Modify Homework 6 to add the following requirements.

After the data is plotted, use a pop-up menu that will allow the user to select: Linear, Polynomial, Spline, Semi-log or Log-Log fit.

Use the script from the previous homework to select the color and symbol type, and line color and type, but modify them so they use a menu for all the options.

If the user selects the Linear option, use the script from HW6 to find the best fit curve.

For the polynomial option use the polyfit command. Make sure you check for the max degree.

For the spline option, just plot the points and the spline fit. Use at least 300 points to generate the spline graph.

For the Semi-log and log-log sections, be aware that a common problem when fitting data to exponential or power functions are data that are less than or equal to zero. The log of a non-positive number is undefined. Thus, the semi-log and log-log sections should filter the data. Use the polyfit and polyval commands to generate the best fit curves. Be careful. You will be fitting a linear line, thus the data you enter into the polyfit command must produce a linear line.

In all the options, (except the SPLINE) find the following:
- The largest absolute error, and the x location associated with this error.
- The largest relative error, and the x location associated with this error.

For all the options except the SPLINE and polynomial
- Add the equation to the graph
- Calculate the r-squared value.
- Add the r-squared value to the graph

Use the 2 data sets from homework 6 to test your script. For each case insert the data into Excel and verify the equations and r squared values.

Deliverable:
Each group should turn in a folder with the Matlab script.

Note: Your script must have a header section in comments that identifies:
  Team members
  Engineering 0711 M,W 04:00-06:00
  Instructor:
  Date:
  Assignment number (i.e., Homework 7)
  Statement of the purpose of script
  Throughout the script use comments to define the purpose of every variable.

Also, you will be graded on programming style. Use whitespace, comments, indenting, etc.