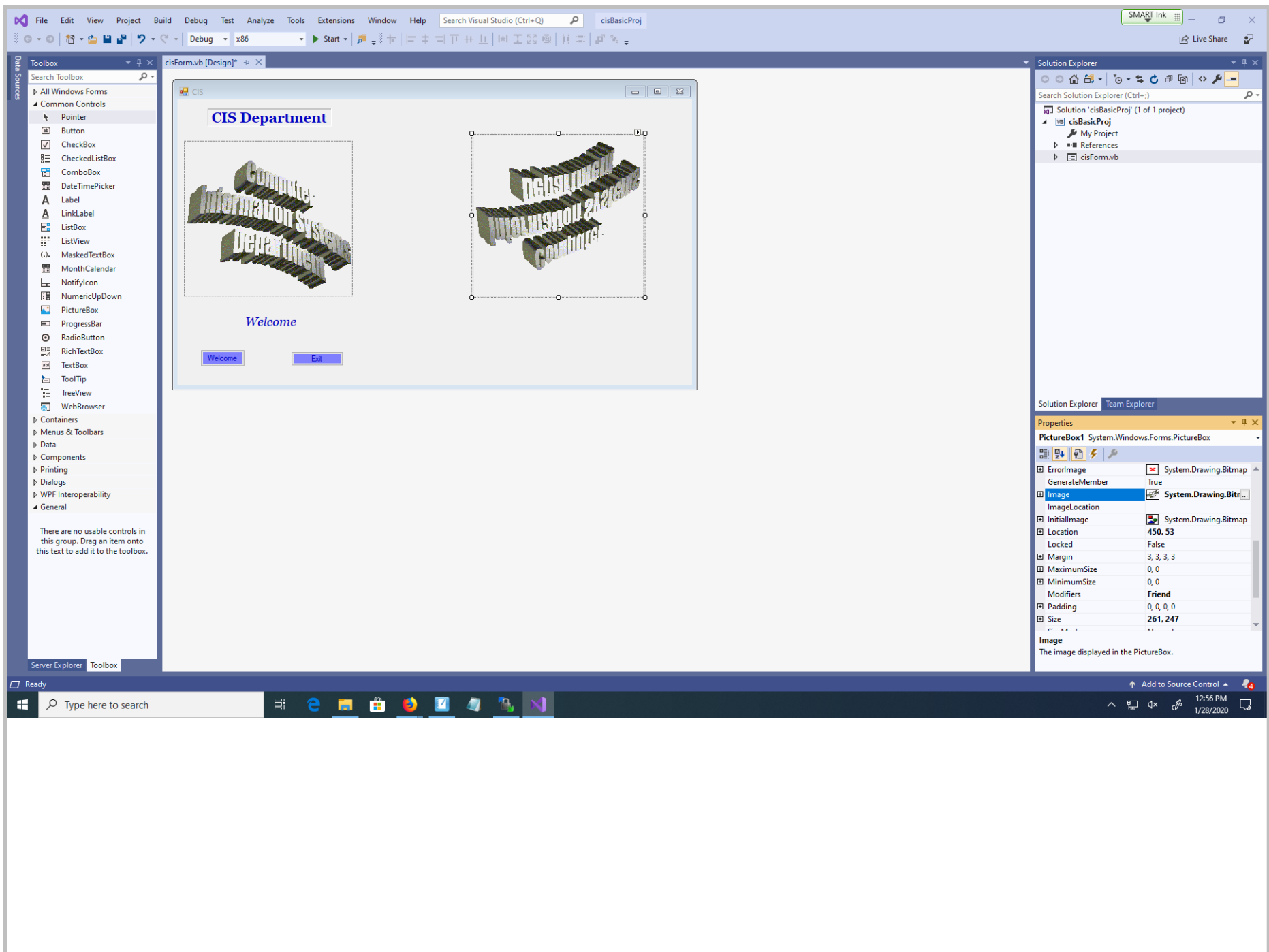
Event	Time	Duration	Thread
Gesture: Gesture ev...	26.96s		[3588] M.
Gesture: Gesture ev...	413.34s		[3588] M.
- Autos:** Search (Ctrl+E) window is open, showing a search for "Name" with a "Type" column.
- Call Stack:** Shows the current call stack with a single entry for "Name".











The screenshot displays the Visual Studio IDE with the following components:

- Source Code (cisForm.vb):**

```
1 Public Class cisForm
2
3     Private Sub btnWelcome_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnWelcome.Click
4         lblWelcome.Visible = True
5         MessageBox.Show("Welcome!")
6     End Sub
7
8     Private Sub btnExit_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnExit.Click
9         Me.Close()
10    End Sub
11 End Class
12
13
```
- Application Window (CIS):** A window titled "CIS" containing a "CIS Department" header, 3D text "Computer Information Systems Department" and "Business Information Systems Department", a "Welcome!" dialog box with an "OK" button, and "Welcome" and "Exit" buttons.
- Diagnostic Tools:** Shows a diagnostics session of 47 seconds. The Events list includes:

Event	Time	Duration	Thread
Gesture: Gesture ev...	32.75s		[7096] M.
User Prompt: Displa...	32.75s		[7096] M.
- Autos:** A table for variable inspection with columns for Name, Value, and Type.
- Call Stack:** A table for viewing the current call stack.

File Edit View Project Build Debug Test Analyze Tools Extensions Window Help Search Visual Studio (Ctrl+Q) cisBasicProj SMART Ink Live Share

Process: [13544] cisBasicProj.exe Lifecycle Events Thread: Stack Frame:

cisForm.vb [Design] btnWelcome Click

```

1 Public Class cisForm
2
3     Private Sub btnWelcome_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnWelcome.Click
4         lblWelcome.Visible = True
5         MessageBox.Show("Welcome!")
6     End Sub
7
8     Private Sub btnExit_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnExit.Click
9         Me.Close()
10    End Sub
11
12 End Class
13

```

CIS

CIS Department

Computer Information Systems Department

Web Design & Multimedia

Welcome

Welcome Exit

Diagnostic Tools

Diagnostics session: 1:23 minutes

1:10min 1:20min

Events

Process Memory (MB)

CPU (% of all processors)

Summary Events Memory Usage CPU Usage

Event	Time	Duration	Thread
Gesture: Gesture ev...	32.75s		[7096] M.
User Prompt: Displa...	32.75s		[7096] M.
User Prompt: Clicke...	49.83s		[7096] M.

