

CSS 481 Final Project: Stock Website

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Part 1: Project Proposal

1. User Interaction:

- a. User Scenario #1: Search Company's Information
 - Users click on "Explore Company" button on the Homepage or "Company Information" link on the navigation bar to navigate to "Business Profile" page
 - The "Business Profile" page offers Apple's information as default.
 - Users type in their desired stock's ticker (ex: AMZN, META, TSLA, ...) to the search bar on the top right of the navigation bar.
 - Then, users click on the search button to submit their request
 - The page would be updated with information about the company that the users requested
 - The "Business Profile" page provides the following information about the input company:
 - + Name
 - + Description
 - + Address
 - + Phone Number
 - + Website
 - + Total Employee Number
 - + Sectors that the company is in
 - + Stock Exchange Ticker
 - + Primary Listing Exchange
 - + Date that the company was first publicly listed on the stock market
 - + Market Capitalization
 - + Outstanding Shares Number
 - + Weighted Outstanding Shares Number
- b. User Scenario #2: See News in Stock Market
 - Users click on the "Stock News" link on the navigation bar to navigate to the "Stock Market News" page.
 - The "Stock Market News" page offers a set of 10 preset news articles as default.

- Users click on the button with the newspaper icon on the top right of the navigation bar to request the most recent news articles
 - The page would be updated with the most recent set of 10 news articles (based on published time).
 - Users click on the image or title of the news article.
 - The page would direct the users to the website/link of the news article to read the article.
 - On the “Stock Market News” page, each article provides the following information:
 - + Image for the article, an attached link that directs to the article URL
 - + Title for the article, an attached link that directs to the article URL
 - + Description/Summary of the article
 - + Tags of stock tickers, which associates or relates to the article
 - + Publisher
 - + Author
 - + Publish time
- c. User Scenario #3: Search Stock’s Daily Trading Statistic/Price
- Users click on “Explore Stock” button on the Homepage or “Stock Price” link on the navigation bar to navigate to “Stock Quote Report” page
 - The “Stock Quote Report” page offers Apple’s information as default.
 - Users type in their desired stock’s ticker (ex: AMZN, META, TSLA, ...) to the search bar on the top right of the navigation bar.
 - Then, users click on the search button to submit their request
 - The page would be updated with daily trading statistics/prices of the company’s stock that the users requested
 - The “Stock Quote Report” page provides the following daily trading statistics about the input company’s stock:
 - + Stock Exchange Ticker
 - + Opening Price at the beginning of the trading session
 - + Closing Price by the end of the trading session
 - + Highest Price of the stock throughout the trading session
 - + Lowest Price of the stock throughout the trading session
 - + Number of Transaction made within the trading session
 - + Trading volume of the trading session
 - + Volume weighted average price of the whole trading session

d. User Scenario #4: Check Stock's Price History Chart

- On the "Stock Quote Report" page, which can be accessed by clicking on "Explore Stock" button on the Homepage or "Stock Price" link on the navigation bar, users click on the graph button at the top right of the navigation bar
- The "Stock Price Chart" page offers Apple's graph as default.
- Users click in the drop-down box to choose the company they want to investigate stock price history
- The page would be updated with the graph of the chosen company's stock price history
- The graph on the "Stock Price Chart" page provides the following information about the Company's stock:
 - + Company name
 - + Most recent date that the data was collected for the chart; an indicator of whether the stock price has increased or decreased; as well as opening, closing, highest and lowest price of the stock on that day
 - + The x-axis is the stock price(US \$) and the y-axis is the timeline for 1 year (03/07/2022 – 03/07/2023)
 - + Candle sticks to illustrate the stock's price and its trend. When the users hover over each candle stick, the company's price information (date, company, opening, closing, highest and lowest price) will be displayed
 - + A timespan at the bottom of the graph
 - + At the bottom left of the page, there is a time input that the users can put in the range of time they want to investigate the stock price
 - + At the bottom right of the page, there is a time duration, which can be used as a zoom tool for the graph. The users can see the stock's price for the latest 3 months, 1 month, 10 days, 1 year,...

