We will be using Microsoft Visual Studio 2017 for all of the programming assignments in this class. Visual Studio is available on the campus network. For your personal computer you can use Visual Studio Express for Windows Desktop which can be downloaded from http://www.visualstudio.com/en-us/products/visual-studio-express-vs.aspx Download Visual Studio Community 2017 for Windows Desktop.

These note explain how to create a new project using Visual Studio in C#, save it to a compressed zip folder, and submit it to the Engr 123 homework link.

Setting up Visual Studio
If you open Visual Studio for the first time it may ask you which environment you want to use. Choose the *C# Language*, although the *General Environment* is OK. Visual Studio then opens with the *Start Page*. Click on *Tools → Options → Startup* and set the start up so that it never downloads the news and opens to an empty environment as shown in Figure 1.
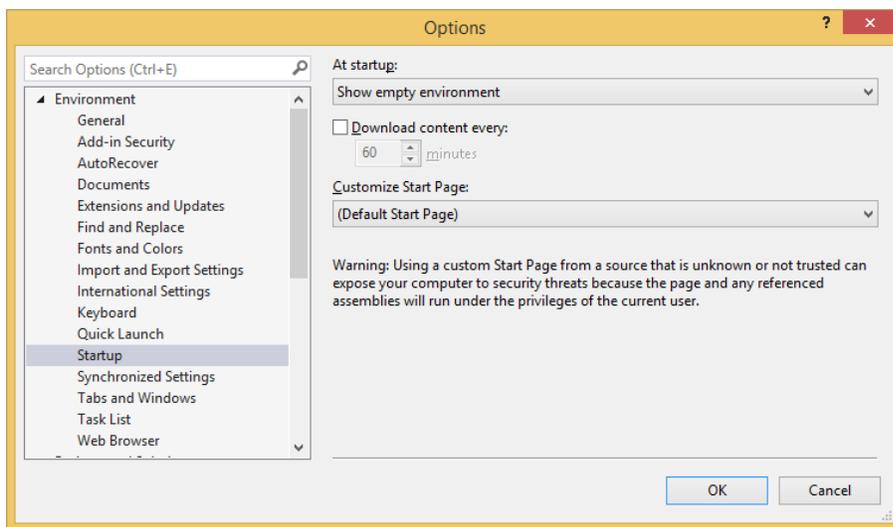

Figure 1
Click on Tools → Options → Startup and set the start up to look like this.

Click OK and then go to *Tools → Options → Text Editor → All Languages → Tabs* and set the options to look like that in Figure 2. The option which replaces tabs with spaces is critical to maintaining formatting for grading.

Next click on *Tools → Options → C# → Formatting → Indentation* and choose the options shown in Figure 3.

Finally, click on *Tools → Options → C# → Formatting → New Line* and select all of the options as shown in Figure 4.
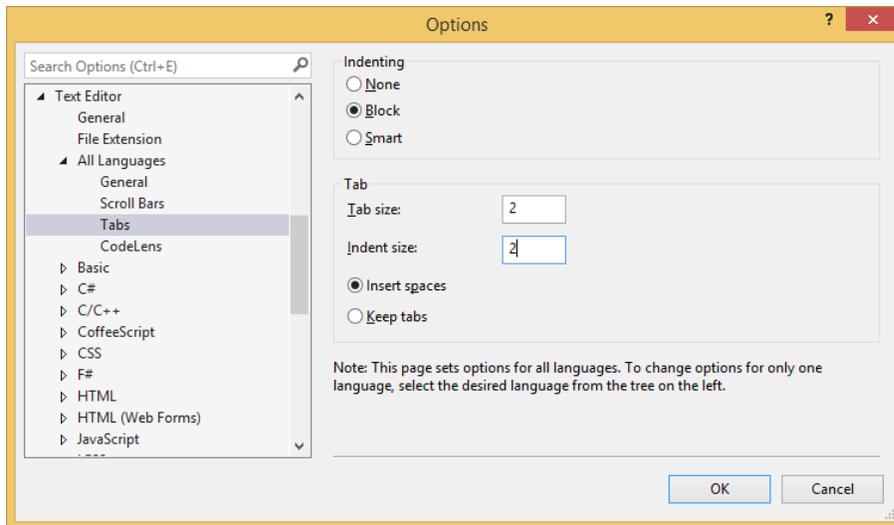
Figure 2