Autos

Search (Ctrl+E) Search Depth:

Name	Value	Type

Call Stack

Name	Lang

Autos Locals Watch 1

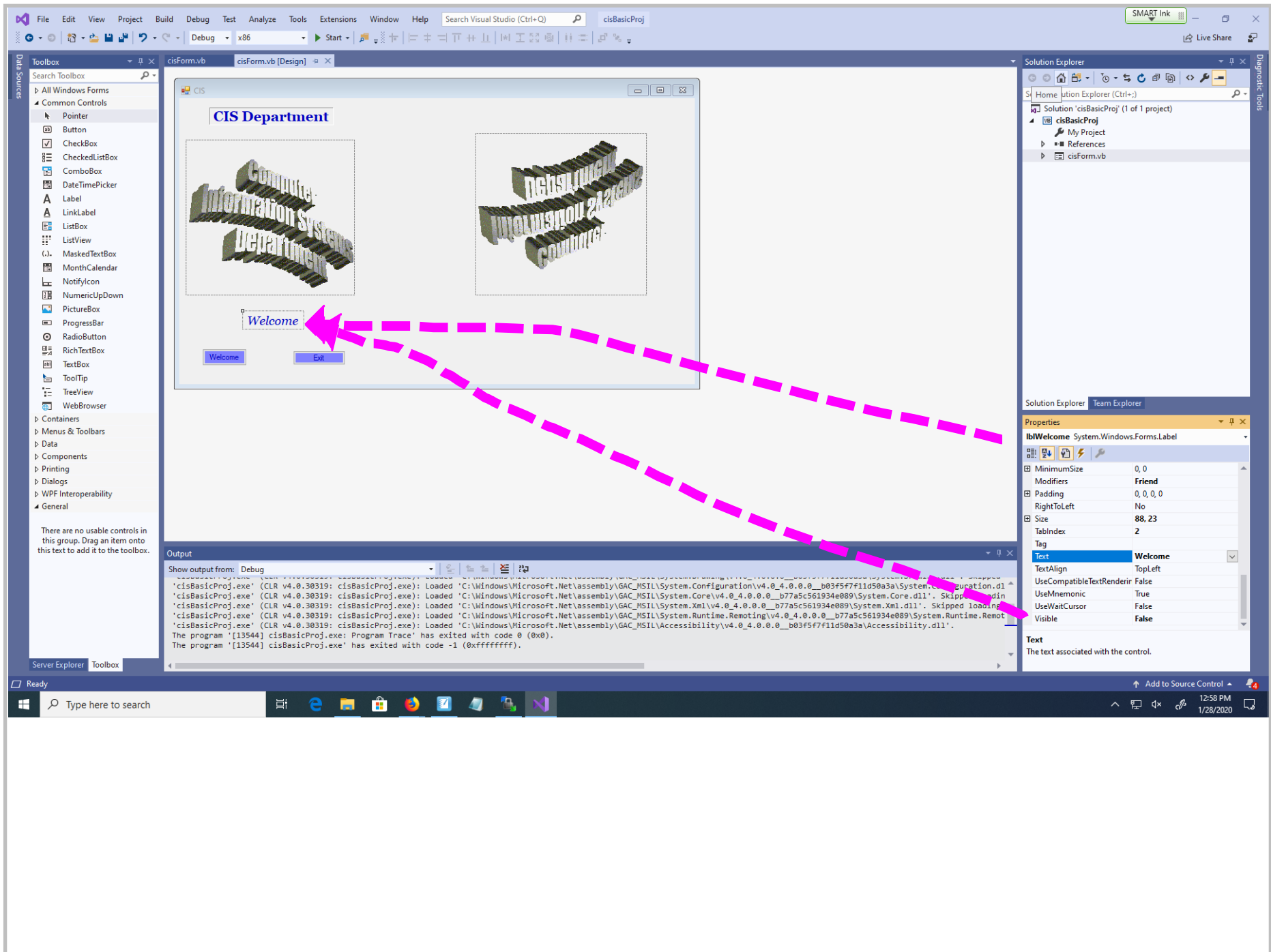
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output

Ready

Ln 4 Col 9 Ch 9 INS

Type here to search

12:57 PM 1/28/2020



File Edit View Project Build Debug Test Analyze Tools Extensions Window Help Search Visual Studio (Ctrl+Q) cisBasicProj

Debug x86 Start

Toolbox Search Toolbox

- All Windows Forms
- Common Controls
 - Pointer
 - Button
 - CheckBox
 - CheckedListBox
 - ComboBox
 - DateTimePicker
 - Label
 - LinkLabel
 - ListBox
 - ListView
 - MaskedTextBox
 - MonthCalendar
 - NotifyIcon
 - NumericUpDown
 - PictureBox
 - ProgressBar
 - RadioButton
 - RichTextBox
 - TextBox
 - ToolTip
 - TreeView
 - WebBrowser
- Containers
- Menus & Toolbars
- Data
- Components
- Printing
- Dialogs
- WPF Interoperability
- General

There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.

Server Explorer Toolbox

Search Solution Explorer (Ctrl+)

Solution 'cisBasicProj' (1 of 1 project)

- cisBasicProj
 - My Project
 - References
 - cisForm.vb

Properties

lbWelcome System.Windows.Forms.Label

MinimumSize	0, 0
Modifiers	Friend
Padding	0, 0, 0, 0
RightToLeft	No
Size	88, 23
TabIndex	2
Tag	
Text	Welcome
TextAlign	TopLeft
UseCompatibleTextRenderin	False
UseMnemonic	True
UseWaitCursor	False
Visible	False

Text

The text associated with the control.

