# F.T.A.H.

Hayden Pour, Julian Beaulieu, Mohamed Rayyan, Padraic Reilly, Nicholas Cardinal

# Artifact



[Historical daily prices and volumes of all U.S. stocks]
**Data we have:**

1. Trading Date
2. Opening Price
3. Daily Price (High)
4. Daily Price (Low)
5. Closing Price
6. Volume Sold

## Platform:

Web Application / Desktop Application

***Programming Languages:***

- JavaScript
- HTML
- CSS
- Python

## Feature List (Question of Interest):

***Important features:***

1. ***How does a stock's price change over a given period?***

2. ***How does the volume of stock sold change over a given period?***
3. ***What is the moving average for a stock over a given period?***
4. ***What is the highest/lowest closing price over a given period?***
5. ***Which stock has the largest margin over a given period?***
6. ***What days had the largest increases or decreases in price? (Useful for correlating to real world events)***
7. ***How did a specific stock's daily change compare to the market average change? (High or low performing stocks)***

***Implement if we have time, because we need to use data outside of the database:***

1. ***How do real-world events affect stock prices?***
2. ***What is the predicted opening and closing price of a stock?***
3. ***What stocks are the best to trade for the day?***

## *Sprint-2:*

**Action Items:**

- **Client/UI**
  - **JS Promises**
  - **Create import routine for data retrieved from server**
  - **Sort retrieved labels alphabetically**
  - **Sort retrieved data by date**
  - **Display graph from label click**
  - **Display other various information on label click**
- **Server**
  - **Update csv file name to stock ticker name - stock name**
  - **Return labels in chucks to client backend**
  - **Parallel processing when importing from csv**

**Tests:**

- **Client/UI**
  - **JS Promises**

    **Correct Output:** The user's data will load completely from server before displaying information to the UI

  - **Create import routine for data retrieved from server**

    **Correct Output:** The website displays stock information when user clicks the stock they want to view

  - **Sort retrieved labels alphabetically**

    **Correct Output:** The website will display the stock list in alphabetical order
  - **Sort retrieved data by date**

    **Correct Output:** The data received by the server is properly sorted by date
  - **Display graph from label click**

**Correct Output:** When a label is clicked, the website will display all pertinent information on the right side of the UI

- **Server**
  - **Update csv file name to stock ticker name - stock name**
    **Correct Output:** All files in our dataset are renamed correctly

  - **Return labels in chucks to client backend**
    **Correct Output:** When called, the website requests data from the server and it is returned in a format that can be understood by the website

  - **Parallel processing when importing from csv**
    **Correct Output:** Multiple files can be read from at any given time

## *Sprint-3:*

## *Features:*

### *Feature 1:*

User Story: As an administrative user, I would like to delete, and insert and reload, new stock data into the CSV files and know when it is done.

Tasks:

Step 1: Get access to new stock data from stock data source
[Completed by ]
Step 2: Write functions that inserts lines into CSV and memory
[Completed by ]
Step 3: GUI is updated to reflect the newly inserted data
[Completed by ]
Step 4: Write function that deletes a selected stock from memory (front and back)
[Completed by ]
Step 5: Back up deleted stock by keeping reference in CSV
[Completed by ]
Step 6: GUI is updated to reflect the newly deleted data from portfolio
[Completed by ]
Step 7: Write function that reloads a selected stock from server
[Completed by ]
Step 8: Reload chart with newly imported data
[Completed by ]

Tests:

- Step 1 Test: Get access to new stock data from stock data source
  **Correct Output:** Backend server can receive data from some stock data source

[Completed by ]

- Step 2 Test: (INSERT) Write functions that inserts records to CSV file
  **Correct Output:** The inserted records are successfully written to the CSV file
  [Completed by ]
- Step 3 Test: (INSERT) Stock chart UI is updated with new data
  **Correct Output:** The chart now shows the latest data after the data was pulled from server
  [Completed by ]
- Step 4 Test: (DELETE) Write functions that delete records (server and local)
  **Correct Output:** Once the delete function is ran, the server's dictionary should have one less record
  [Completed by ]
- Step 5 Test: (DELETE) Stock List UI will remove deleted stock from list
  **Correct Output:** The chart now shows one less stock in the stock list and the chart data is cleared
  [Completed by ]
- Step 6 Test: (RELOAD) Write function that reloads a selected stock from server
  **Correct Output:** Local datastore now hold a newly pulled set of data from the server
  [Completed by ]
- Step 7 Test: (RELOAD) Reload chart with newly imported data
  **Correct Output:** Once the data is reloaded from the server the chart is reloaded for the user to see.
  [Completed by ]

