Project 2

Project title:
Algorithm trading app using Machine learning / Supervised learning

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Project description/ outline:
Essentially our app is going to function in 3 stages :

Stage 1:
Creating a bot that is user friendly that determines the risk tolerance of the user. The bot created will begin to ask the user a series of questions and according to the responses, it will make the appropriate stock portfolio allocation. The allocation or risk tolerance will be divided into three categories.

1- Conservative
2- Moderate
3-Aggressive.

Stage 2:
According to the allocation of risk tolerance from the three categories assigned, the bot will then allocate which portfolio is more appropriate for the user after utilizing the selected API/ machine learning to make that determination.

The user will then approve and begin selecting the amount of $ he/ she is willing to invest.
According to the investment the bot will then run an analysis of the portfolio in which case will be the S&P 500 and run a forecast that is also backed up by an accuracy level that is sufficient to make the recommendation once the threshold is determined. Once the app determines the right time to buy in , the application created will send an alert to the user informing him/her of the attained threshold to purchase into the portfolio.

Stage 3:
Using algorithm trading the app will then start trading on the user's portfolio to achieve the highest returns possible, which will be determined by running a high level of accuracy rate that is aligned with the forecast the software/ system will run.

- **The questions for the user to answer for the bot to determine risk tolerance are the following:**

1- What is your yearly income:

a) $50,000 - $100,000 = Conservative b) $100,000 - $250,000 = Moderate c) $250,000+ = Aggressive

User selected option (B)

2- What is your net worth:

a) $50,000 - $100,000 = Conservative b) $100,000 - $250,000 = Moderate c) $250,000+ = Aggressive

User selected option (B)

3- what is your investment goal:

a) $50,000 - $100,000 = Conservative b) $100,000 - $250,000 = Moderate c) $250,000+ = Aggressive

User selected option (B)

4- How much money do you want to invest:

a) Conservative growth = Conservative b) Moderate growth potential = Moderate c) High growth potential = Aggressive

User selected option (B)

5- What access do you need to your investments:

a) Within 5 years = Conservative b) Not for 11-15 years = Moderate
b) Not for 16-20 years = Aggressive

User selected option (B)

- **Final conclusion : The User has Moderate risk tolerance which will lead the system to suggest the S&P as the appropriate portfolio to invest in.**

Research questions to answer:

Which API to used
Selecting individual stocks or using S&P 500
Based on predetermined stock selection, what stocks are the users interested in ?
When is it the best time to buy / sell each stock ?
How to analyze risk tolerance (Conservative, Moderate, aggressive)

Datasets to be used:
ESG, API, CSV

Rough breakdown of tasks:
Data collection, API selection, Chat Bot creation, Risk tolerance analysis (BOT), Machine learning capability, Bot alert creation, Algorithmic trading