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Coding Final Report

For the most part, this final was fairly difficult in our opinion. I both had enjoyed coding and found that understanding the basic parts of matlab was very easy. However, both of us also agreed that recursion methods and gui coding is a lot more complex and difficult to deal with. For recursion, the difficult part is figuring out how to set your functions up so they call each other correctly and output an expected answer. Gui coding is difficult because the debugging process takes a while, and it is also very new to us. I chose to do the default project because I both felt that I had a good understanding of what type of code goes into plots. The shaky part for us, was making sure the gui coding interacts with the plot correctly. I was intending to set up our plot as desmos except rather than imputing functions, you can input various different ordered pairs and see a plot. I also decided to make two button groups, one for determining color and other for determining the shape of the points plotted. I felt that a radio button group would be a good way of toggling between preset colors or shapes that makes interacting with the plot a bit more fun and customizable. I also left a blank edit box for a title, as well as edit boxes for customizable axis limits. The basis of our code wasn't very difficult. I used the animateWeather as reference as well as referencing previous labs for other specificities. For example, I referenced earlier labs to remind us on how to plot and customize the appearances of the plot. I also used Lab 10 as reference for more GUI coding since I am still fairly new to it. Another issue I found while coding was the spacing and positioning of our text boxes. There is only so much space on a figure, and with all the ideas I had, I had to ditch some ideas because I knew they wouldn't all fit in the figure with the plot and various buttons and edit boxes. Although Gui is still shaky

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for us, I understand its usefulness. Almost every simulation, screen figure, ad, ect… is some form of gui coding that someone had to design. In physics, I often refer to simulations of waves using figures that move, have radio button groups to toggle between masses, velocities, or distances. These simulations are good examples of how gui coding can be used. It is everywhere online, and in person as well. When I shop and go into stores, oftentimes a store will have certain code pre written for the cashier, then using gui or other methods, it allows the person working to enter data like pricing, phone number, or anything else. People sometimes don't realize that even stuff like microsoft windows is a form of gui coding and people sit at computers almost every single day.

Although I struggled with this final coding project, there was some stuff that was fairly easy for us to understand. In my opinion setting up the gui coding was simple because I had several references to look back to to make sure I was setting it up correctly. The second easiest section in my opinion was setting up the reset button. The button, for the most part just has to rest everything, so I made it close the figure and then reopen a blank figure from scratch. That way no matter what happens, if you click reset, it closes whatever you were working on at the time, and opens up a new figure (plot(0,0)). The most difficulties I had while setting everything up was coding the radio button group. For some reason, I could not get the shape and color to work together. If you chose a shape, it would graph by default as blue. When choosing a color though, you could go through red, blue and green, but the shapes wouldn't work. I couldn't get both sides to work simultaneously and I don't know why. They do work one at a time. My best guess as to why they don't work together is because I have the shape coding come after the color coding. Meaning that once you change the shape of the graph, it overrides the

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previous color selection and graphs a default color blue. I don't think i can go through

and hardcode every combination either.