Click on Tools → Options → Text Editor → All Languages → Tabs and select block indenting, tab and indent size of 2, and most importantly choose the option to replace tabs with spaces.
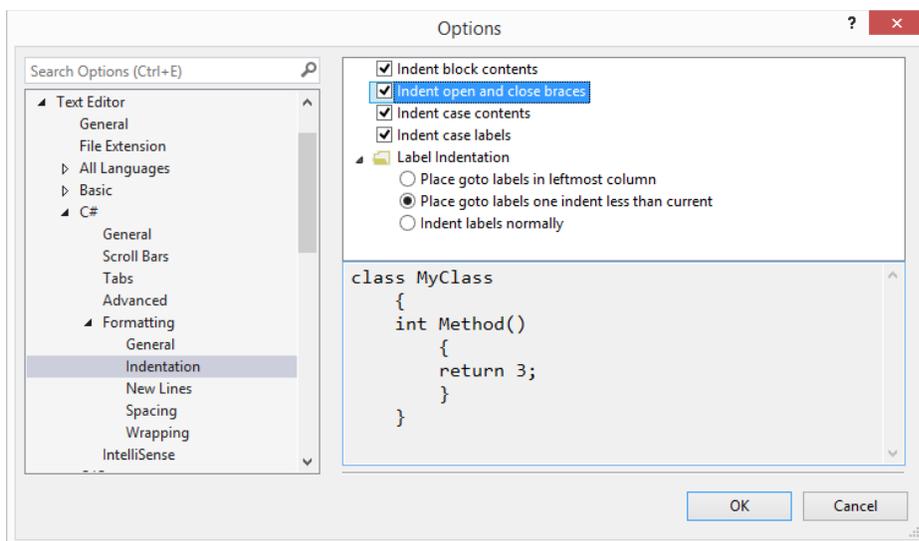

Figure 3

Click on Tools → Options → C# → Formatting → Indentation. Set the options as shown.
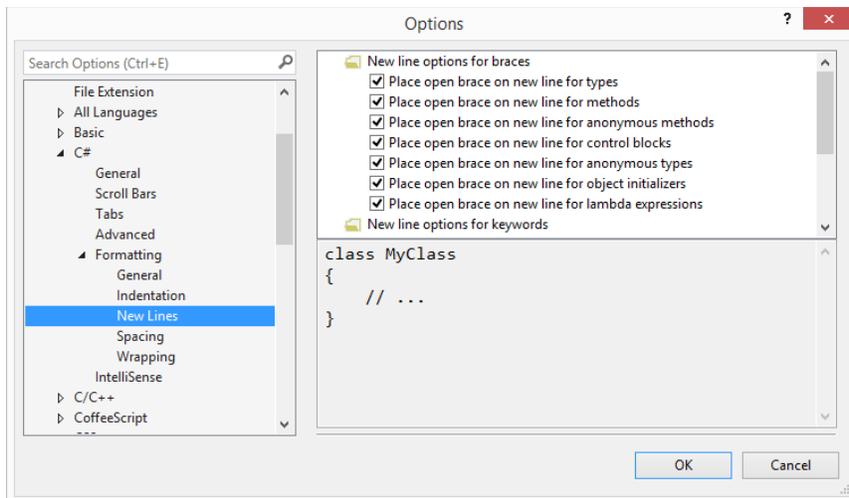
Figure 4
Click on *Tools → Options → C# → Formatting → New Line* and choose all of the options. Don't forget to scroll down the options page.

If you move to a new computer in the lab you will have to set up these options again – otherwise, they need not be changed.