2. Wireframe Diagram:

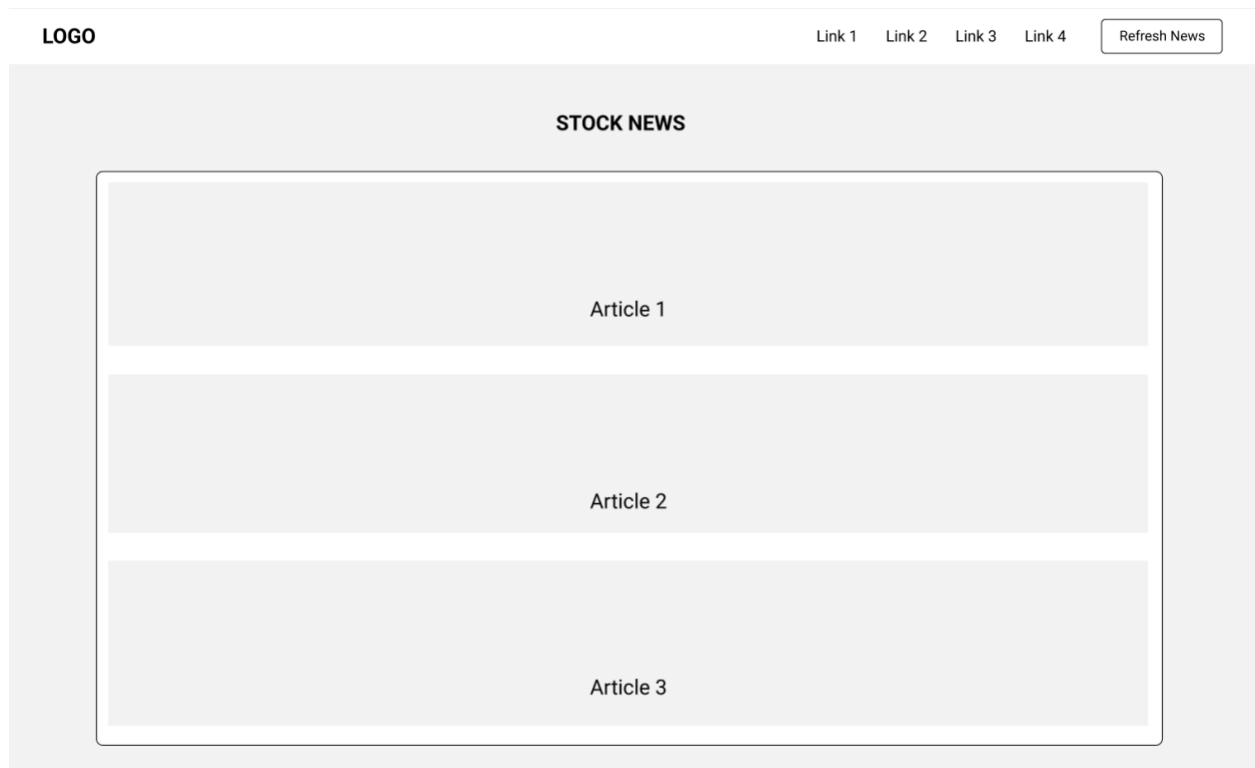
a. User Scenario #1: Search Company's Information

COMPANY INFO

Name
Description
Info 1
Info 2
Info 3
Info 4
Info 5
Info 6
Info 7

- The click target in this diagram is the Search bar. When the user enters a stock ticker in the search bar and clicks on the search button, the user would be able to see the company information of the stock ticker that they entered earlier.

b. User Scenario #2: See News in Stock Market



- The click target in this diagram is the Refresh News button. When the user clicks on the refresh news button, the user would be able to see the 10 most recent news in the stock market based on publication time.
- Another click target is the either image or title of the article. When the user clicks on the image or title, they will be directed to the original URL of the article.

c. User Scenario #3: Search Stock's Daily Trading Statistic/Price

STOCK PRICE

Name
Info 1
Info 2
Info 3
Info 4
Info 5
Info 6
Info 7

- The click target in this diagram is the Search bar. When the user enters a stock ticker in the search bar and clicks on the search button, the user would be able to see the daily price of the stock ticker that they entered earlier.
- Another click target is the Graph button. When the user clicks on the graph button, the user would be redirected to the Stock Price Chart page to investigate the stock price history.

