Search Page/Home Page

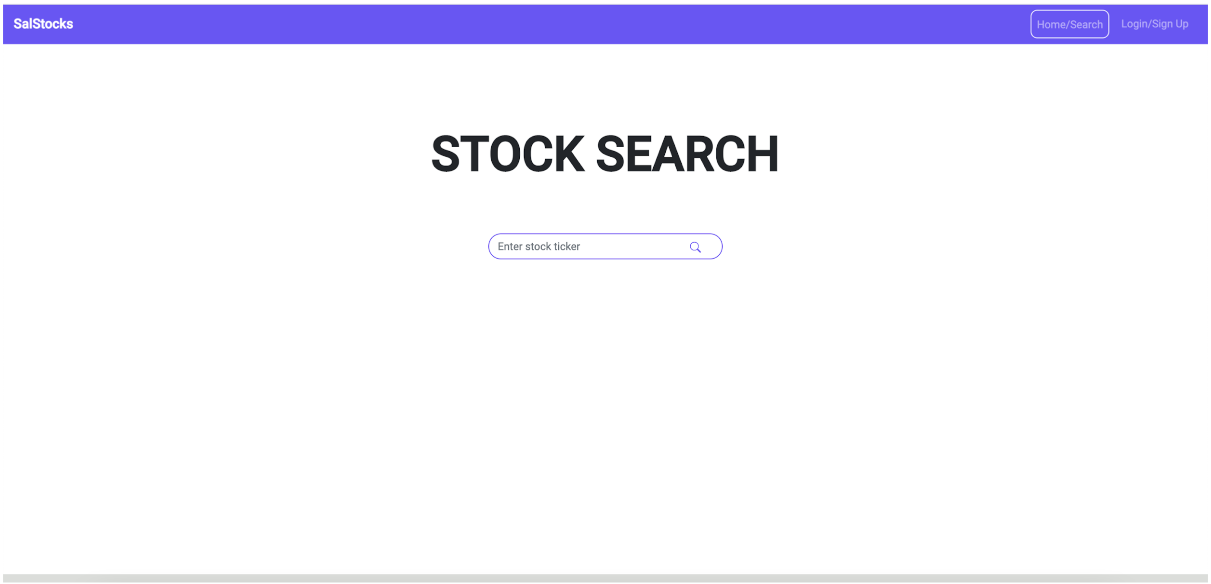


Figure 1 Home Page/Search Page (landing page)

Design
This is the landing page for your web assignment. Users can run a search by entering a company stock symbol (ticker) and then clicking on the magnifying glass icon (the search button).

You must construct a **Search Bar** displayed in **Figure 1**. It is not necessary for the Search Bar to look exactly the same, but the functionalities should be there. The Search Bar contains two components.

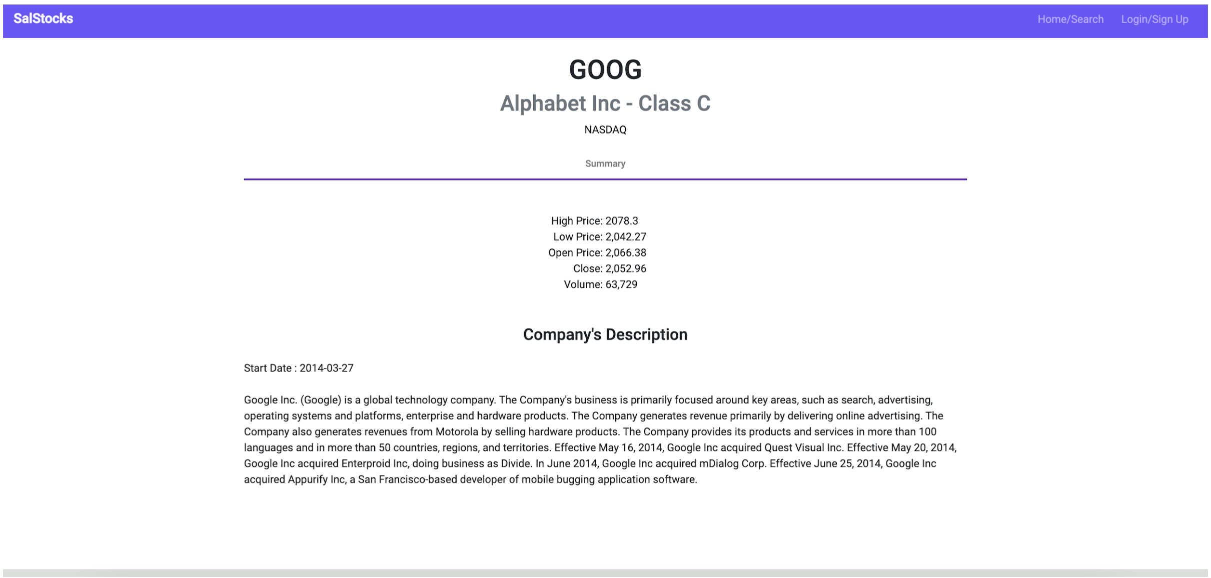
1. **Stock Ticker**: This is a text box, which enables the user to search for valid stocks by entering tickers. The user needs to click on the search icon after typing in the ticker. Notice the "helper" text inside the search box.
2. **Search Button**: The "Search" button (which uses the widely used search icon), when clicked, should display details for that stock by using the information from the Tiingo API.