Creating a New Project
To create a new project click on *File → New → Project* as shown in Figure 5. This will lead to the *new project window* shown in Figure 6.
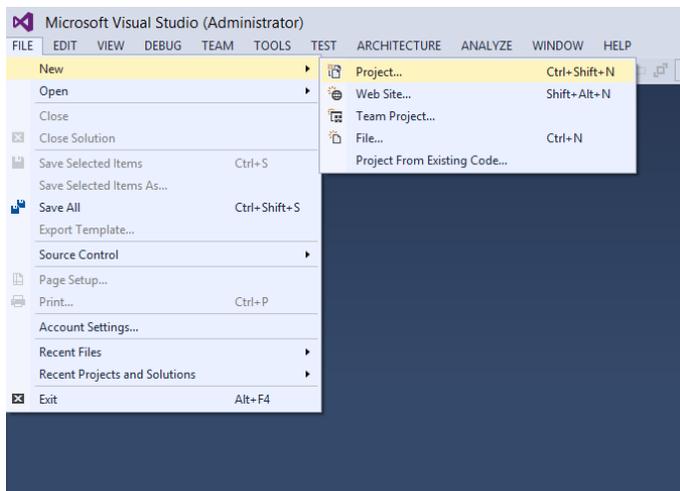

Figure 5
Click on File → New → Project to create a new project.

In Figure 6 the left most pane you can choose the language you want to use for your project. In Engr 123 everything will be in C# for windows. The center pane allows you to choose the type of project you are going to produce. For the first third of this class we will use a *Console Application*. At the bottom of the center pane we choose the project name and its location. For this project I have chosen *Asn0* as the project name and I am saving it to
`C:\Courses\Engr123\C#2018\`. As a student it is best if you save your project to either the

desktop or to a local thumb drive. Saving a project to your network drive may cause problems later when we do projects requiring file access. The *Solution name* will, by default be the same name as the project name. In the bottom right be sure to click the box that says *Create directory for solution*. Click *OK* to create the project. The project window will open as shown in Figure 7.
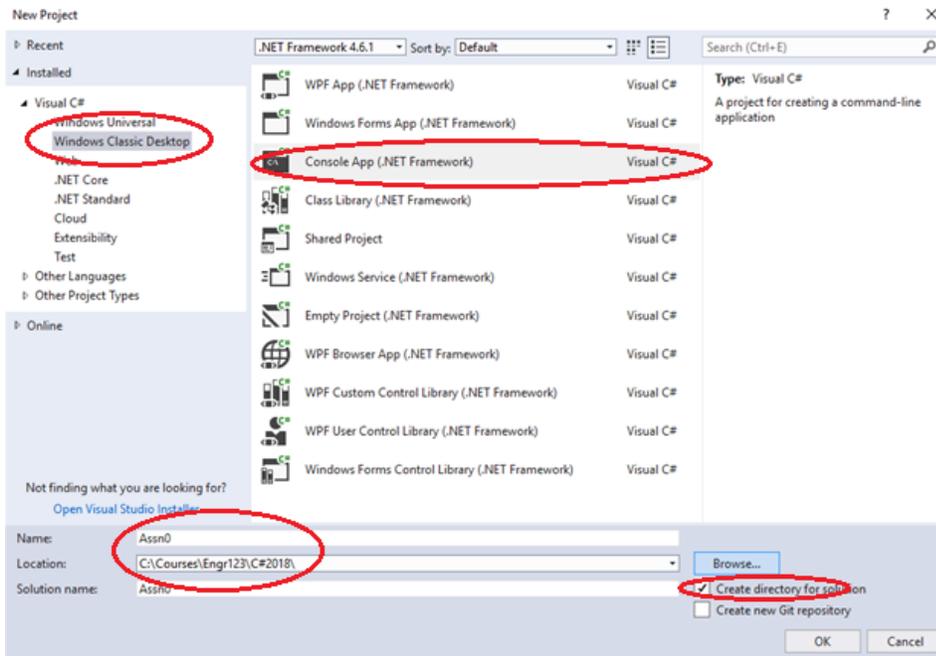