d. User Scenario #4: Check Stock's Price History Chart

STOCK PRICE CHART

Drop-down

Name

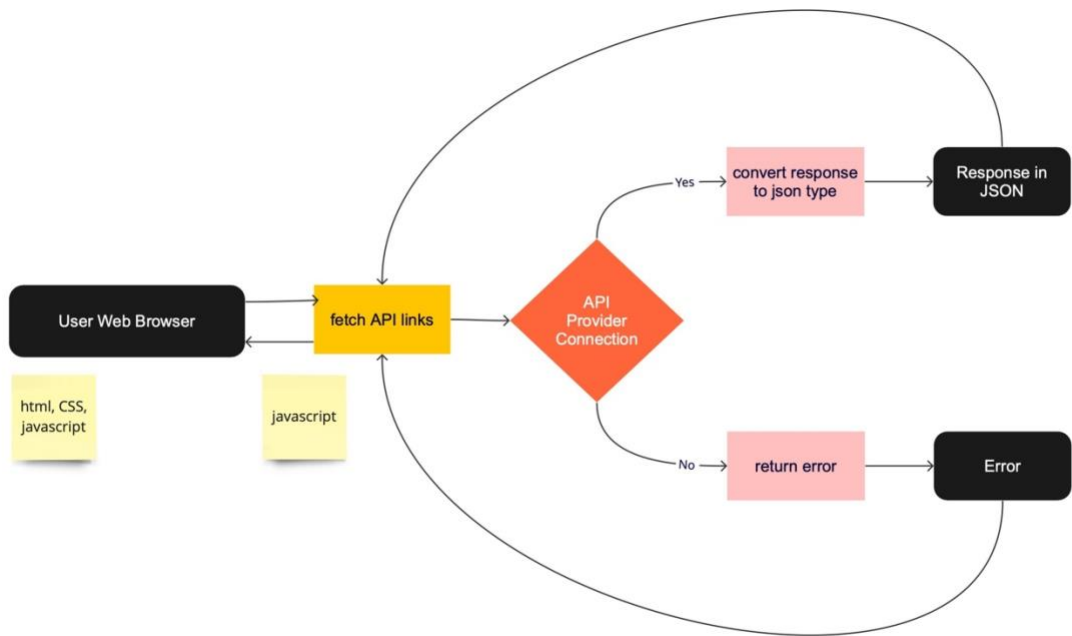
STOCK PRICE CHART HISTORY

Footer/ Copyright

- The click target in this diagram is the Drop-down. When the user clicks on the drop-down button, the user would be able to choose a stock ticker that they are interested in. After the user clicks on the stock ticker that they want, the user would see a chart of the stock ticker's price history over the past year.