NOTE: Users can use the top options to navigate between the Home Page by clicking on "Home," and the Login/Sign Up Page by clicking on "Login / Sign Up." If the user is already logged in, the top options should instead contain "Home", "Favorites", "Portfolio" and "Logout." This menu bar should persist between all pages of this application.

NOTE 2: Clicking on the logo (SalStocks) should redirect the user to the Home Page as well. This should apply to all the pages in this assignment.

A successful search leads the user to the Details of the Searched Stock, as shown in **Figure 2 and 5** for guests and logged in users respectively.

Details of Searched Stock (Guest)



GOOG

Alphabet Inc - Class C

NASDAQ

High Price: 2078.3
Low Price: 2,042.27
Open Price: 2,066.38
Close: 2,052.96
Volume: 63,729

Company's Description

Start Date : 2014-03-27

Google Inc. (Google) is a global technology company. The Company's business is primarily focused around key areas, such as search, advertising, operating systems and platforms, enterprise and hardware products. The Company generates revenue primarily by delivering online advertising. The Company also generates revenues from Motorola by selling hardware products. The Company provides its products and services in more than 100 languages and in more than 50 countries, regions, and territories. Effective May 16, 2014, Google Inc acquired Quest Visual Inc. Effective May 20, 2014, Google Inc acquired Enterproid Inc, doing business as Divide. In June 2014, Google Inc acquired mDialog Corp. Effective June 25, 2014, Google Inc acquired Appurify Inc, a San Francisco-based developer of mobile bugging application software.

Figure 2: Detail page overview (Guest)

After the user clicks the Search button, details about the ticker’s company should be displayed (this is not a new page, just a DIV section that fills dynamically). The following components need to be displayed on successful search:

- Symbol, company name, trading Exchange (such as NASDAQ), all centered
- Summary of the stock includes:
  - Company’s Description: values for ‘startDate’ and ‘description’ key from **Table D.1.**
  - Display all the fields mentioned in **Table 1**, as shown in **Figure 2**.

Fields	Sample Values	API reference
High Price	110.25	From table D.2, use ‘high’ key
Low Price	105	From table D.2, use ‘low’ key
Open Price	105.17	From table D.2, use ‘open’ key
Close	107.12	From table D.2, use ‘close’ key
Volume	165893169	From table D.2, use ‘volume’ key

Table 1: Fields used inside for summary information

Please refer to **Figure 2**.

Login/Signup Page

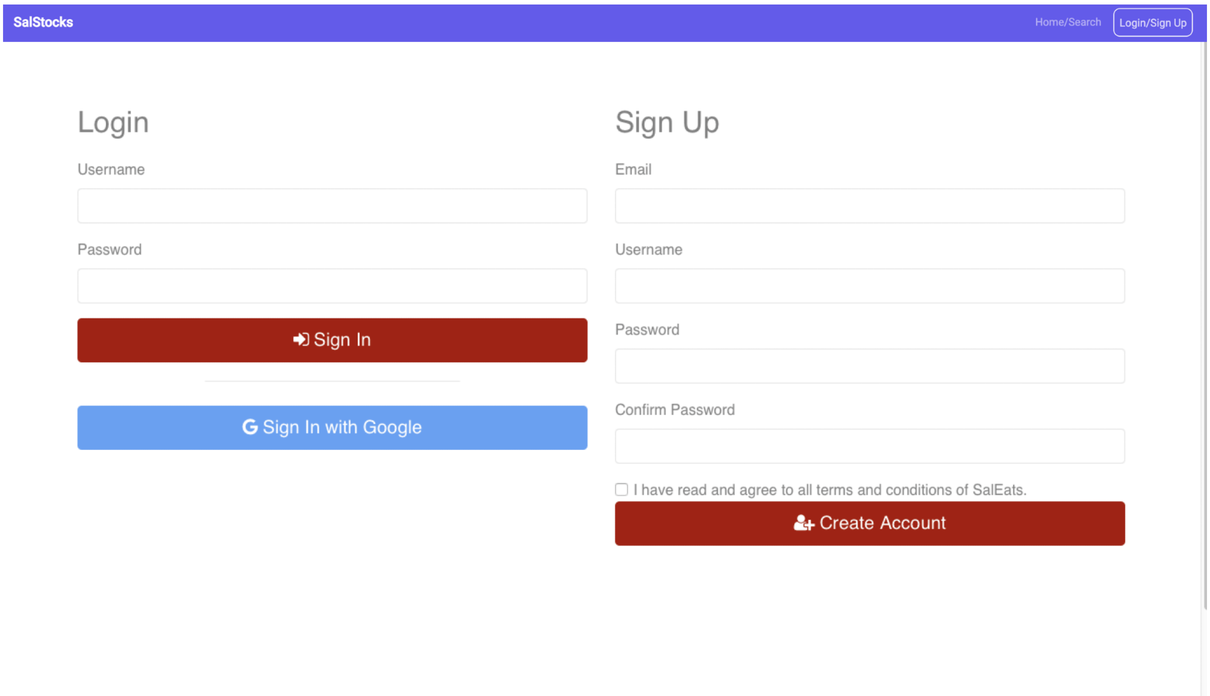


Figure 3 Login/Signup Page

Users can sign up for a new account, or login with a pre-existing account on this page. When signing up, the user will enter their information in the required fields (be sure to display an appropriate error message if there are missing or improperly formatted fields). Upon a successful Sign Up, the user should automatically be logged in and directed to the Home Page (**Figure 4**).

