Final Project Paper

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For my final project, I did a 3D model of any terrain that you can create. They are three different types of data that can be selected and three different views of the data. Planning and writing the code was difficult for me. Getting a good placement for the buttons required plenty of trials to get and creating a graph for the code to create was more tedious than I thought it was. I also got frustrated with writing this code because of many typos that I had to weed out by rereading my code over and over again. Creating a callback function was too difficult. I didn’t have a good understanding of how it really worked and took some time for this to get worked out. I wasn’t sure if the units were already going to be all the same but I felt like I should be sure to make them all the same.

I’ve decided that chemical engineering isn’t the major that I want to pursue anymore, and I’ve always enjoyed working with wood and construction and blueprints. I had a job in construction for a little bit and I really enjoyed it and it opened my eyes to something that never really thought of before. So, I might go with construction management or something along the ways of the planning out houses. When I finished this project, the 3D model that came out at the end reminded me of what a blueprint of a house or building would look like. When building things such as houses, you have to take into consideration the whole surrounding area as well as making sure that your foundation is strong enough. When looking at the final product of this project, the model that was created shows just that. I feel like creating a GUI could work for this purpose and many others along the same lines.

This type of code could be used for military purposes as in creating different types of terrains for studying and planning for officers. You wouldn’t have to used existing maps or anything you could create any type of terrain that you needed to keep them on their toes. You could also plan mission plans with this based on what type of terrain the mission would take place in. You could even use it for naval purposes to see what kind of ships would be able to be able to sail in whatever depth of water.

I created this code by first making the function and then making a figure function, and then I made it invisible until all components were added. It is set to a four-element vector that specifies the location of the UI on the screen and its size. The default units of it are pixels. Then I constructed the components and specified all the details about them. Then I made the popup menu with each component on it. I created a push button with each label on them with the size and location of the buttons. After that, I defined the axes so that they have the same units as the other components. Then, I aligned all the components togethers except the axes. At this point the GUI was working but there wasn’t anything on the screen and the buttons didn’t do anything, so I needed some callback functions so then I programmed the callback functions so the actual popup can work. I had to specify the name of which set of plot that I called back within the UI control for that plot. Within the popup, I programmed the three different types of plots and set the current data accordingly to each value property. Then I initialized the UI so that it would become visible and behave properly. I did this by changing the components and figure units to normalized. This caused the components to resize when the UI is resized as well.