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For the final project I decided to do the example project that was given to us. Emme Campbell approved this. I started of by declaring a global variable named graph. I then started creating the gui structure with the graph figure. Then I created the x coordinate and y coordinate boxes for the gui and I tied them to the “plott” function in my code. Some time was spent for finding out where these needed to be placed at. Once these were done, I started making the text boxes above the saying what those specific edit boxes were. I then again spent some time positioning them correctly above their correct edit boxes one by one. The next step I took was to plot the coordinate (0,0) for the base of the graph. So this is what was done. The graph was turned on and the position was set in the in the gui.

After All of that was done, I started to make buttons. The first button that I made was the “rest” button, which I made as a pushbutton as well as the “plot” button. These two buttons were then both placed in the bottom right and corner in the gui. One after the other respectively. The plot button was tied the callback function called “plot”, whereas the reset button tied to the callback function called “reset”. The first radio button group was then established. I called it “Uib”. This radio button group was for the color of the line or symbol marking where the point was on the graph. I made three optional colors, those being red, blue, and green. These buttons were tied back the callback function for changing the colors. The next radio button group was for the style of the line or the symbol. I named this next button group Uib2. There were three separate styles I gave as options. These styles included: o’s, x’s, and a slashed or dotted line. These buttons were then tied to the callback function for changing the style of the line.

After this was done, four functions were made for the callback functions. These were the changecolor, changestyle, reset, and plott function. I started first with the changecolor function. This was made with an if statement using the built in function strcmp of the string in each radio button for the color to the value for what they would be in the plot function. Then the changestyle function was next. It was very similar to the changecolor function by using the built in function strcmp to compare the name of the string of the button to what the symbol was needed to be put in for the “plott” function. Next was the reset function. In this function the global variable graph was declared first. Then the next thing was to make it so that the name of the graph name, values of the x and y coordinates, and the x and y axis names. The final function was then written as the function that plots the x and y coordinates. I started off by declaring all the global variables. Then I set a variable equal to the string of the x coordinate and then another variable equal to the y coordinate strings of numbers and put in certain error messages.

This is where I noticed I needed a limiting range of values for both the x and y directions. I went back up to the gui section and made four more text boxes and edit boxes for the limits of the x and y directions. More variables were made in the for the x and y limits in the plot function. These were then used in the plot function. Then two if statements were made to make sure that the lower limits were always lower than the upper limits and if they weren’t to display an error message. Then the plot took in the variables for the x and y coordinates an plotted them. With the x limit and y limit in mind and the xlabel, for the x axis name, ylabel for the y axis name, nd then finally the title bringing in the name of the graph.

This project was difficult because it was bringing together everything we did in class. It was time consuming and trying to remember every thing to use in the making of the project. In the future I will definitely use gui’s to help with my major. Whether that be for plotting information gathered for something or to help visualize any data. These skills will definitely be useful in the future.