Figure 6
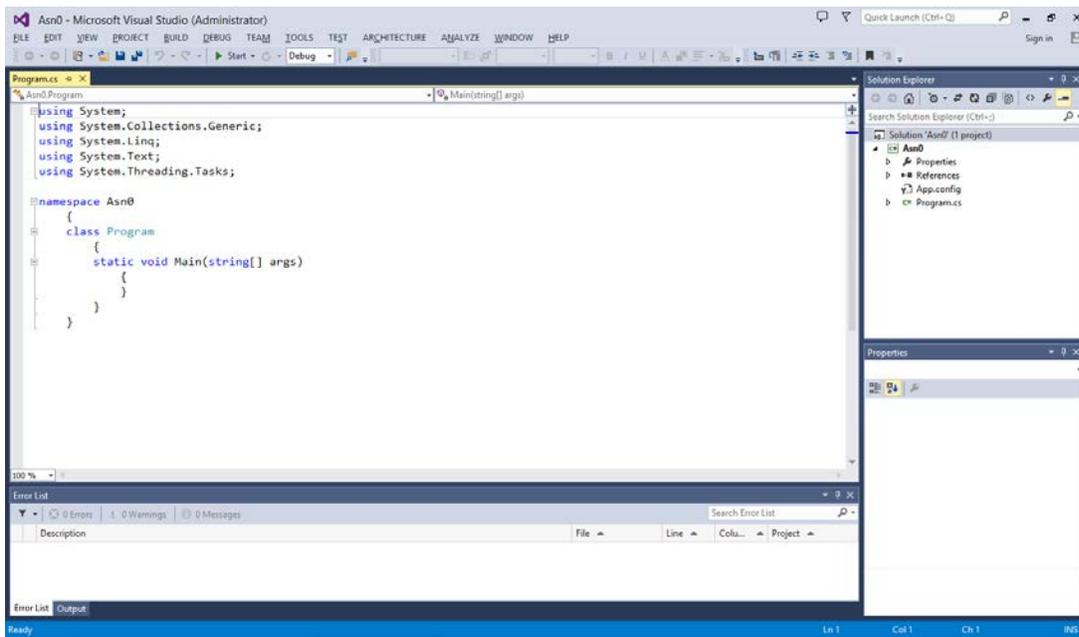The new project window.

Figure 7
Project window for Asn0.

In Figure 7 there are three panes: Program.cs, Solution Explorer, Properties, and Error List. The Error List window may compressed at the bottom of your screen but you can use the cursor to pull it up. If the Solution Explorer or Properties or Error List windows are missing you can click on *View* and select those panes from the view menu.

The Solutions Explorer is shown in Figure 8. This gives a list of all of the files that are associated with your project. The *References* section contains a list of mostly libraries that your program can use where each library contains a long list of functions. Most references are placed in this list automatically by Visual Studio but later we will learn to manually add references to a project. The line labeled Program.cs has a list of the program files in the project. We see that a *Main* program skeleton already exists.
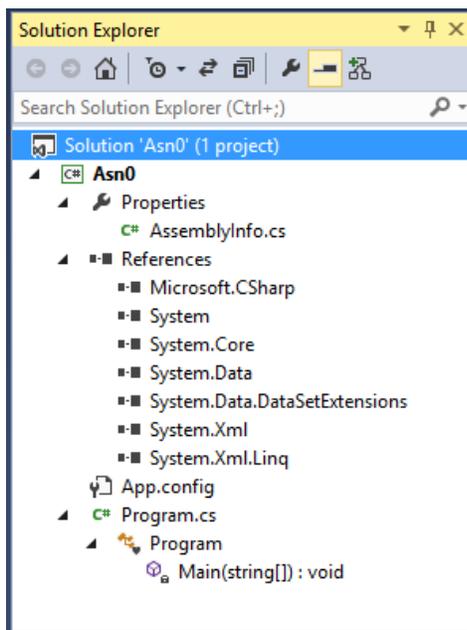

Figure 8
The Solutions Explorer pane.