Here are some possible errors to check for:

- Data is missing
- Data is malformed (i.e., Email does not contain an @ or end in .com, .net, .edu, etc.)
- There is already an account associated with the email

On the other hand, users can choose to login either with their credentials or with *Sign In with Google*. Again, errors should be displayed appropriately upon missing or improperly formatted fields. Upon a successful login, the user is directed to the Home Page (**Figure 4**).

NOTE: Registered users get “live” quotes, a paper money account with $50,000 to start with, and can trade (buy and sell using “market” orders) during the opening times of the US stock market. More on this will be discussed later.

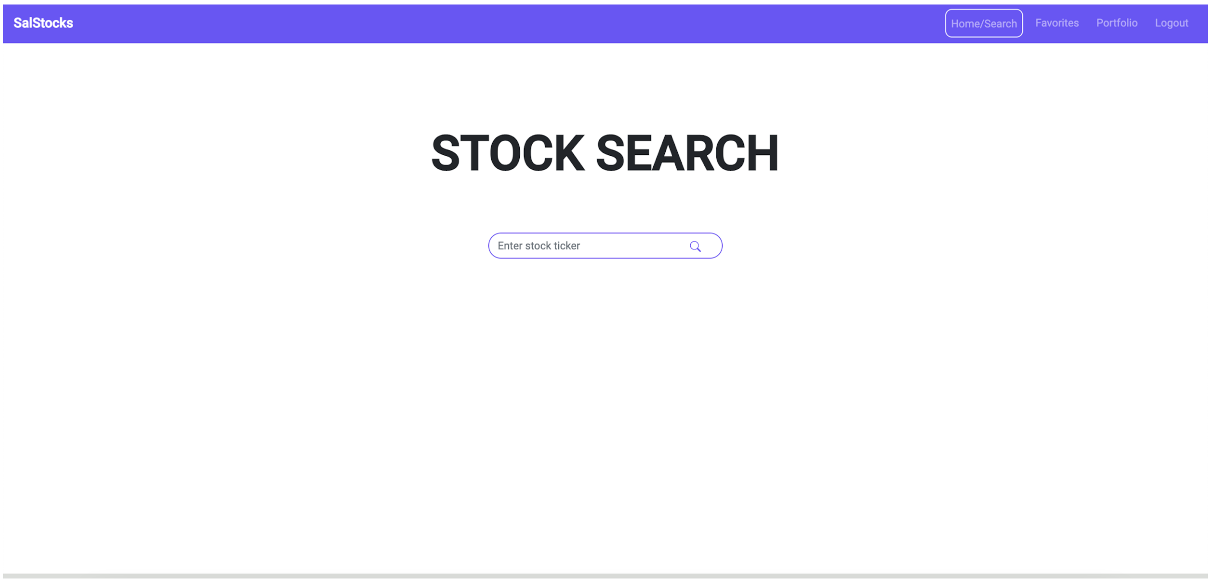


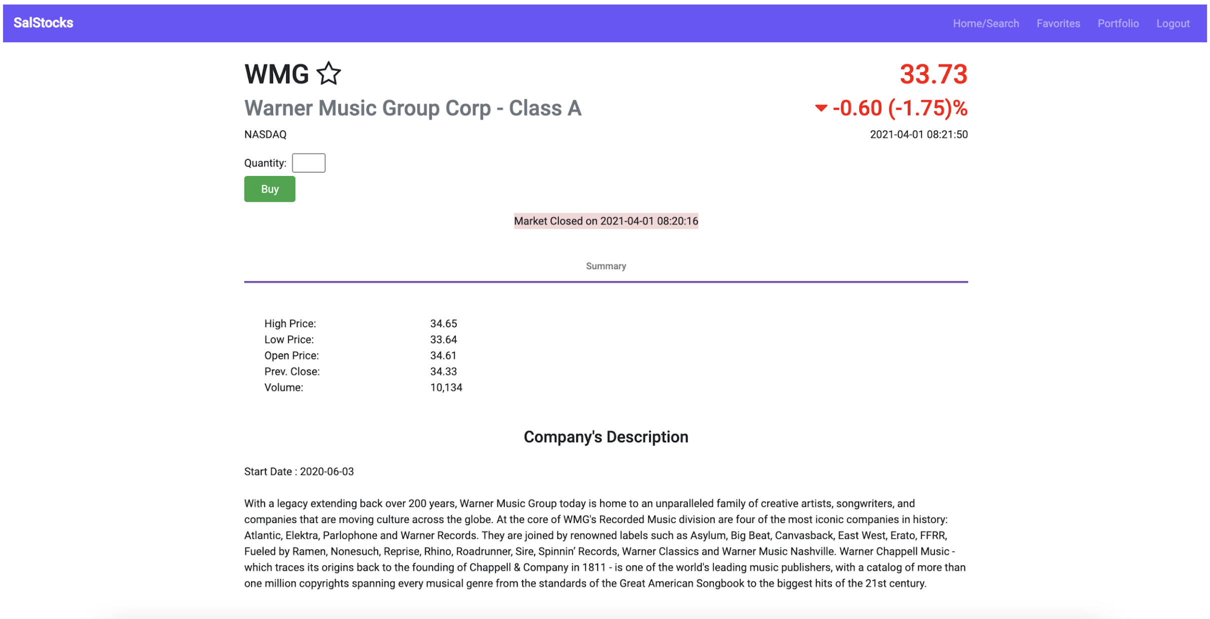
Figure 4 Home Page/Search Page (after logging in)

