**CS345 Lab# 1 – Plot Data Points**

1. Use the OpenFile common dialog box to select a file to open and read.
2. The data in the data file will contain one x,y pair per line, for example:
   1. 1.3
3. 2.6

3.0 3.9

4.61 6

1. Your program should
   * Determine the size of the graph
     1. The width of the graph should be 10% larger than the data width (largest x – smallest x). So, for example, data with an x-coordinate range of 0 to 100 should display the range -5 to 105.
     2. The height of the graph should be 10% larger than the data height (largest y – smallest y).
   * Set world coordinates so that the data can be plotted using the world-coordinate system. The y-coordinate should get larger as it proceeds up the screen.
   * Plot the data as a line connecting all the points. The default color should be red, but users should be able to change the color using the ColorDialog. Individual points specified in the file should appear as small circles centered on the point. The points should have a diameter equal to the larger of 1/100 of the smaller of screen height and

Width, and not less than 1 pixel.

* + Place tic-marks along all four sides of the graph. Tic marks should demark the graph in halves, quarters, and eighths. The lines should be 1 pixel in width.
  + Draw the x and y axes. Use the same tic marks used for the sides.
  + As you move the mouse over the graph, the world-coordinates should display in the title bar.
  + Right-click to zoom-in, centered on the point clicked (by a factor of 1.5)
  + Left-click to zoom-out, centered on the point clicked (by a factor of 1.5)
  + Mark the point with the largest y value with the word “maxY.”
  + Mark the point with the smallest y value with the word “minY.”