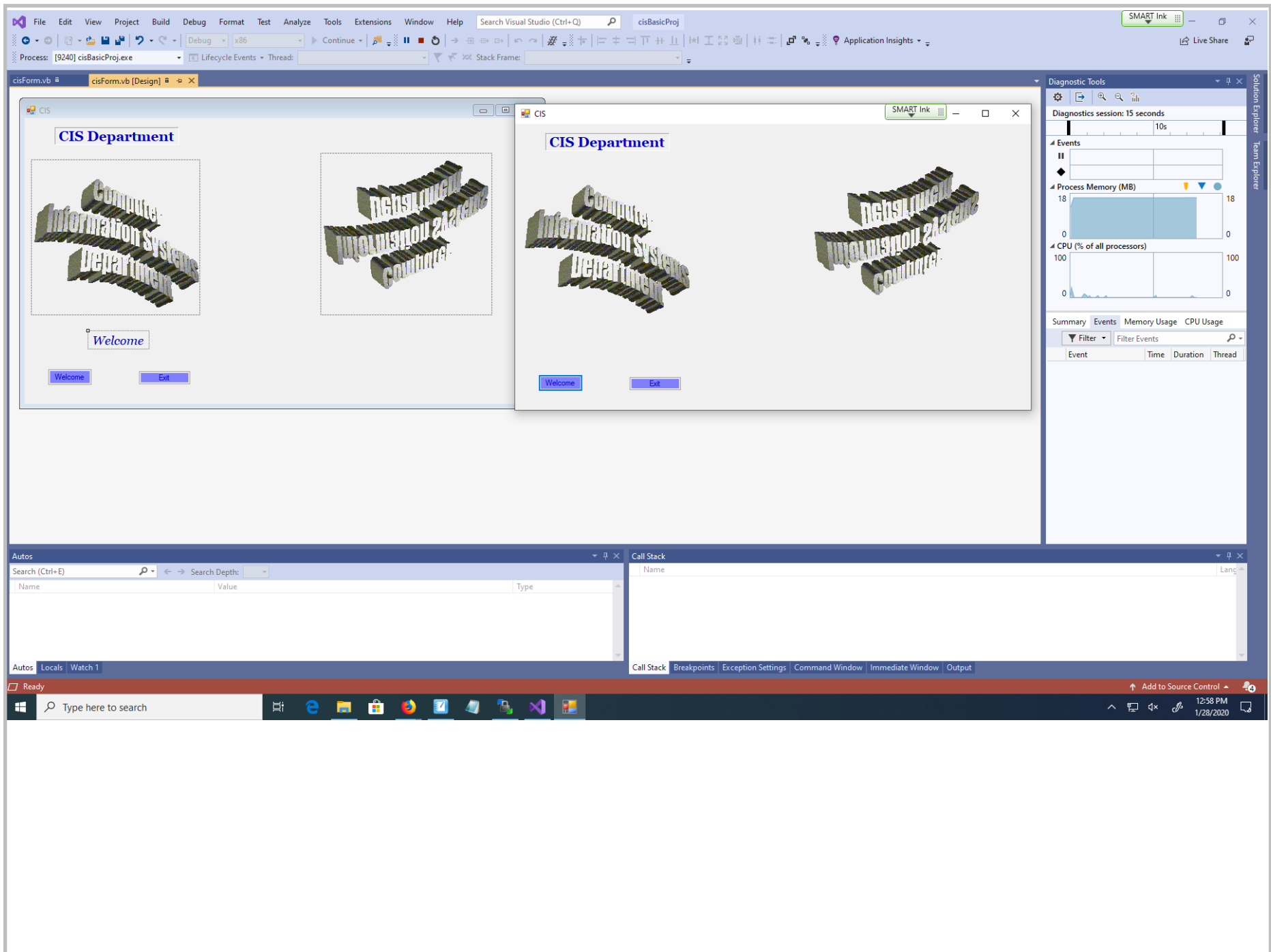
Output

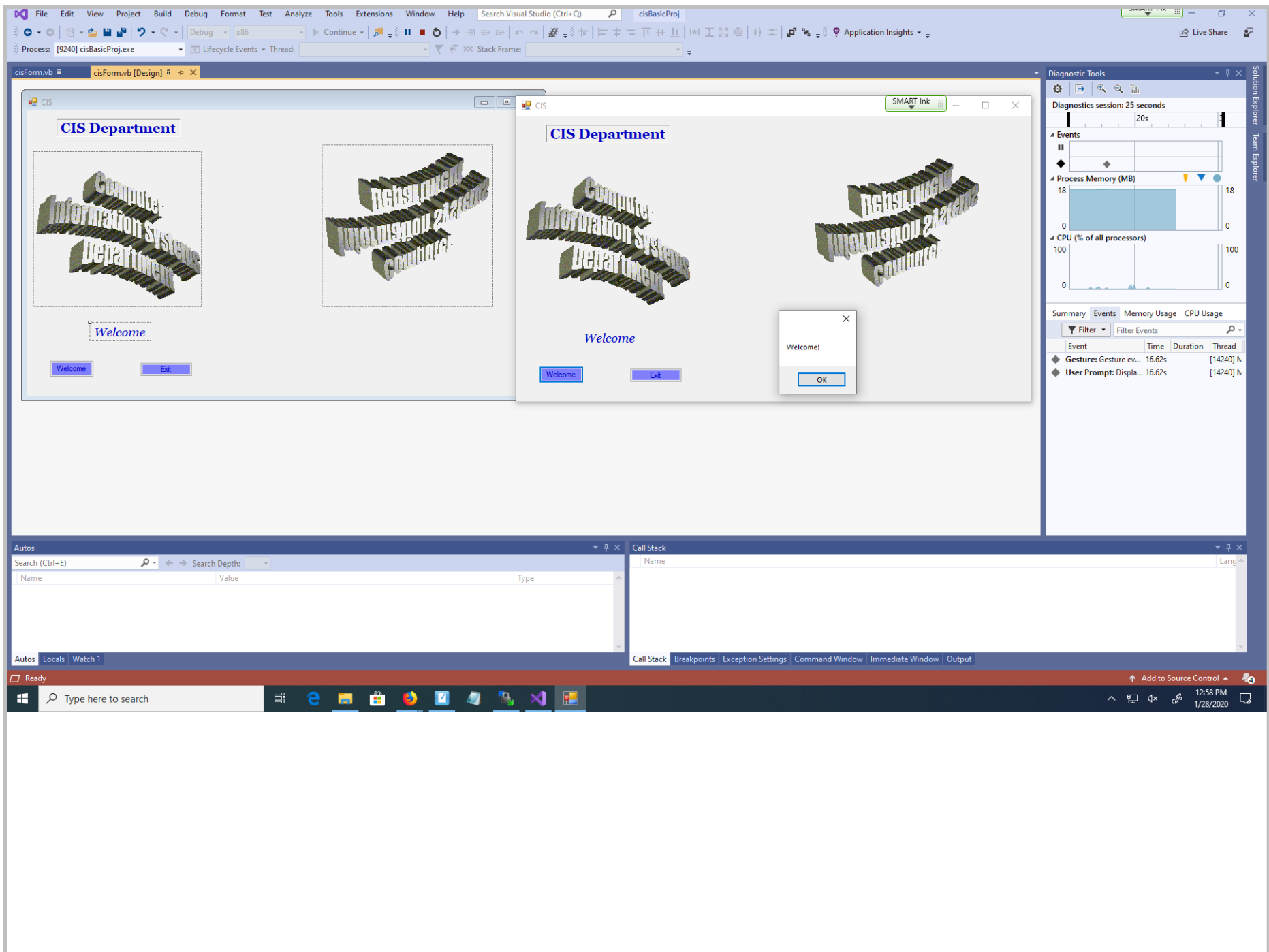
Show output from: Debug

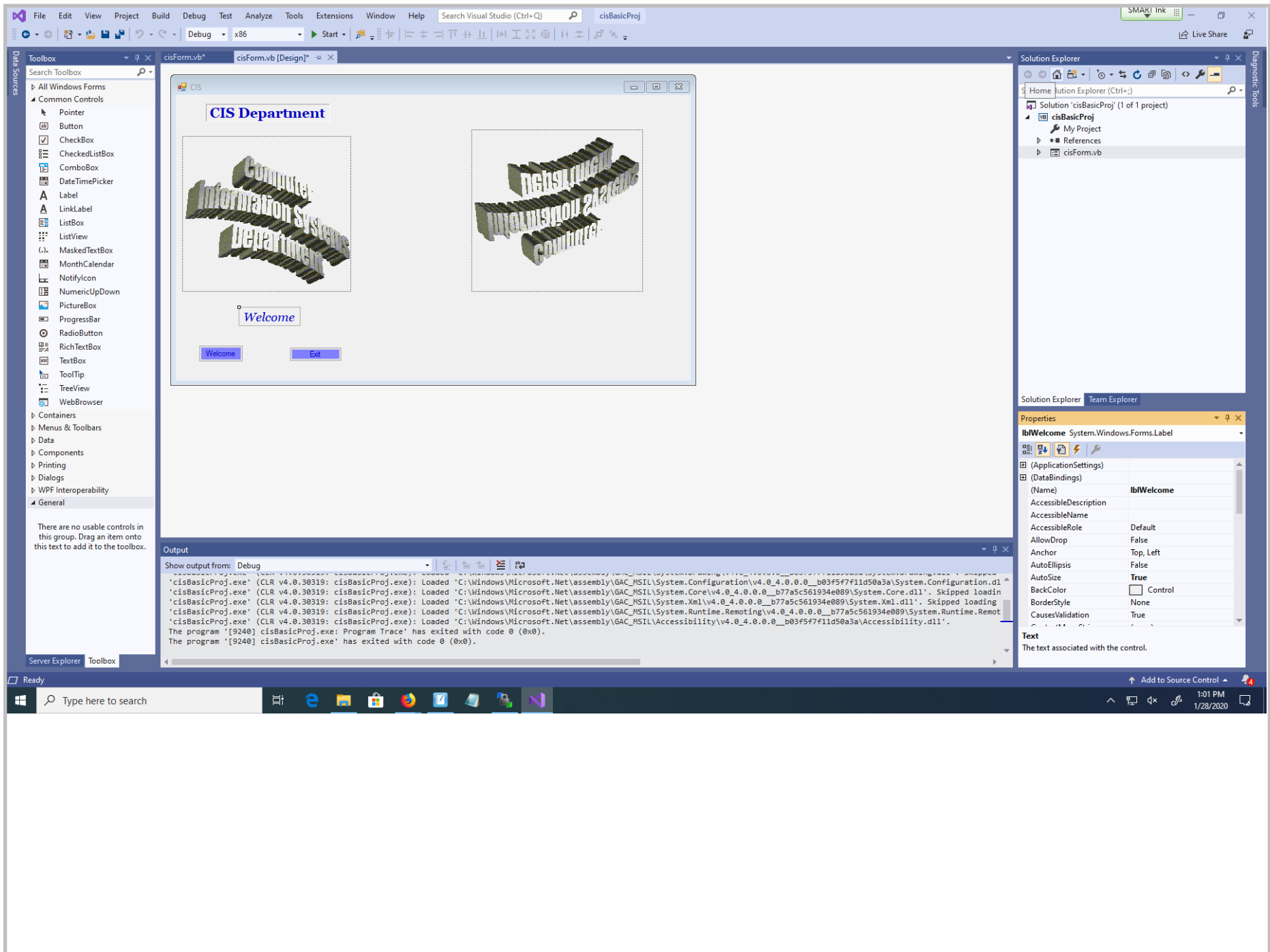
```

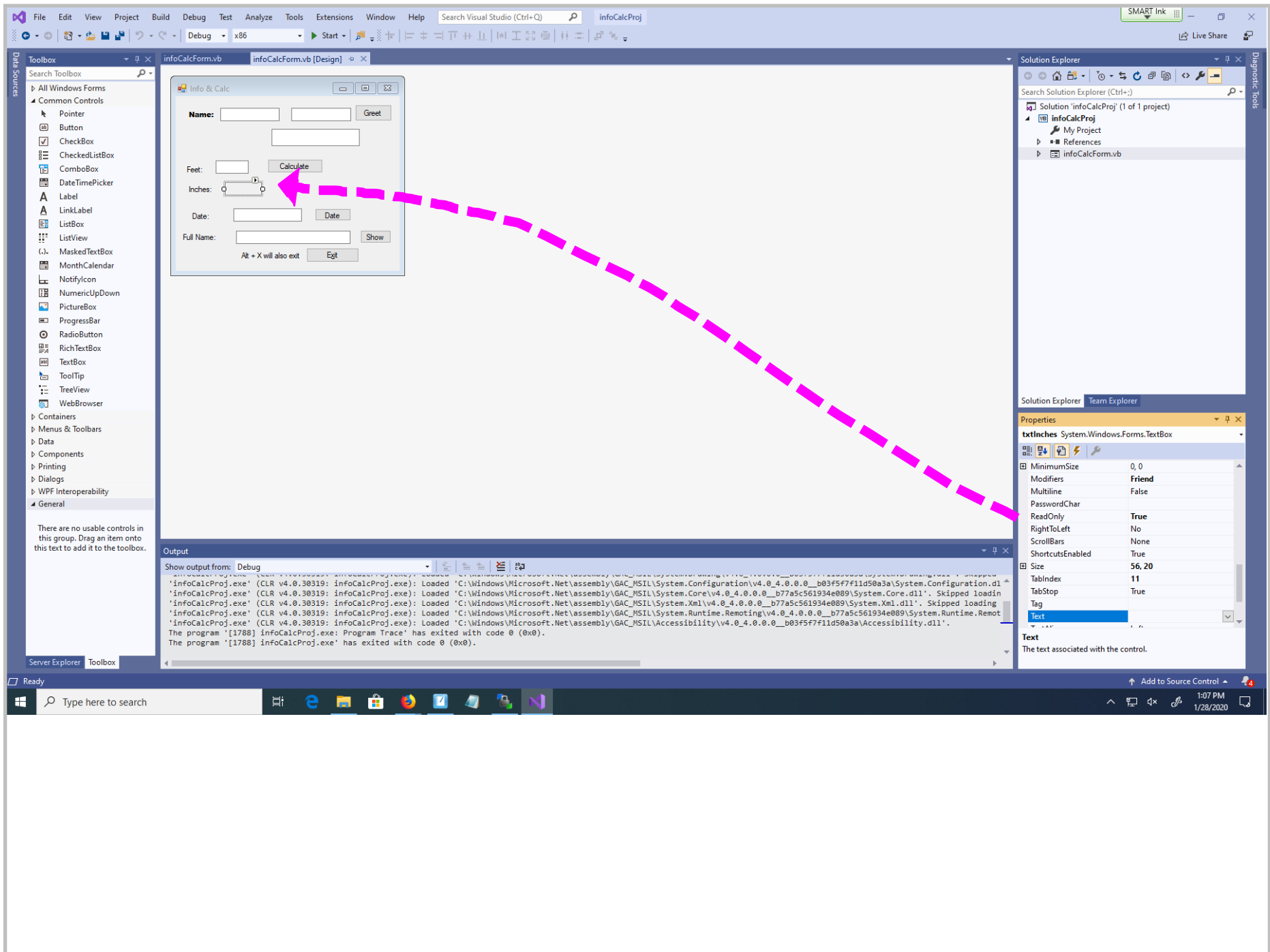
'cisBasicProj.exe' (CLR v4.0.30319: cisBasicProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Configuration\v4.0.4.0.0__b03f5f7f11d50a3a\System.Configuration.dll'. Skipped loading