Details of Searched Stock (for logged in user):

After the user clicks the Search button, details about the ticker should be displayed (this is not a new page, just a DIV section that fills dynamically). The following components need to be displayed on successful search:

- Symbol, company name, trading Exchange (such as NASDAQ), Quantity field and Buy button on top left
- Last price, change, percent change, and date/time, on top right. The change items should be preceded by appropriately colored arrows). You can find the arrow icons in Font Awesome under the names fa-caret-up (up arrow) and fa-caret-down (down arrow).
- Indication of open / closed market
- The star icon for adding and removing from bookmarks uses the fa-star (empty star) and fa-star-o (filled star incase of when stock added to favorites) icons of Font Awesome.
- Summary

Please refer to **Figure 5** and **Figure 6** below.



WMG ☆

33.73

Warner Music Group Corp - Class A

▼ -0.60 (-1.75)%

NASDAQ

2021-04-01 08:21:50

Quantity: □

Market Closed on 2021-04-01 08:20:16

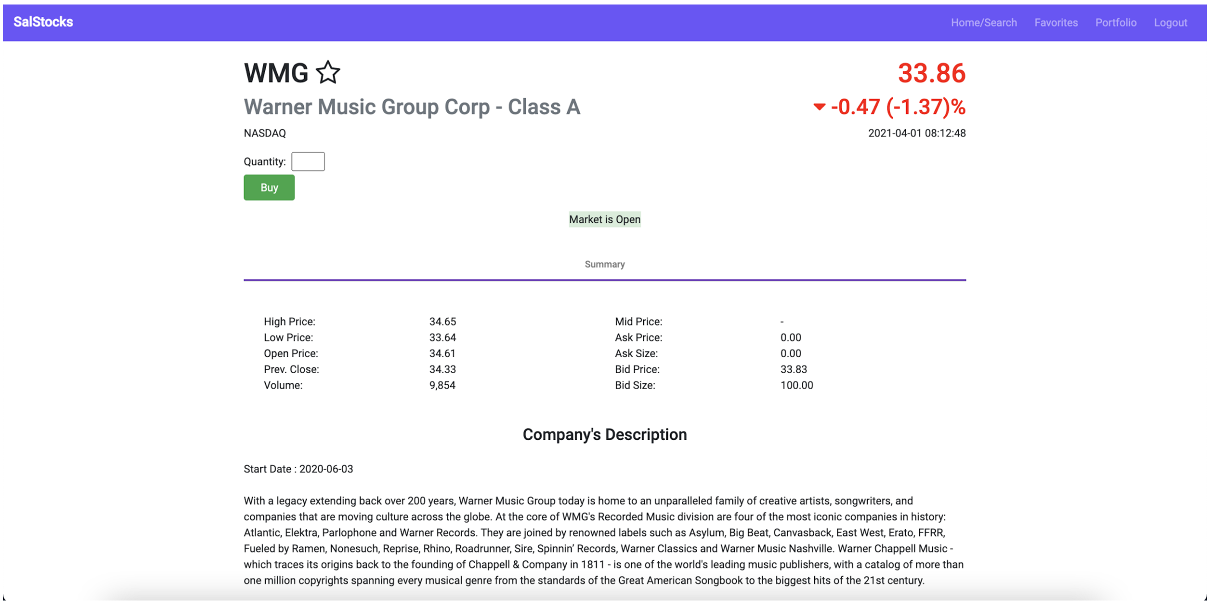
High Price:	34.65
Low Price:	33.64
Open Price:	34.61
Prev. Close:	34.33
Volume:	10,134

Company's Description

Start Date : 2020-06-03

With a legacy extending back over 200 years, Warner Music Group today is home to an unparalleled family of creative artists, songwriters, and companies that are moving culture across the globe. At the core of WMG's Recorded Music division are four of the most iconic companies in history: Atlantic, Elektra, Parlophone and Warner Records. They are joined by renowned labels such as Asylum, Big Beat, Canvasback, East West, Erato, FFRR, Fueled by Ramen, Nonesuch, Reprise, Rhino, Roadrunner, Sire, Spinnin' Records, Warner Classics and Warner Music Nashville. Warner Chappell Music - which traces its origins back to the founding of Chappell & Company in 1811 - is one of the world's leading music publishers, with a catalog of more than one million copyrights spanning every musical genre from the standards of the Great American Songbook to the biggest hits of the 21st century.

Figure 5: Detail page overview (Market is Closed)



WMG ☆

33.86

Warner Music Group Corp - Class A

▼ -0.47 (-1.37)%

NASDAQ

2021-04-01 08:12:48

Quantity: □

Market is Open

High Price:	34.65	Mid Price:	-
Low Price:	33.64	Ask Price:	0.00
Open Price:	34.61	Ask Size:	0.00
Prev. Close:	34.33	Bid Price:	33.83
Volume:	9,854	Bid Size:	100.00