**UI Example**


## *Sprint-4:*

## *Features:*

***Feature 1:***
User Story: As a user, I would like to view my stock data in a candle graph

Tasks:

Step 1: Display Candle Chart on web page with dummy data
[Completed by ]
Step 2: Create a function to gather correct data to display on chart
[Completed by ]
Step 3: Create function to reload chart with newly filtered data
[Completed by ]

Tests:

- Step 1 Test: Display Candle Chart on web page with dummy data
**Correct Output:** The website will display a candle chart
[Completed by ]
- Step 2 Test: Create a function to gather correct data to display on chart
**Correct Output:** The website will display a candle chart with data selected the user
[Completed by ]
- Step 3 Test: Create function to reload chart with newly filtered data
**Correct Output:** The websites UI will refresh when the user requests a change in stock
[Completed by ]

***Feature 2:***
User Story: As a user, I would like to know a year over year percent change by stock

Tasks:

Step 1: Add YOY to date selector drop down
[Completed by ]
Step 2: Calculate year over year percentage on backend by ticker
[Completed by ]
Step 3: Pass data back to front end and store in object
[Completed by ]
Step 4: Display year over year percentage on chart
[Completed by ]

Tests:

- Step 1 Test: Add YOY to date selector drop down
**Correct Output:** Year Over Year list item is visible in UI drop down
[Completed by ]
- Step 2 Test: Calculate year over year percentage on backend by ticker

**Correct Output:** Python script to confirm accuracy of YOY percentages
[Completed by ]

- Step 3 Test: Pass data back to front end and store in object
  **Correct Output:** Data is retrieved from server and output to console in the correct format
  [Completed by ]
- Step 4 Test: Display year over year percentage on chart
  **Correct Output:** Data that is retrieved from server in previous step is visible and accurate on the chart tool
  [Completed by ]

***Feature 3:***

User Story: As a user, I would like to be able to switch between stocks and ETFs

Tasks:

Step 1: Create UI object to switch between ETF and Stock
[Completed by ]

Step 2: Create a function that loads ETF or Stock depending on UI
[Completed by ]

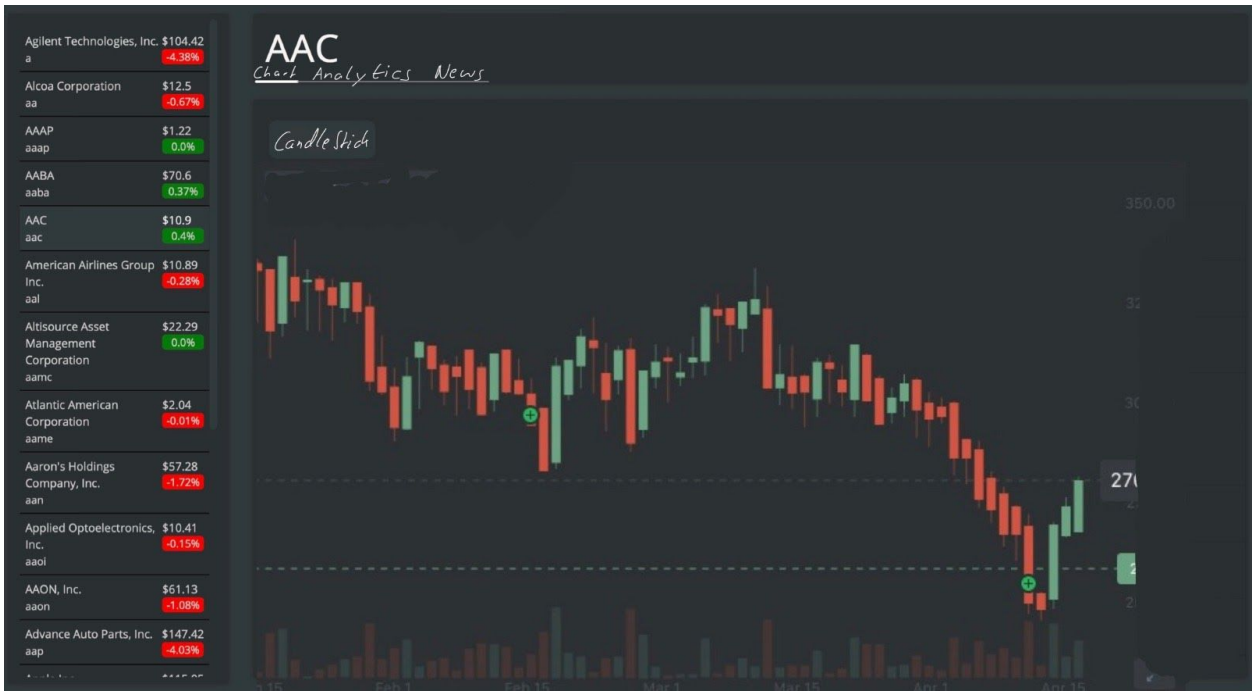
Step 3: Create function to reload stock list with newly filtered data
[Completed by ]