'cisBasicProj.exe' (CLR v4.0.30319: cisBasicProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Core\v4.0.4.0.0__b77a5c561934e089\System.Core.dll'. Skipped loading
'cisBasicProj.exe' (CLR v4.0.30319: cisBasicProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Xml\v4.0.4.0.0__b77a5c561934e089\System.Xml.dll'. Skipped loading
'cisBasicProj.exe' (CLR v4.0.30319: cisBasicProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Runtime.Remoting\v4.0.4.0.0__b77a5c561934e089\System.Runtime.Remoting.dll'. Skipped loading
'cisBasicProj.exe' (CLR v4.0.30319: cisBasicProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\Accessibility\v4.0.4.0.0__b03f5f7f11d50a3a\Accessibility.dll'. Skipped loading
The program '[13544] cisBasicProj.exe: Program Trace' has exited with code 0 (0x0).
The program '[13544] cisBasicProj.exe' has exited with code -1 (0xffffffff).

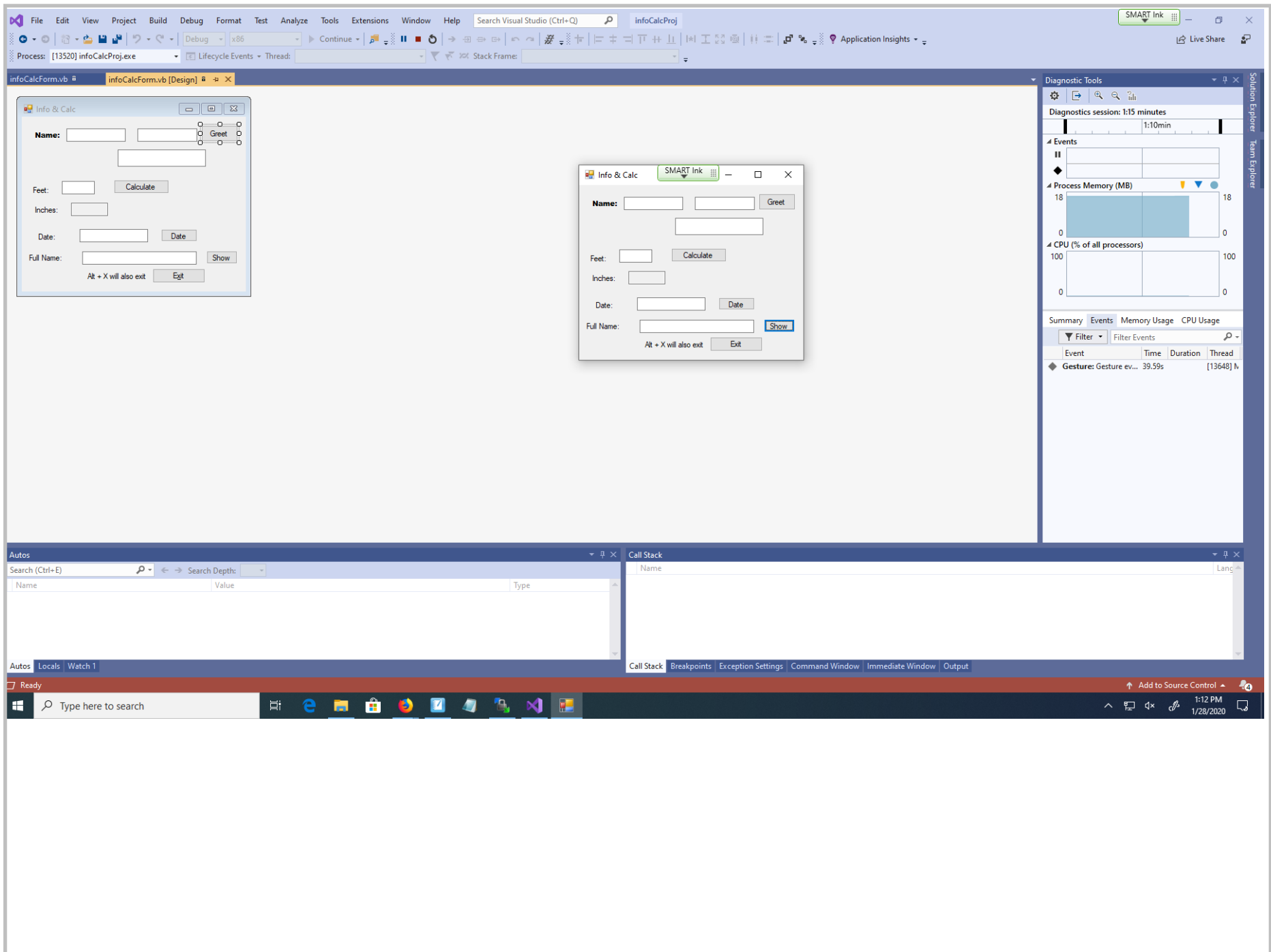
```