Company's Description

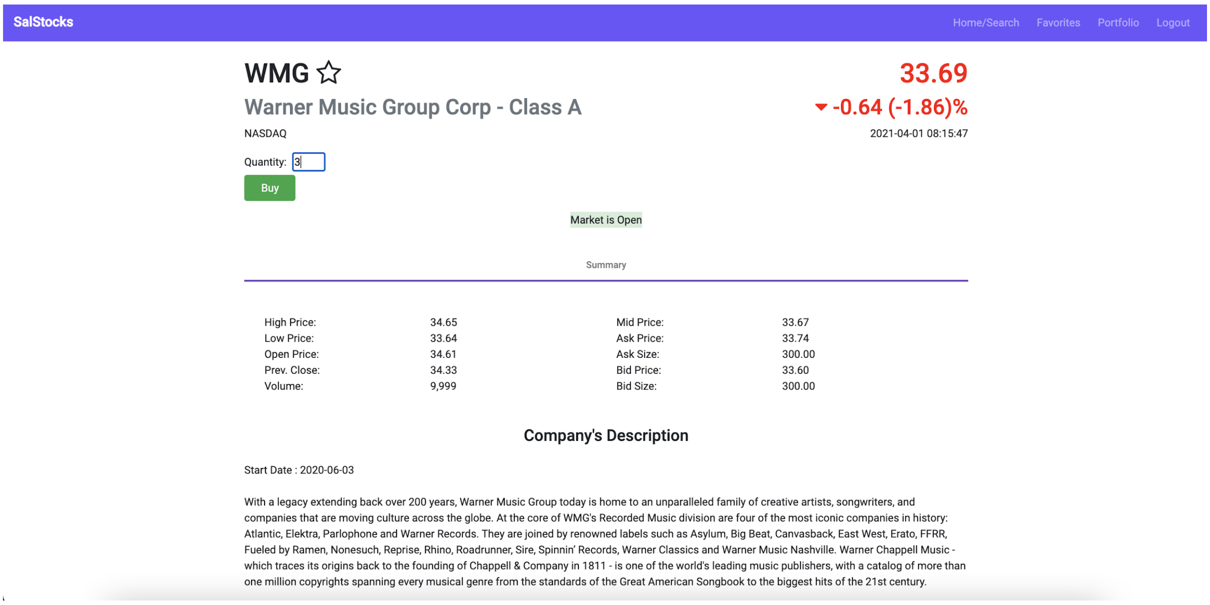
Start Date : 2020-06-03

With a legacy extending back over 200 years, Warner Music Group today is home to an unparalleled family of creative artists, songwriters, and companies that are moving culture across the globe. At the core of WMG's Recorded Music division are four of the most iconic companies in history: Atlantic, Elektra, Parlophone and Warner Records. They are joined by renowned labels such as Asylum, Big Beat, Canvasback, East West, Erato, FFRR, Fueled by Ramen, Nonesuch, Reprise, Rhino, Roadrunner, Sire, Spinnin' Records, Warner Classics and Warner Music Nashville. Warner Chappell Music - which traces its origins back to the founding of Chappell & Company in 1811 - is one of the world's leading music publishers, with a catalog of more than one million copyrights spanning every musical genre from the standards of the Great American Songbook to the biggest hits of the 21st century.

Figure 6: Detail page overview (Market is Open)

- When the user clicks on the star icon, the white star turns yellow, and that ticker should be stored in the user's favorites. An alert should be displayed showing "Added to Favorites" or "Removed From Favorites" (You can use a normal alert) and that stock should be visible on the Favorites Page, which we'll discuss in later sections.
- In order to buy shares, the user should enter the number of shares in the 'Quantity' input box and then click on the 'BUY' button (see **Figure 7**). Note that we need to show a popup alert indicating 'FAILED: Purchase not possible' (see **Figure 8**) in the following cases:
  - If the user inputs the quantity < 1 or the quantity field is empty and then 'BUY' clicked
  - The program will need to verify that you have enough cash left to BUY the stock at the current price and deny the buy transaction if the cash available is not enough. So, if enough cash is not there then the same Failed message should be indicated.

- In cases if the trade can be executed the popup window shows a message like 'SUCCESS: Executed purchase of 2 shares of WMG for $67.32' when 2 is entered in the input field and 'BUY' button is clicked, when at the page of a stock having ticker 'WMG'. (see **Figure 9**)



WMG

33.69

Warner Music Group Corp - Class A

▾-0.64 (-1.86)%

NASDAQ

2021-04-01 08:15:47

Quantity: 3

Market is Open

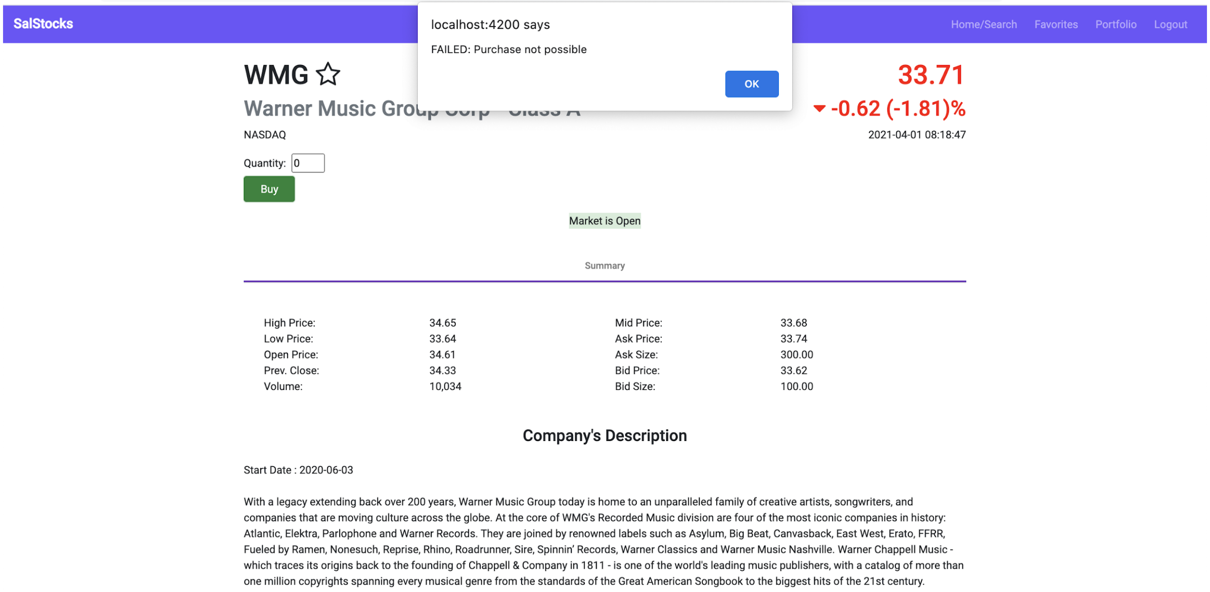
High Price:	34.65	Mid Price:	33.67
Low Price:	33.64	Ask Price:	33.74
Open Price:	34.61	Ask Size:	300.00
Prev. Close:	34.33	Bid Price:	33.60
Volume:	9,999	Bid Size:	300.00

Company's Description

Start Date : 2020-06-03

With a legacy extending back over 200 years, Warner Music Group today is home to an unparalleled family of creative artists, songwriters, and companies that are moving culture across the globe. At the core of WMG's Recorded Music division are four of the most iconic companies in history: Atlantic, Elektra, Parlophone and Warner Records. They are joined by renowned labels such as Asylum, Big Beat, Canvasback, East West, Erato, FFRR, Fueled by Ramen, Nonesuch, Reprise, Rhino, Roadrunner, Sire, Spinnin' Records, Warner Classics and Warner Music Nashville. Warner Chappell Music - which traces its origins back to the founding of Chappell & Company in 1811 - is one of the world's leading music publishers, with a catalog of more than one million copyrights spanning every musical genre from the standards of the Great American Songbook to the biggest hits of the 21st century.

Figure 7: UI components for buying (Input element for Quantity and a Buy button)



localhost:4200 says

FAILED: Purchase not possible

WMG

33.71

Warner Music Group Corp - Class A

▾-0.62 (-1.81)%

NASDAQ

2021-04-01 08:18:47

Quantity: 0

Market is Open

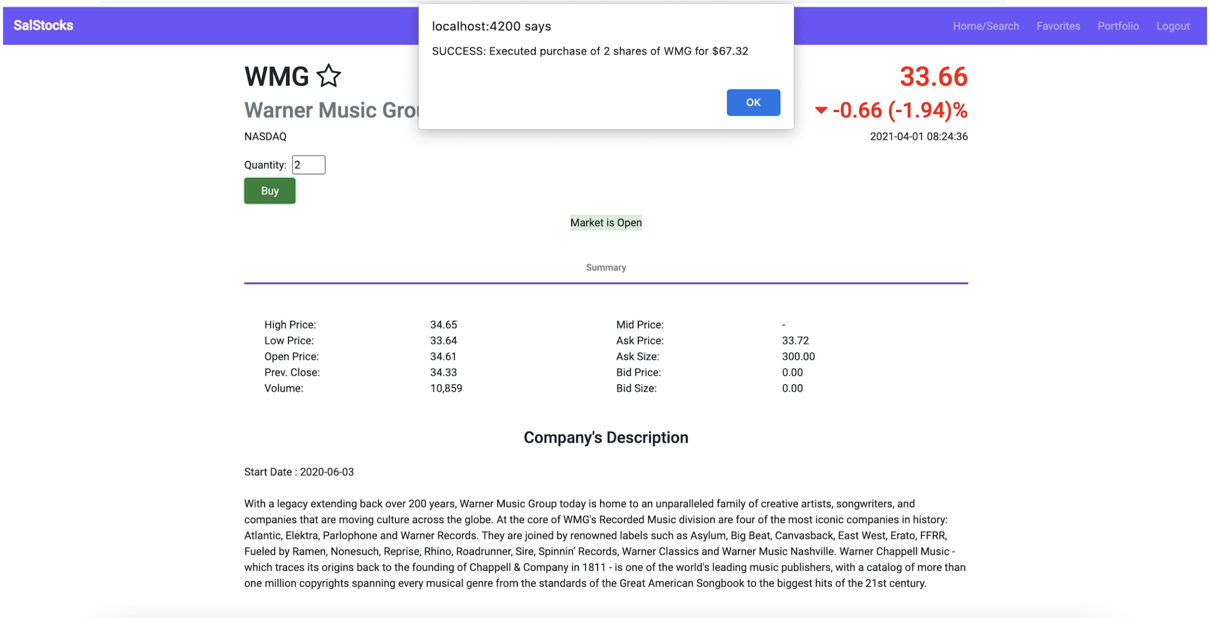
High Price:	34.65	Mid Price:	33.68
Low Price:	33.64	Ask Price:	33.74
Open Price:	34.61	Ask Size:	300.00
Prev. Close:	34.33	Bid Price:	33.62
Volume:	10,034	Bid Size:	100.00

Company's Description

Start Date : 2020-06-03

With a legacy extending back over 200 years, Warner Music Group today is home to an unparalleled family of creative artists, songwriters, and companies that are moving culture across the globe. At the core of WMG's Recorded Music division are four of the most iconic companies in history: Atlantic, Elektra, Parlophone and Warner Records. They are joined by renowned labels such as Asylum, Big Beat, Canvasback, East West, Erato, FFRR, Fueled by Ramen, Nonesuch, Reprise, Rhino, Roadrunner, Sire, Spinnin' Records, Warner Classics and Warner Music Nashville. Warner Chappell Music - which traces its origins back to the founding of Chappell & Company in 1811 - is one of the world's leading music publishers, with a catalog of more than one million copyrights spanning every musical genre from the standards of the Great American Songbook to the biggest hits of the 21st century.

