Software Engineering
Feasibility Analysis
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Non-Binary Market Sentiment Prediction Based on the Dynamic Analysis of the News

Overview:

The feasibility of our project under the time constraints and domain knowledge of our team members is quite manageable. While there are some design decisions that we might need to spend more time on, the majority of our project falls under the expertise of at least one if not more of our team members.

The project is definitely possible to construct as there are parts which have been replicated and used in other projects of this type (ie web scraping is a common technique). The risks that are associated with this project is figuring out how to attach different frameworks and techniques into one usable application. For example, how to feed our web scraped financial data into our NLP model.

The system is worth implementing as

Technical feasibility:

The Project is a web-based application with the main technologies listed below:

- HTML
- CSS
- Javascript
- Python
- React
- NodeJS
- BERT NLP Model
- Yahoo API

Familiarity with Business Domain - All of our team members have worked with financial data to one degree or another. Aziz and Andriy have actively traded stocks and are familiar with financial terms. Meanwhile, Nicholas is an avid reader of financial news and is quite interested in financial and economic markets.

Familiarity with Technology - While some technologies are yet to be decided, our team is well equipped to tackle the different choices we are considering. Nicholas and Aziz have familiarity with React and javascript, html, css which will be quite useful in building the front end. Andriy has used NLP models in the past which will help with calculating the predictions of our stocks. The brand new aspects of this technology which the team will have to tackle is

Project Size- This project is manageable for a team of three people and can be done in 4-5 weeks minimum. It has multiple moving parts, however, dividing it up into three parts by front end, back end, and data collection it is something of a mid size project.

Since all of our foreseeable technologies are free and the technical skills are available the project can be implemented.

Economic feasibility:

The project supplies real value as stock traders need to constantly stay on top of the rapidly changing financial markets. However, keeping track of the news is quite time consuming.

Benefits	**Costs**
Saves time reading financial news	A Web-Based Application that will have many lines of code.
Saves time absorbing financial data	The BERT Model can be computationally intensive to train the model using the data
Computation of predication is done faster	Web scraping large data can be computationally intensive
Customized predictions based off user principal amount	Hosting files on online server

Resources Required:

- Hosting Space - Free
- Programming Device - Mac
- Programming Technologies - Free
- Programming Individuals - 3 person team