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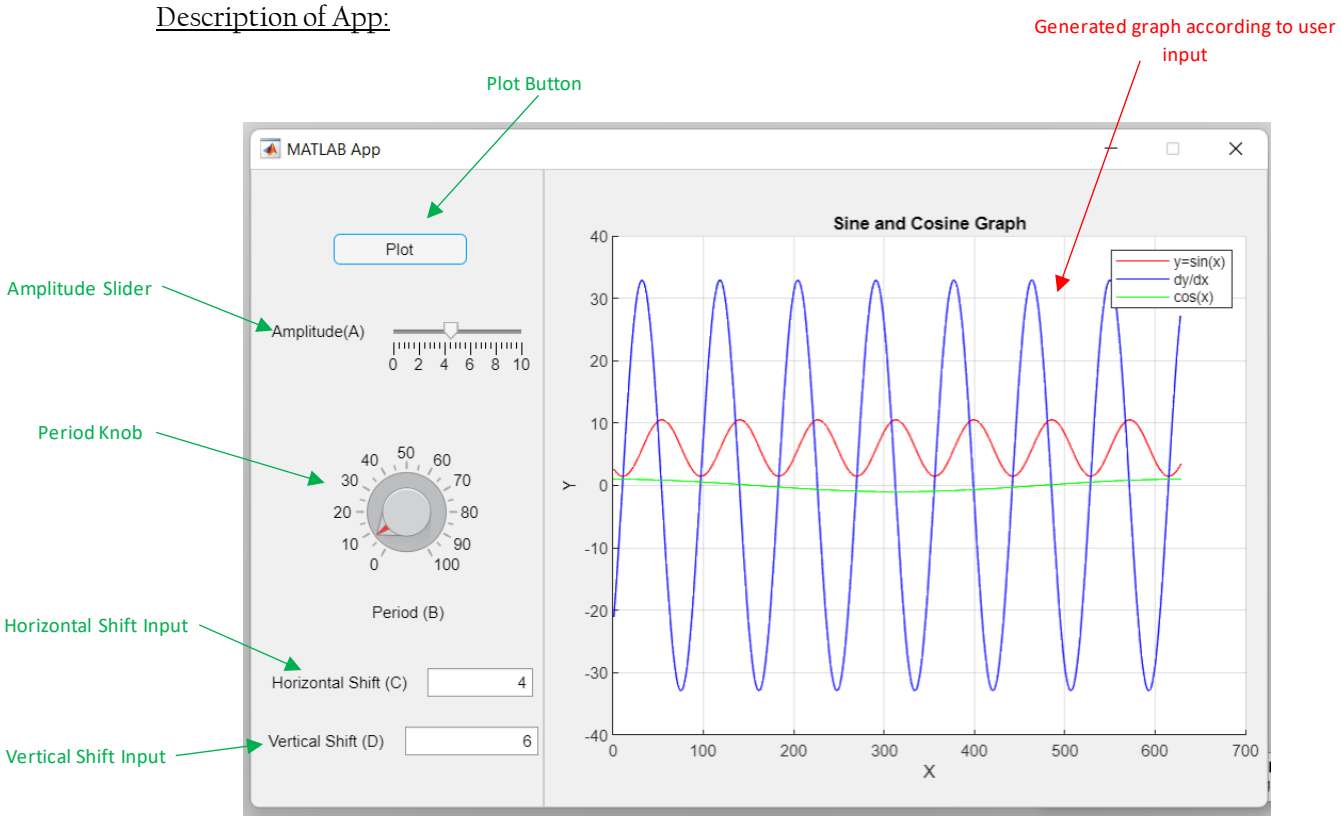
Math MATLAB GUI Application Project

Summary of Project:

Anton and I worked on this project for a total of 3 weeks. Most of the MATLAB functions and commands were taught to us during the course although this project required more of self-learning and research. Creating a GUI app on MATLAB was completely new to us so we had watched several tutorials and went through the MATLAB guide to understand how to code. We planned about the project structure, timeline and idea before we started and decided on each other's responsibilities. We had to do a lot of collaborative research regarding the idea we choose, and our communication was key for this project to be a success. Anton took care mostly of designing the app and figuring out different interactive features to include. I worked on the coding part and making sure the app functions with all features working.

Overall, this project was a slight challenge for us at the beginning but as we progressed things got easier. We were able to include all basic MATLAB knowledge we gained throughout the course as well as learn new things. This was a great learning experience for us as we were able to develop our MATLAB skills which would further help us create real-time GUIs in the future.

Description of App:



The main objective of this app is to generate a multifunctional graph which consists of a sine wave, cosine wave and the derivative of sine wave. The sine wave follows the '$y = Asin(B(x+C))+D$' equation. The values of the different variables in the equation are inputted by a user and the graph will change accordingly to the values. The cosine wave and the derivative of sine wave will update accordingly. Once the app is launched, the user must first input the data and the proceed to click the plot button so the graph can be generated. This needs to be done every single time for the graph to change. The x-axis is programmed to generate 1 whole sine wave in increments of 0.01.