Tests:

- Step 1 Test: Create UI object to switch between ETF and Stock
  **Correct Output:** The website would display radio buttons that say “ETF” and “Stocks”
  [Completed by ]
- Step 2 Test: Create a function that loads ETF or Stock depending on UI
  **Correct Output:** The server will return the selected type of data to the client
  [Completed by ]
- Step 3 Test: Create function to reload stock list with newly filtered data
  **Correct Output:** The website will refresh the stock list when the user changes the selected type
  [Completed by ]

**UI Example**


Slider to choose mode
AAC
Chart Analytics News
Closing Prices v
ALL v
Actions v
Reload
Delete
Closing Prices v Price
Volume
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
2017-11-01
2017-11-02
2017-11-03
2017-11-06
2017-11-07
2017-11-08
2017-11-09
Agilent Technologies, Inc. a $104.42 -4.38%
Alcoa Corporation aa $12.5 -0.67%
AAAP aaap $1.22 0.0%
AABA aaba $70.6 0.37%
AAC aac $10.9 0.4%
American Airlines Group Inc. aal $10.89 -0.28%
Altisource Asset Management Corporation aamc $22.29 0.0%
Atlantic American Corporation aame $2.04 -0.01%
Aaron's Holdings Company, Inc. aan $57.28 -1.72%
Applied Optoelectronics, Inc. aaoi $10.41 -0.15%
AAON, Inc. aaon $61.13 -1.08%
Advance Auto Parts, Inc. aap $147.42 -4.03%


AAC
Chart Analytics News
Candlestick
350.00
Agilent Technologies, Inc. a $104.42 -4.38%
Alcoa Corporation aa $12.5 -0.67%
AAAP aaap $1.22 0.0%
AABA aaba $70.6 0.37%
AAC aac $10.9 0.4%
American Airlines Group Inc. aal $10.89 -0.28%
Altisource Asset Management Corporation aamc $22.29 0.0%
Atlantic American Corporation aame $2.04 -0.01%
Aaron's Holdings Company, Inc. aan $57.28 -1.72%
Applied Optoelectronics, Inc. aaoi $10.41 -0.15%
AAON, Inc. aaon $61.13 -1.08%
Advance Auto Parts, Inc. aap $147.42 -4.03%


Agilent Technologies, Inc. $104.42
a -4.38%
Alcoa Corporation $12.5
aa -0.67%
AAAP $1.22
aaap 0.0%
AABA $70.6
aaba 0.37%
AAC $10.9
aac 0.4%
American Airlines Group Inc. $10.89
aal -0.28%
Altisource Asset Management Corporation $22.29
aamc 0.0%
Atlantic American Corporation $2.04
aame -0.01%
Aaron's Holdings Company, Inc. $57.28
aan -1.72%
Applied Optoelectronics, Inc. $10.41
aaoi -0.15%
AAON, Inc. $61.13
aaon -1.08%
Advance Auto Parts, Inc. $147.42
aap -4.03%
AAC
Chart Analytics News
Golden Cross
5D
10W
5W
1W
Closing Prices v Price
Volume
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
2017-11-01
2017-11-02
2017-11-03
2017-11-06
2017-11-07
2017-11-08
2017-11-09

## *Sprint-5:*

## *Features:*

### *Feature 1:*

User Story: As a user, I would like to see the cross over and have the graph indicate if it is a golden or a death cross

Tasks:

Step 1: Display chart and 2 moving averages on web page with dummy data
Step 2: Create a function to gather correct data to display on chart
Step 3: Create function to reload chart with newly filtered data

Tests:

- Step 1 Test: Display 2 moving averages in chart on web page with dummy data
  **Correct Output:** The website will display the moving average chart.
- Step 2 Test: select a stock, and a analytics filter
  **Correct Output:** The webpage must display the moving average graph of the filtered data.
- Step 3 Test: reload the chart with the filters
  **Correct Output:** The webpage must display an updated moving average graph if new data was appended to the stock or else the same graph.

### *Feature 2:*

User Story: As a user, I would like to see the velocity.

Tasks:

Step 1: Display chart and velocity on web page with dummy data
Step 2: Create a function to gather correct data to display on chart
Step 3: Create function to reload chart with newly filtered data

Tests:

- Step 1 Test: Display Chart and velocity on web page with dummy data
  **Correct Output:** The website will display the chart and velocity
- Step 2 Test: select a stock, and a analytics filter
  **Correct Output:** The webpage must display the velocity graph of the filtered data.
- Step 3 Test: reload the chart with the filters
  **Correct Output:** The webpage must display an updated velocity graph if new data was appended to the stock or else the same graph.

***Feature 3:***
User Story: As a user, I would like GitHub CI to work and test all the unit tests

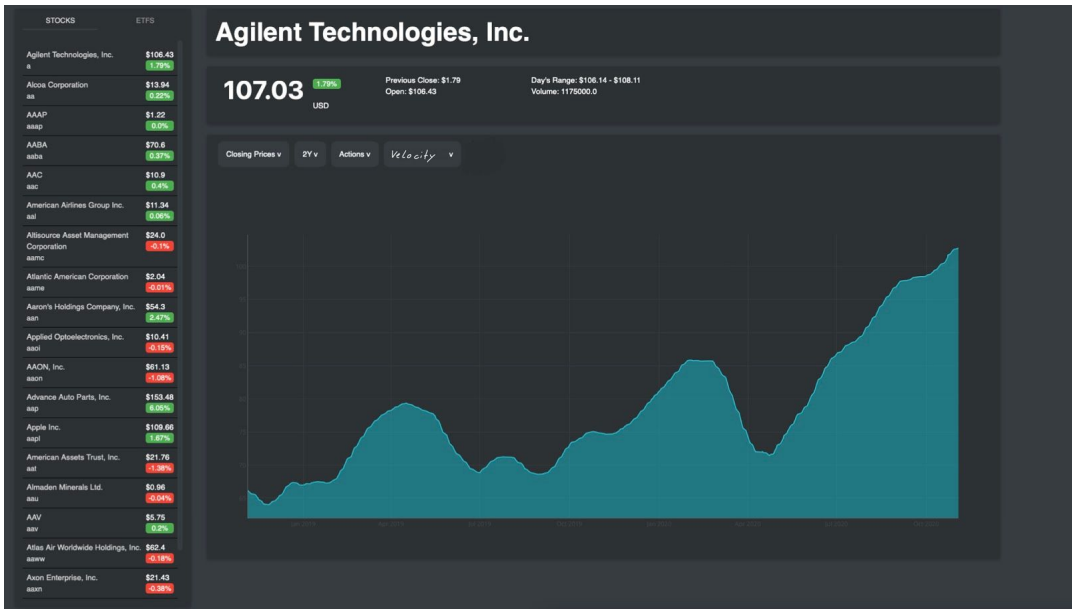
Tasks:

Step 1: Figure out what CI is.
Step 2: Create more unit tests for the client and the server
Step 3: Setup CI to run unit tests.

Tests:

**NA**

## UI Example




## *Sprint-6:*

## *Features:*

### *Feature 1:*

User Story: As a user, I would like to see the see some news about the company that I selected

Tasks:

Step 1: Display dummy news data to build frontend
Step 2: Create a function to fetch news from a specific company
Step 3: Display fetched data

Tests:

- Step 1 Test: Display the news button
  **Correct Output:** When the user clicks on a stock the user must be able to see the news button.
- Step 2 Test: Display stock news
  **Correct Output:** when the user clicks the news button the website must display the news related to that stock

### *Feature 2:*

User Story: As a user, I would like to see the velocity.

Tasks:

Step 1: Display chart and velocity on web page with dummy data
Step 2: Create a function to gather correct data to display on chart
Step 3: Create function to reload chart with newly filtered data

Tests:

- Step 1 Test: Display Chart and velocity on web page with dummy data
  **Correct Output:** The website will display the chart and velocity
- Step 2 Test: select a stock, and a analytics filter
  **Correct Output:** The webpage must display the velocity graph of the filtered data.
- Step 3 Test: reload the chart with the filters
  **Correct Output:** The webpage must display an updated velocity graph if new data was appended to the stock or else the same graph.

***Feature 3:***

User Story: As a user, I would like GitHub CI to work and test all the unit tests

Tasks:

Step 1: Figure out what CI is.

Step 2: Create more unit tests for the client and the server

Step 3: Setup CI to run unit tests.

Tests:

**NA**

## UI Example