

Engr 123
Assignment 09
Plot and the Charting tool

Assigned: April 17, 2019
Due: April 30, 2019
Not accepted late

Write a C# program to plot a polynomial in the Cartesian plane. Your program should use the *chart* tool in the C# forms toolbox. For input your program will need the polynomial coefficients, the x and y scale numbers, and the title for the chart. The polynomial coefficients should be entered into a text box, separated by spaces or commas as doubles. For example the polynomial given by:

$$y = 4x^3 - 10.9x^2 + 3.2x - 9$$

Would be entered as

4 -10.9 3.2 -9

or as

4, -10.9, 3.2, -9

Your program should accept either format.

Your user GUI should look something like that in Figure 1.

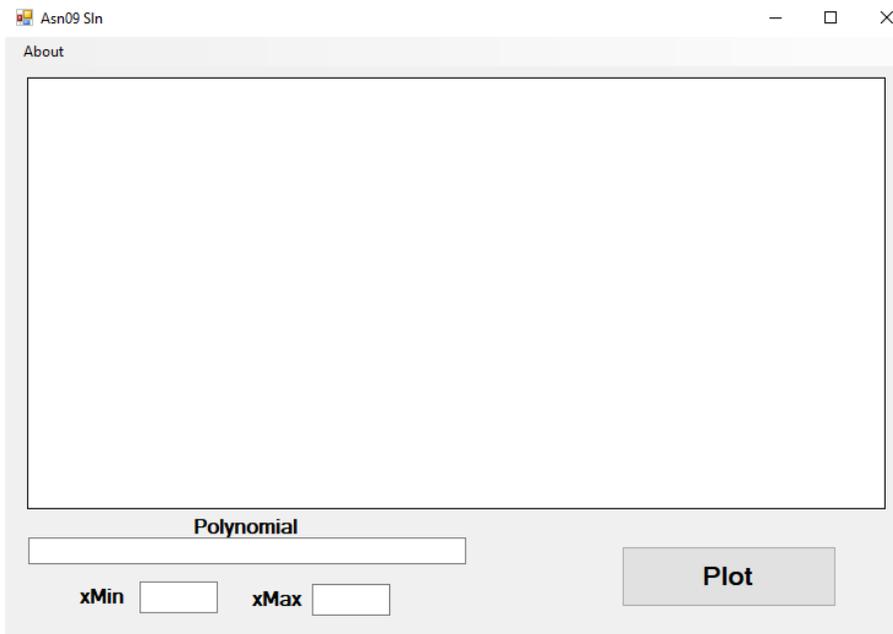


Figure 1

Typical GUI for assignment 9.

In Figure 1 the large open area in the middle is the chart tool which is listed in the Forms tool box under the *Data* items.

Your program should warn the user about incorrect formats in the polynomial or in the entry of xMin and xMax (for example if xMax is less than xMin). The user should also be able to enter a polynomial and get a plot and change the values in the polynomial or in the xMin and xMax numbers to get a replot without restarting the program.

Note that the range of values will always be from x_{Min} to x_{Max} but you should fix the number of terms to 1024 so that the increment in x is $(x_{\text{Max}} - x_{\text{Min}})/1024$.

Your project should also have a menu item called About. When the user click on About you should display a second window which gives some information about the program. A sample About box is shown in Figure 2.

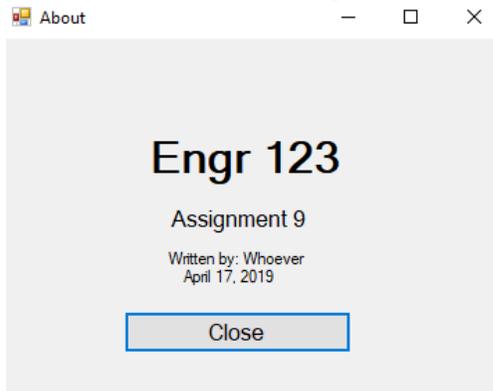


Figure 2
Typical About box

After you get your program running correctly, place a copy of the design into the project folder as a doc or docx file. Right click on the *project folder* and choose Send To → Compressed zip file. Rename the compressed zip file as Asn08XXX.zip where XXX are you three initials. Upload the renamed file to <\\cecsfp01\users\everyone\engr123>.