Criterion A: Planning

Scenario

My adviser is Mr. G, my Computer Science Teacher, and my client is Ms. D, a crypto enthusiast who works within the administration office of our school. To her it is important to get public views on cryptocurrencies since currencies have no intrinsic value without the trust based on a community. Therefore, it was important for her to understand the sentiments of other crypto enthusiasts on the internet, where people often share their opinions, knowledge, suggestions & news about cryptocurrencies. But during the discussion[1] she mentioned that due to the frequent, and abundant news about cryptocurrencies, she struggles with keeping up with updated information in her limited free time.

After consulting with Ms.D, she agreed with the plan that I came up with [2]: an executable built on python to collect sentiments on Twitter about the top 5 cryptocurrencies. With this executable, she can be able to understand what other investors think about each certain type of cryptocurrency.

Rationale

With my program, she will be able to run a file on her Windows 10 desktop or laptop to navigate through the graphical user interface to gather information about specific statistics such as the sentiments, most discussed crypto, introduction of cryptocurrencies, etc. The program will solve her problem of needing to spend time reading the news and social media to keep up with current events, hence improving her efficiency of researching.

The reason why I choose Twitter over Instagram, Facebook, and Telegram, is because of its large user base of cryptocurrency experts, variety of age groups of users, and the official Twitter API for tweet scraping. The elevated access that I have requested from Twitter will be used to retrieve the data, this action has been approved[3] by Twitter. The data collected follows Twitter's Developer Agreement [4] which states that "Use the Twitter API to integrate Twitter Content into your Services or conduct analysis of such Twitter Content, as explicitly approved by Twitter." Regarding the use of this data in the program, the data will solely be used for educational purposes to gather public opinions, thus not providing any financial advice.

I choose Python as my programming language for the task because it is one of the most popular programming languages for Natural Language Processing or machine learning, hence a larger community to obtain support. It is also suitable for making API calls to the Twitter API for collecting tweets which is my source of data. Besides, Python files can be executed in popular operating systems such as Windows, Ubuntu, and Linux through a graphic user interface library such as Tkinter, PySimpleGUI, etc. In addition, Python has data analysis libraries such as NumPy, and Matplotlib, which together can be used to create arrays, matrices & graphs to aid me to

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[1]Appendix - First Meeting (Transcript of Interview)
[2]Appendix - Email Exchange of Approval
[3]Appendix - Twitter API Elevated Access
[4]Appendix - Twitter Developer Agreement

demonstrate specific data about sentiments of cryptocurrencies, and an accurate pre-trained sentiment analysis model, TextBlob.

Word count: 470

Success Criteria:

1. This system is able to collect tweets about the top 5 popular cryptocurrencies on Twitter.
2. This system is able to analyze whether or not each tweet is neutral, bullish, or bearish using a machine learning algorithm.
3. This system has a clear Graphical User Interface (GUI) in python.
4. This system has options to view each specific tweet collected under each type of cryptocurrency and their corresponding sentiment.
5. This system can display the percentage of neutral, bullish, or bearish of a cryptocurrency
6. This system can display the total tweets collected.
7. This system can display the most discussed cryptocurrency over an hour.
8. This system can display basic information about each cryptocurrency (cautions).