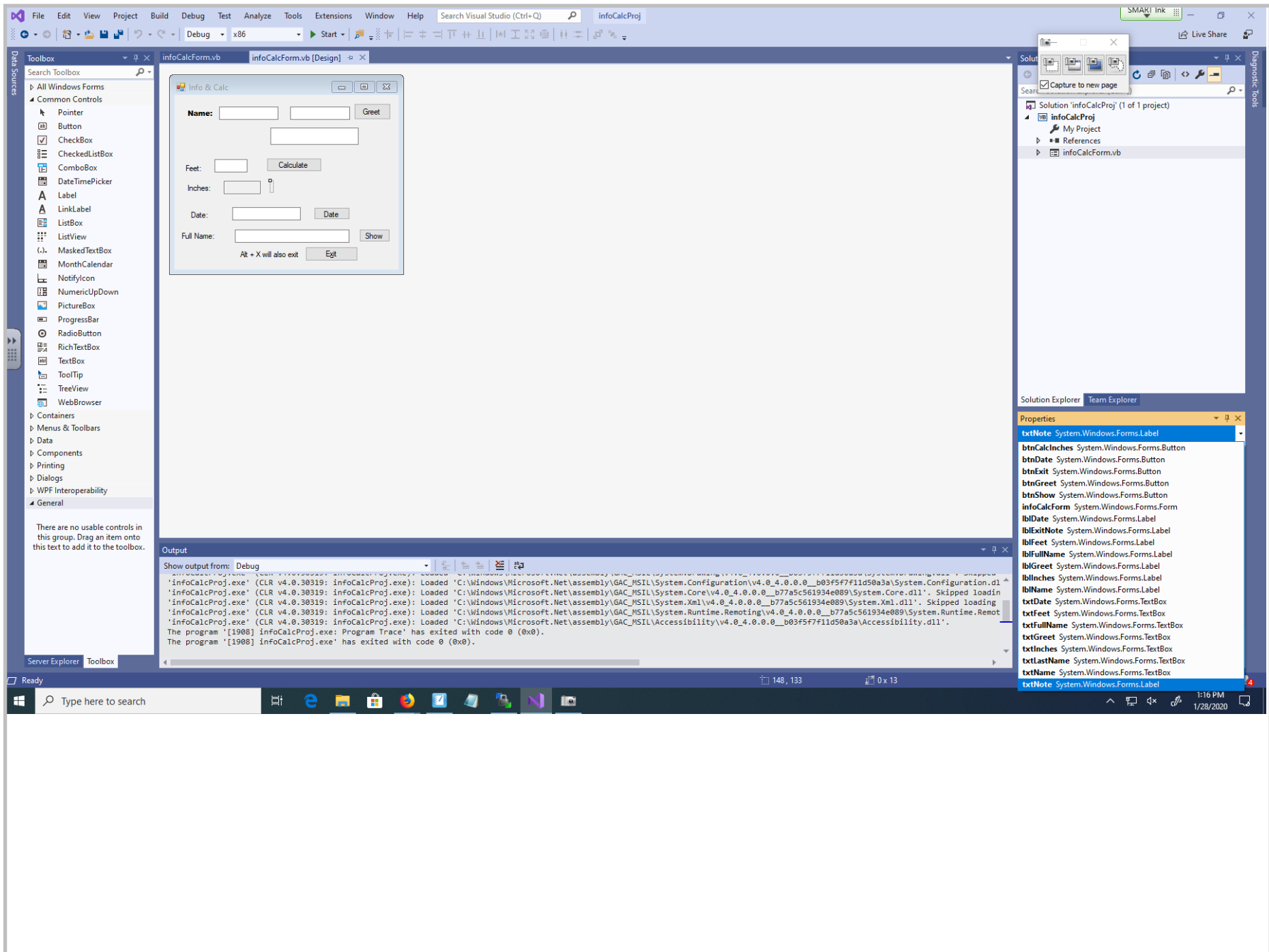


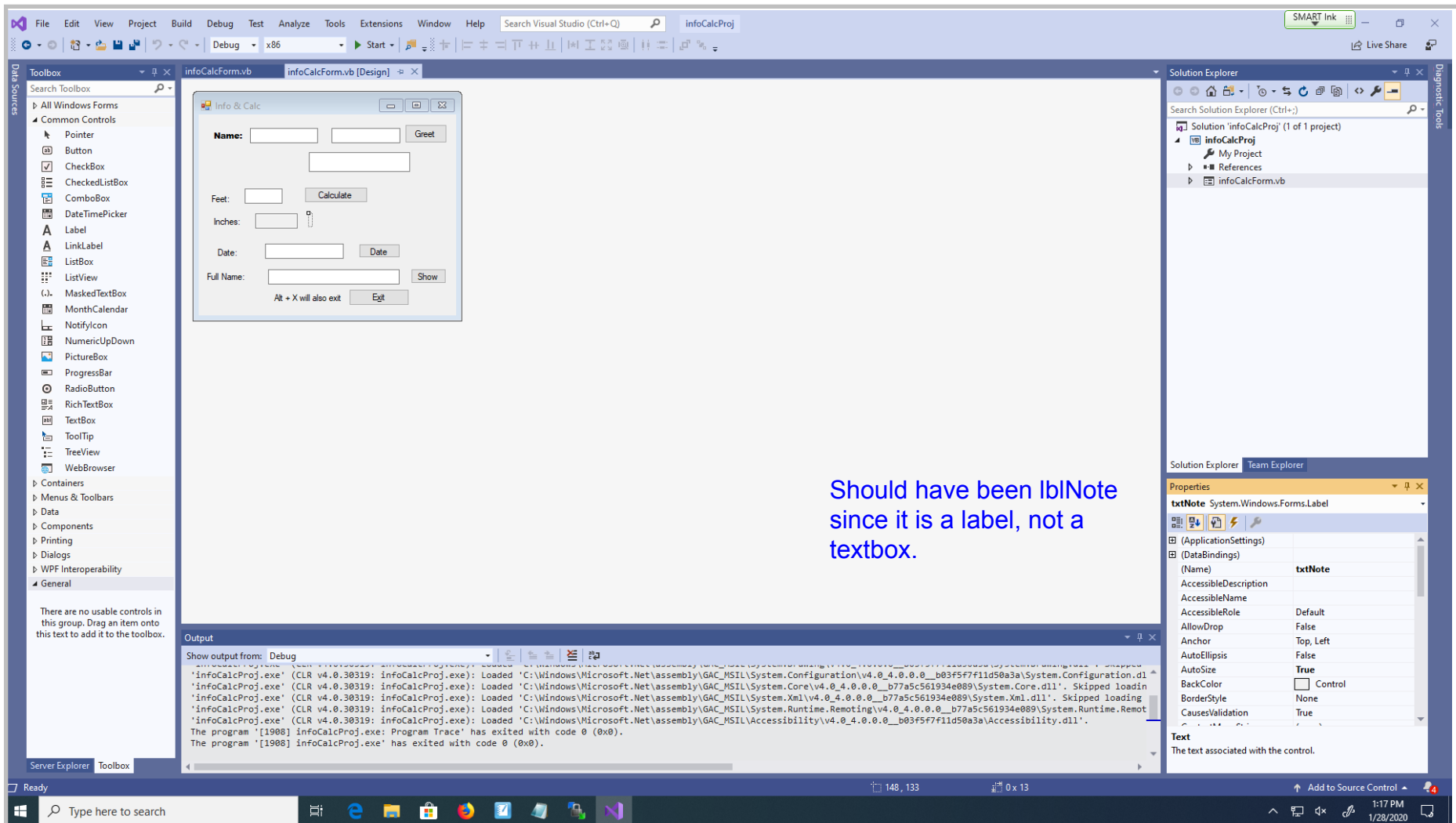


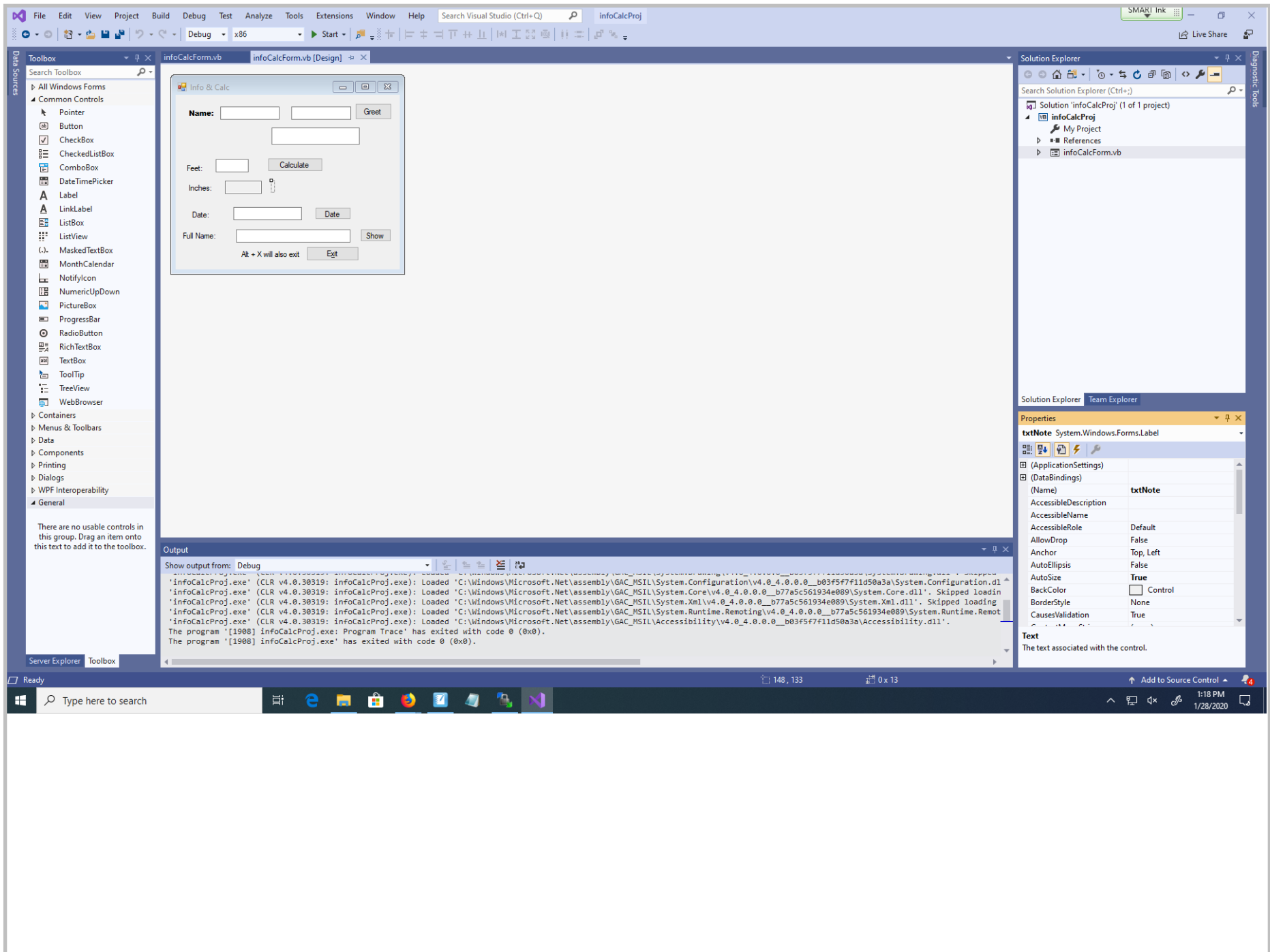












The screenshot shows the Visual Studio IDE with a VB.NET code file open. The code defines a class `varCalcForm` with several event handlers. A handwritten note in blue ink says "global - available in any sub" and points to the `gvOption` variable. The code includes:

```
1 Public Class varCalcForm
2     Dim gvOption As String
3     'Class level variable (also called global sometimes)
4     Private Sub btnMajor_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnMajor.Click
5         Dim strMajor As String = String.Empty
6         txtMajor.Text = strMajor
7         MessageBox.Show(strMajor)
8         strMajor = "CIS"
9         txtMajor.Text = strMajor
10        MessageBox.Show(strMajor)
11    End Sub
12
13    Private Sub btnProb_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnProb.Click
14        'strMajor = "Computer Info Sys"
15        'txtMajor.Text = strMajor
16        'remove the quotes to see the problem, now they are commented out
17    End Sub
18
19    Private Sub btnShow1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnShow1.Click
20        gvOption = "Programming"
21        txtShow1.Text = gvOption
22    End Sub
23
24    Private Sub btnShow2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnShow2.Click
25        gvOption = "Networking"
26        txtShow2.Text = gvOption
27    End Sub
28
29    Private Sub btnAdd_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnAdd.Click
30        txtAns.Text = Cdbl(txtFirstNum.Text) + Cdbl(txtSecondNum.Text)
31        'txtAns.Text = txtFirstNum.Text + txtSecondNum.Text
32    End Sub
33
34    Private Sub btnSubt_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnSubt.Click
35        txtAns.Text = txtFirstNum.Text - txtSecondNum.Text
36    End Sub
37
```

The Solution Explorer on the right shows the project structure: `varCalcProj` (1 of 1 project) containing `My Project`, `References`, and `varCalcForm.vb`. The Properties window is empty.