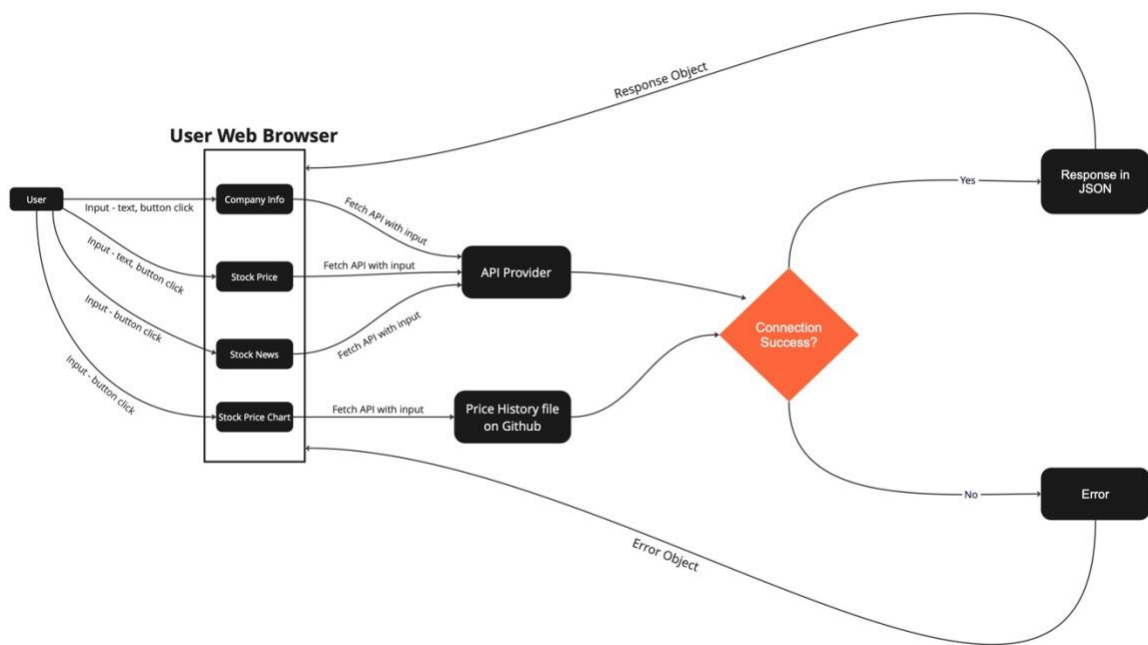
3. Architecture Diagram:

- a. Primary object:



miro

b. Data Flow:



miro

4. Database:

- Yahoo Finance: I download the price history of different companies in form of CSV files from Yahoo Finance. Then, I uploaded those data files to GitHub for links to request data in my JavaScript file

Stock Price		
PK	Date	Timestamp (U)
	Open	dollar
	High	dollar
	Low	dollar
	Close	dollar
	Adj Close	dollar
	Volume	integer

5. Comparison with other competing applications:

a. Competing Application #1: Robinhood

- Similarity:
 - + Stock Website
 - + Offer Stock Price History and Stock Daily Prices
- Difference:
 - + Stock Portfolio offers news in the stock market, as well as company information. My website also does not require users to sign up to utilize the website's functions.
 - + Robinhood is a stock trading app. It requires users to either sign in or create an account to navigate to the app's homepage and access its functionalities. Robinhood does not offer a page for

stock news, but instead, it offers news related to the company on the company's page.

b. Competing Application #2: Etrade

- Similarity:
 - + Stock Website
 - + Offers Stock Price History, Stock Daily Prices, and Stock News
- Difference:
 - + Stock Portfolio is a free website for hobby purposes, and the users of my website do not need to sign in or create an account to use it. My website's user interface is straightforward and easy to navigate, even for new incoming stock players.
 - + Etrade is heavily a trading website. It mainly focuses on trading techniques and analysis. As a result, it requires users to either sign in or create an account with their subscription to access all their functionalities. In addition, their website is difficult to navigate for a new person who is interested in the stock market.

6. Testing:

- Postman: I will use Postman to test API fetch and connection for my website. I will put the API link into Postman and generate information. Then, I will compare it against the information that the fetched API request in my JavaScript code to make sure that my website is fetching the API link correctly.
- Chrome's Dev Tool: I use Chrome's Dev Tool to inspect and print out testing statements to the console to ensure my website is behaving the way I expected it to. I also use Chrome's Dev Tool to inspect my website's user interface.

7. 3rd Party Components:

- Font Awesome
- NPM (live-server)
- Github
- W3School

8. List of Tooling:

- IDE: Visual Studio Code
- Website Hosting: W3School
- Github: Hosting data file from Yahoo Finance
- Source Repo:
 - + Follow this tutorial for building the stock price history chart: [Stock Chart Tutorial](#)

9. Data Providers:

- Polygon.io
- Yahoo Finance

10. List of Assets:

a. Color Palette:

- #E0E0E0
- #080808
- #547793
- #FFFFFF
- #645D5D
- #C1C6CC
- #807D7D
- #F4FAF9
- #96A4A9
- #E7E7E7
- #5A64D3
- #1274ED
- #000000
- #C6CDD5
- #333333

b. Front List:

- Courier
- Poppins
- Sans-serif

c. Images:



CHARLES VU



11.Development Timeline:

