## **Overview:**

Traditionally, building a stock portfolio is difficult for users not familiar with the market. We aim to build a product that creates a better entry point for new investors. This project will utilize web scrapers and APIs to gather user sentiment and market data and process the data using Python and neural networks to predict stock prices. Users will be presented with interactive real-time graphs of either user-selected stock options or preset options, to aid in visualizing stock price movements, predictions, and sentiment analysis.

## **Features:**

* Website UI - NodeJS, JavaScript, HTML5, & CSS/SASS
* Finance API - Yfinance, Pandas,
* Real-Time Graphs - MatplotLib
* Neural Network - Python Programming
* Web Scraper - Beautiful Soup, Requests & Selenium
* Sentiment analysis - ChatGPT, User Polling

## **Timeline:**

* Backend and Data Collection
  + API Access
  + Web Scraper set up
* Data Processing
  + Construct Graph interface
  + Train Neural Network
  + Connect with Chat GPT to perform sentiment analysis
* Frontend
  + Construct Webpage
  + Interface Backend with Webpage

## **Challenges:**

* How much data will the Neural Network require? How long to train?
* Setting up a Web Scraper - There are not many free web scrapers available.
* Runtime and Access Issues - Data processing can take too much time.
* Connecting Backend to Frontend