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Comp Sci 155N

Final Project

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For my final project, I chose to do the default option of making a GUI that plots a graph. GUI’s can be used in a variety of ways, and I think this project is a great example of a simple way to apply what we have learned in this class. Overall, I didn’t think this project was too hard, but there were a lot of pieces to get done for one GUI. I split up the project into smaller sections and started working on finishing it all piece by piece. I did encounter some difficulties throughout this process, but I was able to work through them and got a final code that functioned properly.

The first problem I had was making sure that all the boxes, buttons, text, and plot were arranged on the figure so that they didn’t interfere with each other. It took some practice, but eventually I got the hang of how to adjust the locations slightly so that I could place everything exactly how I wanted. I made sure that the plot was centered, and that the title box was at the top and the axis labels corresponded with the x- and y- axis. I put the two button groups that I designed on the right side of the graph so that they were out of the way, but still easily accessed. One was for changing the color, and the other changed the line type of the plot. Then, I added boxes so that the user can change the x- and y- limits of the graph. The default is to just make the limits as the smallest input for the x and y values, but this allows it so that the user can essentially zoom in and out of their graph to see individual parts if they want to. Finally, the top left has the boxes to actually input the x and y values that the user wants to plot on their graph. At first, sometimes the text and edit boxes would overlap, but I just worked through the placement and sizing to make sure they all fit nicely.

Another major problem I encountered was working with the call back functions. The overall plotting one that is called with the run function was long and had many loops within it. It took a long time to work through all of the loops within it that check for all of the errors and to plot the graph. I used a lot of if and for loops within the larger callback that applied the different pieces I mentioned before. I was also able to apply another concept from this class within my GUI: regular expressions. I used a regular expression to make sure that all of the inputs were actually numbers that can be applied and graphed. If any of the inputs are letters or other characters that shouldn’t be input, a message box pops up and tells the users that the inputs are invalid.

I thought that this project was really fun and I liked how we applied using GUI’s to a simple problem like making a graph. It was interesting to compare this to how we plotted temperatures towards the beginning of the semester for a homework. It was cool to see that you can apply coding concepts to a GUI that can be edited and changed at any moment. In the future, I think it would be cool to use GUI’s for different engineering problems. I could probably make a GUI for various projects, it would make my projects unique which might be fun for the professors to see.