Figure 8: Failed alert (In this case since buy button clicked when quantity was 0)



localhost:4200 says

SUCCESS: Executed purchase of 2 shares of WMG for $67.32

WMG ☆

Warner Music Gro

NASDAQ

Quantity: 2

33.66

▼-0.66 (-1.94)%

2021-04-01 08:24:36

Market is Open

High Price:	34.65	Mid Price:	-
Low Price:	33.64	Ask Price:	33.72
Open Price:	34.61	Ask Size:	300.00
Prev. Close:	34.33	Bid Price:	0.00
Volume:	10,859	Bid Size:	0.00

Company's Description

Start Date : 2020-06-03

With a legacy extending back over 200 years, Warner Music Group today is home to an unparalleled family of creative artists, songwriters, and companies that are moving culture across the globe. At the core of WMG's Recorded Music division are four of the most iconic companies in history: Atlantic, Elektra, Parlophone and Warner Records. They are joined by renowned labels such as Asylum, Big Beat, Canvasback, East West, Erato, FFRR, Fueled by Ramen, Nonesuch, Reprise, Rhino, Roadrunner, Sire, Spinnin' Records, Warner Classics and Warner Music Nashville. Warner Chappell Music - which traces its origins back to the founding of Chappell & Company in 1811 - is one of the world's leading music publishers, with a catalog of more than one million copyrights spanning every musical genre from the standards of the Great American Songbook to the biggest hits of the 21st century.

Figure 9: Success alert

As described, the page contains two major parts:

1) **Stock Details**: This panel displays all the values mentioned in **Table 2**. Last Timestamp should be only displayed beside the Market status if "Market is Close".

Fields	Sample Values	API reference
Ticker	NVDA	From table D.1, use 'ticker' key
Company's Name	Nvidia	From table D.1, use 'name' key
Exchange Code	NASDAQ	From table D.1, use 'exchangeCode' key
Last Price	108.22	From table D.3, use 'last' key
Change	1.1	Calculation is **'last' – 'prevClose'** from table D.3
Change Percentage	1.03%	Calculation is **'Change' * 100 / 'prevClose'** from table D.3
Current Timestamp	2020-09-24 16:26:27	Use the Date() function in JavaScript to display the current time.
Market Status	Open/Close	Read about it in section 3 (Company's Latest Price of the stock) of API Description section
Last Timestamp	2020-09-24 13:00:00	From Table D.3, use the value available for the key 'timestamp'.

Table 2 – Stock Details

2) **Summary**

It contains summary of the stock, which includes:

- Details are as following:
    - If market is Open: Display all the fields mentioned in **Table 3** and **Table 4**, as shown in **Figure 6**.
    - If market is Closed: Display all the fields mentioned in **Table 3**, as shown in **Figure 5**.

- Company's Description: values for 'startDate' and 'description' key from **Table 4.1.**

Fields	Sample Values	API reference
High Price	110.25	From table D.3, use 'high' key
Low Price	105	From table D.3, use 'low' key
Open Price	105.17	From table D.3, use 'open' key
Prev. Close	107.12	From table D.3, use 'close' key
Volume	165893169	From table D.3, use 'volume' key

Table 3: Fields used inside Summary Tab (Part 1)

Fields	Sample Values	API reference
Mid Price	110.1	From Table D.3, use 'mid' key
Ask Price	110.35	From Table D.3, use 'askPrice' key
Ask Size	200	From Table D.3, use 'askSize' key
Bid Price	110.29	From Table D.3, use 'bidPrice' key
Bid Size	200	From Table D.3, use 'bidSize' key

Table 4: Fields used inside Summary Tab (Part 2)

