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INFM 603 Project: Stock Analysis Website

Project Prototype Document

Description of the System:

Our group created a website about stock metrics in order to teach users about investment. We created a platform which is easy for users to navigate and learn about various aspects of investing. When entering our website, the home page features a menu where you can access the about page, learning modules and the subscription. The about page describes the mission of our system and provides a brief description of the stock market. The learning modules section includes both the technical and fundamental analysis.

The technical analysis section describes metrics such as the simple moving average, Relative Strength Index, and Moving Average Convergence. They are all paired with graphs that visualize some of these metrics. We also have a Fundamental analysis section which has information regarding five different concepts, such as the P.E ratio and Dividend Yield. They are also each accompanied by graphs for visual purposes. The learning modules are there in place to describe each of these investing concepts in a simple manner. They are all set up in different pages in order to make the navigation easier. If the concepts were all written on one singular page, it would be more overwhelming for users. We also included a subscription page which allows users to see the different subscription plans that are available.

Design changes:

Our previous design was to design a website which will visualize and predict Dow Jones 30 stock using machine learning. Instead of predicting the stocks, our website is a learning system for stock analysis, to the users who have basic or zero knowledge about the stock market. Users can learn and comprehend how to choose stocks utilizing fundamental and technical analysis by using our website. In order for readers to fully comprehend the terminologies used in the stock market and choose the stock with the highest value we thoroughly explain each metric that we used to analyze the Dow Jones 30 stocks. We discuss the two types of analysis: fundamental and technical analysis. We also go over how to use fundamental analysis to select companies for long-term trading based on the five metrics. For technical analysis we have selected only one company to make the users understand in a clear and understandable manner. We will add more modules outlining how to pick the best stock by comprehending the price and volume movement. We intend to include some quizzes on fundamental and technical stock analysis, as well as how to choose the best stock by visualizing graphs and metrics.

Implementation:

For the front end, we used Drupal to create the web pages and to connect the web pages together. We have a user account with admin rights which is used to create and structure the web pages. For the written content on pages, we used Drupal. We accessed our stock data through the Yahoo Finance and Technical Analysis library package. We used Google Colab for programming. We did not have to create local environments on our computers, and we could see what our groupmates were coding in real time. The data that we collect was processed and organized with the NumPy and Pandas packages. For the data visualizations that are added to the metric pages and technical analysis page, we used Python for that, specifically the Matplotlib package. Once

we created the data visualizations/plots, we copied and paste those images directly into Drupal.

Not implemented:

Drupal Permissions module:

We are currently unable to integrate the drupal permissions module into our systems due to technical issues and a lack of time to solve them. Once we integrate the permission module, we will be able to only allow hypothetical paying customers to see the content on our site.

Machine Learning model:

We currently have not added the Machine Learning model due to a lack of time and it was a lower priority task compared to getting the site running or creating the metric pages. Also, ML part was optional part in our project. However, if we do have the time to add the ML page, we would use Google Collab to run a LSTM(Long Short-Term Memory) machine learning model. We would then take an image of the model and add it to a new page on our site that would explain the model, and the uses of the model.

Instructions for running (and, if needed, for installing) your system:

Our system can easily be accessed on the internet through our website. The actual backend of the system is stored and maintained through pantheon, a website development and deployment site. Once the user has the web address, they can access our platform. The credentials to our website is the username is admin and the password is Inst603@! .

Links:

Drupal Website:

<https://dev-learn-stock-analysis.pantheonsite.io/>

Technica Analysis:

https://colab.research.google.com/drive/1n8hIH0yOnTSJAcBm9qL_KDkiX4InwNIM?usp=sharing

Fundamental Analysis:

https://colab.research.google.com/drive/1Gnes7QgpNhD1nvSqsH3AQfUjjpS_4VaH?usp=sharing