Final Project Proposal

Interface Mechanism: Console I/O

Description: Track price and Exponential Moving Average data for cryptocurrency prices and decide when to buy/sell. The program would get price data from a CSV file, calculate Exponential Moving Averages as it reads each new value, and make a decision on whether to buy, sell, or hold when EMA lines of different periods cross. Eventually, such a program should work with live data, but the intent for this project is to have a working proof of concept using historical data.

Requirements:

1. File I/O – Read price data from a CSV file to create EMA values
2. Dynamic Memory – Keep track of when EMA lines cross using an array that is dynamically allocated
3. Processing array data – Keep track of prices in an array to determine average rate of change between decision points
4. String Manipulation – Format output for telling the user when would be a good time to buy/sell
5. Pointers – Pass arrays of data to functions as pointers when calculating EMAs

Advanced Topic:

1. Recursion – Use a recursive function to calculate EMA values