The screenshot displays the Visual Studio IDE with the following components:

- Code Editor:** Contains the code for `varCalcForm.vb`. The code includes a class `varCalcForm` with several event handlers:
 - `btnMajor_Click`: A private sub that sets `strMajor` to `String.Empty`, then `txtMajor.Text = strMajor`, and shows a message box with `strMajor`. It is annotated with "Put Str Major" and "local" (with an arrow pointing to the `Dim strMajor` line).
 - `btnProb_Click`: A private sub that sets `strMajor = "Computer Info Sys"` and `txtMajor.Text = strMajor`. A comment says "'remove the quotes' to see the problem, now they are commented out".
 - `btnShow1_Click`: A private sub that sets `gvOption = "Programming"` and `txtShow1.Text = gvOption`.
 - `btnShow2_Click`: A private sub that sets `gvOption = "Networking"` and `txtShow2.Text = gvOption`.
 - `btnAdd_Click`: A private sub that calculates `txtAns.Text = Cdbl(txtFirstNum.Text) + Cdbl(txtSecondNum.Text)`.
 - `btnSubt_Click`: A private sub that calculates `txtAns.Text = txtFirstNum.Text - txtSecondNum.Text`.
- Output Window:** Shows the following text:

```
Show output from: Debug
'varCalcProj.exe' (CLR v4.0.30319: varCalcProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Configuration\v4.0.0.0_b03f5f7f1d50a3a\System.Configuration.dll'
'varCalcProj.exe' (CLR v4.0.30319: varCalcProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Core\v4.0.0.0_b77a5c561934e089\System.Core.dll'. Skipped loading sy
'varCalcProj.exe' (CLR v4.0.30319: varCalcProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Xml\v4.0.0.0_b77a5c561934e089\System.Xml.dll'. Skipped loading sy
'varCalcProj.exe' (CLR v4.0.30319: varCalcProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\System.Runtime.Remoting\v4.0.0.0_b77a5c561934e089\System.Runtime.Remotin
'varCalcProj.exe' (CLR v4.0.30319: varCalcProj.exe): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_MSIL\Accessibility\v4.0.0.0_b03f5f7f1d50a3a\Accessibility.dll'.
The program '[14476] varCalcProj.exe: Program Trace' has exited with code 0 (0x0).
The program '[14476] varCalcProj.exe' has exited with code -1 (0xffffffff).
