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ECE 101-02 MATLAB and C Programming

Mr. Watchorn

May 2, 2023

Mr. Watchorn,

Executive Summary

I would like to demonstrate MATLAB’s ability to generate graphs for our reports going forward. Therefore, I have attached two graphing programs to this email. One, labelled ProjectileMotionGraph.mlx is available to show how we can import data from csv files. The other script is labelled PendulumMotionGraph.mlx, and it uses mathematical functions to simulate data gathering.

Discussion

These scripts could be slightly improved by programmatically determining the positions of labels instead of hardcoding a position on the graph. I’d also like to note the use of the writematrix function to write output data to files. I considered simply using fprintf to write the data, but given my previous experience, I knew there would be an easier way. Next, I found the dlmwrite function to write the data with commas being the delimeter:

dlmwrite('pendulum\_sim\_data.csv', data, 'delimiter', ',', 'precision', 6);

However, MATLAB specifically advises to use writematrix instead, for compatibility.

Outcomes

The data imports without issue, creating the graph expected. The simulated data matches the display on my ti-84. Additionally, the data is correctly written to csv files. This project required 1 hour, 48 minutes, and 51 seconds of development time.

Conclusions

Going forward, I hope this will convince you that MATLAB’s graphing features are perfect for our operations, and that we will soon standardize its use.

Thank you for your consideration,

Dylan