The Program.cs pane is a text editor where we can enter the program we are going to write. Visual Studio has already written the main program outline for us based on our choice of a *Console* type project. The Program.cs pane is in Figure 9.
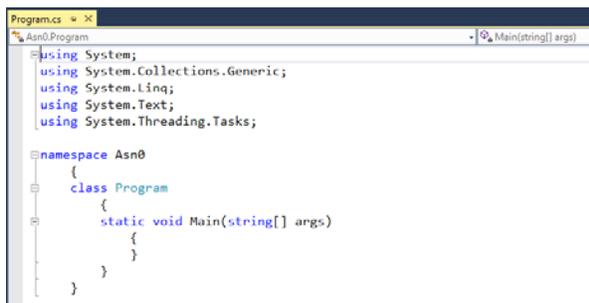

Figure 9
The Program.cs pane that has the main program.

The program that Visual Studio has written is complete and can be compiled and executed. To do this click on *Debug → Start without debugging*. This will produce the console output window (which is black) with the message "Press any key to continue …".

For Asn0 we will enter the program code on the following page. You can copy this entire page and paste it into the Program.cs pane to replace the skeleton program that Visual Studio created. Note that if you changed your project name to something other than Asn0, you will need to change the namespace in the code to match your project name.

After you copy the source code from the following page into your project change the comments (in green) at the top so that the source code has your name in place of the words "Your Name". Also replace the words "Today's Date" with the actual date.

Click on Build → Build Solution. At the very bottom of the screen you should see the words "build succeeded". If not, get your instructor to help you correct the errors.

Click on Debug → Start without debugging. This will run the program. A console window will appear with a prompt for a value for x. Enter 3.3 for the value for x and push Return on the keyboard.

Your console window should say the following:
```
Enter a value for x...3.3
y = 108.7584
Press any key to continue . . .
```

Push any key to get back to Visual Studio. Exit Visual Studio by clicking on File → Exit.

In Windows click on the Start Button in the bottom left and click on Computer. Use the mouse to find the location of your Asn0 file. It will be a single folder named Asn0 at the location where you saved the project.

Right click on the Asn0 folder and select Send to → Compressed (zipped) Folder. This will create a new file named Asn0.zip. Rename this file Asn0XXX.zip where XXX is your three initials. Once you have the zipped file that contains the project and the design, upload it to `\\cecsfp01\users\everyone\Engr123`. To do this click on the file explorer icon

at the bottom left corner of the desktop . When the file explorer open you will see a screen whose top part looks like this:
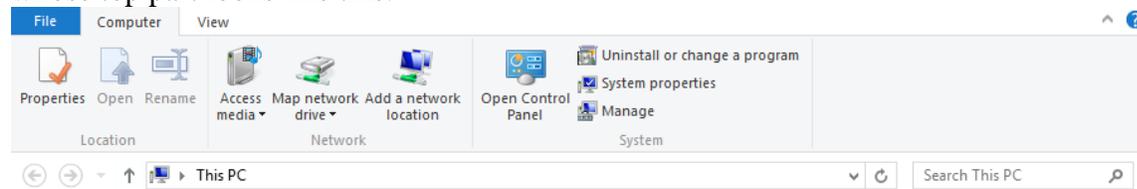
Type `\\cecsfp01` where it says "This PC" and click on *users → everyone → Engr123*. Drag and drop your zipped folder to this location.

```csharp
//Your Name
//Assignment 0: First day
//Today's Date
//
//This program prompts the user to enter a value for x.  It calculates
//  and prints a value for y given by y = 3.2x^3 + 4x^2 - 16x + 3.
//
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace Asn0
  {class Program
    {static void Main(string[] args)
      {double x, y;
       string sTmp;
       Console.Write("Enter a value for x...");  //Prompt for a value of x
       sTmp = Console.ReadLine();                //input is a string
       x = Convert.ToDouble(sTmp);               //Convert input to double
       y = 3.2*Math.Pow(x, 3) + 4*x*x - 16*x + 3;//Calculate y
       Console.Write("y = ");                    //Print y's value
       Console.WriteLine(y);
      }
    }
  }
```