```

The image shows a Visual Studio IDE window with a VB.NET code file open. The code defines a class `varCalcForm` with several event handlers. A handwritten red note "*global*" is written over the class-level variable declarations. A floating application titled "Var & Calc" is overlaid on the right side of the code editor. The application has a "Problem" tab selected, showing a form with input fields and buttons for "Show1", "Show2", "Add", "Subtract", "Multiply", "Divide", "AnotherAdd", "Convert to Integer", "Convert to String CStr", "Convert to String ToString", and "Convert to String Currency". The Windows taskbar at the bottom shows the time as 1:26 PM on 1/28/2020.

```
1 Public Class varCalcForm
2     Dim gvOption As String
3     Dim strMajor As String
4     'Class level variable (also called global sometimes)
5     Private Sub btnMajor_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnMajor.Click
6         Dim strMajor As String = String.Empty
7         txtMajor.Text = strMajor
8         MessageBox.Show(strMajor)
9         strMajor = "CIS"
10        txtMajor.Text = strMajor
11        MessageBox.Show(strMajor)
12    End Sub
13
14    Private Sub btnProb_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnProb.Click
15        strMajor = "Computer Info Sys"
16        txtMajor.Text = strMajor
17        'remove the quotes to see the problem, now they are commented out
18    End Sub
19
20    Private Sub btnShow1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnShow1.Click
21        gvOption = "Programming"
22        txtShow1.Text = gvOption
23    End Sub
24
25    Private Sub btnShow2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnShow2.Click
26        gvOption = "Networking"
27        txtShow2.Text = gvOption
28    End Sub
29
30    Private Sub btnAdd_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnAdd.Click
31        txtAns.Text = CDbl(txtFirstNum.Text) + CDbl(txtSecondNum.Text)
32        'txtAns.Text = txtFirstNum.Text + txtSecondNum.Text
33    End Sub
34
35    Private Sub btnSubt_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnSubt.Click
```

