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515 Final Project

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Bitcoin Trading Bot

For my final project for the class I decided to create a bot that trades bitcoin based on a series of signals that it calculates. One of the main goals of business is to gain value for shareholders and stockholders. One way that many individuals have been trying to gain value due to its volatile nature is Bitcoin. Bitcoin fluctuates more than many stocks and has a relatively trusted trading platforms. It has the capacity to gain and lose lots of value in a short period of time and many people believe that they can outsmart the market, similarly to the stock market.

The first functionality that the program demonstrates is graphing historical bitcoin prices from 2014 to now. The API returns timestamps in their long form, the program converts them to a shorter date then casts to string. This is hidden from the graph due to there being so many that it clutters user’s screens. After you close the bar graph as GUI appears with an entry box and a ComboBox. The user must enter the method at which they want the bot to make decisions, and the amount of money they want to give the bot. The three methods are Tree, Neural Net, and Method Beau. Tree and Neural Net use the sklearn machine learning libraries in python. There are different datasets used for buying and selling decisions. Both methods use the same datasets but can make different buying and selling decisions. Method Beau primarily uses weighted averages for buying and finding repetitive loses for selling. These are success criteria that I arbitrarily made that I believed could work in the right market. One of the big assumptions that is made is that bitcoin will always reach new highs. For this reason the program will never sell a loss and will ride it out to the other side. Another assumption is zero transaction cost. Many platforms have a transaction cost and the bot does not consider this so it may sell at times where a different platform could be a loss due to transaction cost.

In the current market, coins have been having longer runs then dips, this has caused the past week of testing go very well from a value perspective and the bot always gaining value. The bot runs for 30 days, making decisions every 5 minutes(the API refreshes every 5 minutes),for this reason a full test has not been completed, but it has been run over long periods of time. When the 30 days is complete the bot stops trading, but all balances stay in their current form, regardless of whether they are USD or BTC.