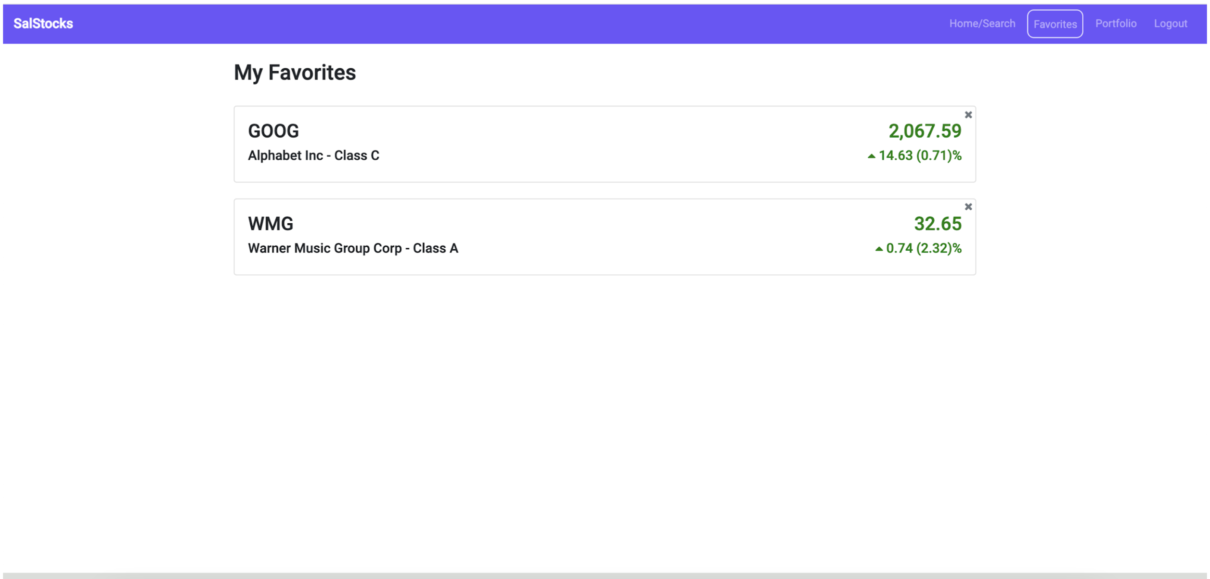
Important Note: The program will need to verify that you have enough cash left to BUY. Once you click buy or sell, it will be at the last bid / ask: BUY at the Ask Price, and SELL at the Bid Price. This is what is called buying and selling "at the market" (ATM) price. The difference between the ask and bid prices is called the "spread."

Favorites (only for logged in user)

This menu will display all the stocks that are added to favorites by the user. (see **Figure 10**)

- If the change is positive, the color of the 'last', 'change' and 'changePercentage' keys should be green
- If the change is negative, the color of the 'last', 'change' and 'changePercentage' keys should be red
- If there is no change, the color of the 'last', 'change' and 'changePercentage' keys should be black.
- When clicked on the close button ('cross') on the right-top corner of the card, it should remove the stock from the favorites and display an updated favorites list.
- When clicked on the card, it should open the details page of that ticker (stock).
- If the Favorites page is empty, it should display the alert as shown in **Figure 11**.

'last' key should be used from **Table D.3**. 'change' and 'changePercentage' should be calculated in a similar fashion as to the one shown in **Table 2**.

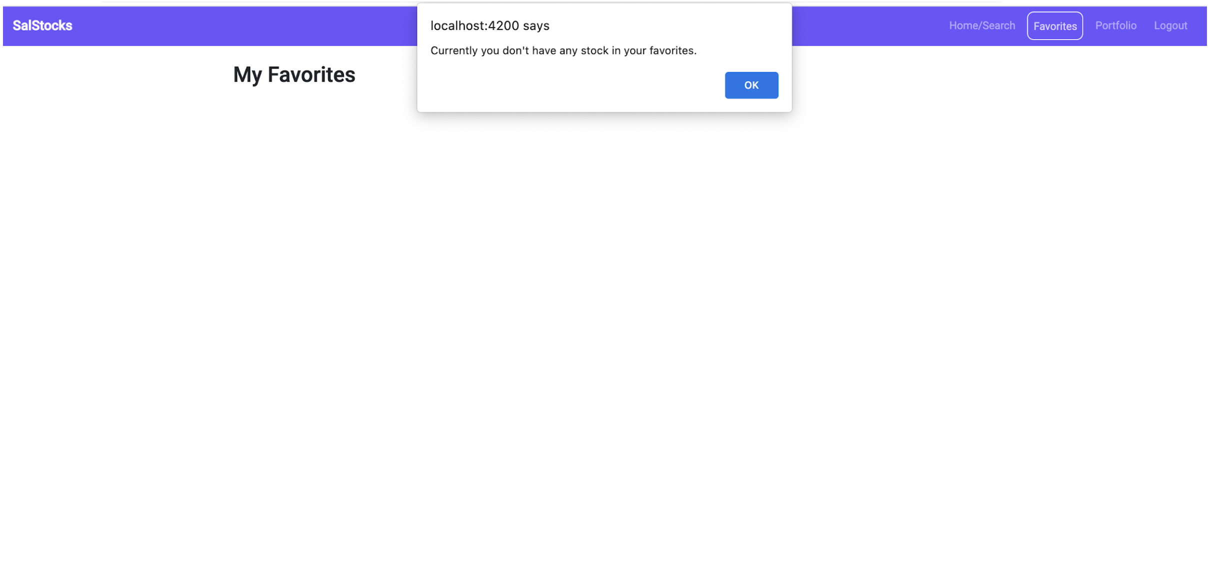


My Favorites

GOOG
Alphabet Inc - Class C
2,067.59
▲14.63 (0.71)%

WMG
Warner Music Group Corp - Class A
32.65
▲0.74 (2.32)%

Figure 10: Favorites menu page



My Favorites

localhost:4200 says

Currently you don't have any stock in your favorites.

Figure 11: Favorites Empty Alert

<u>Portfolio (only for logged in user)</u>

NOTE: Registered users get a "paper money account" with $50,000 to start with and can trade (buy and sell using "market" orders) during the opening times of the US stock market (6:30AM – 1:00PM PDT).

This Portfolio page will show the following information:

1. The amount of cash left (cash balance)
2. Your total account value which is equal to cash balance + stock values at current trading price. You need to display the total account value prominently
3. You need to display all the stocks that have been bought by the user (i.e., the current portfolio

of the user). See **Figure 12**. In particular:

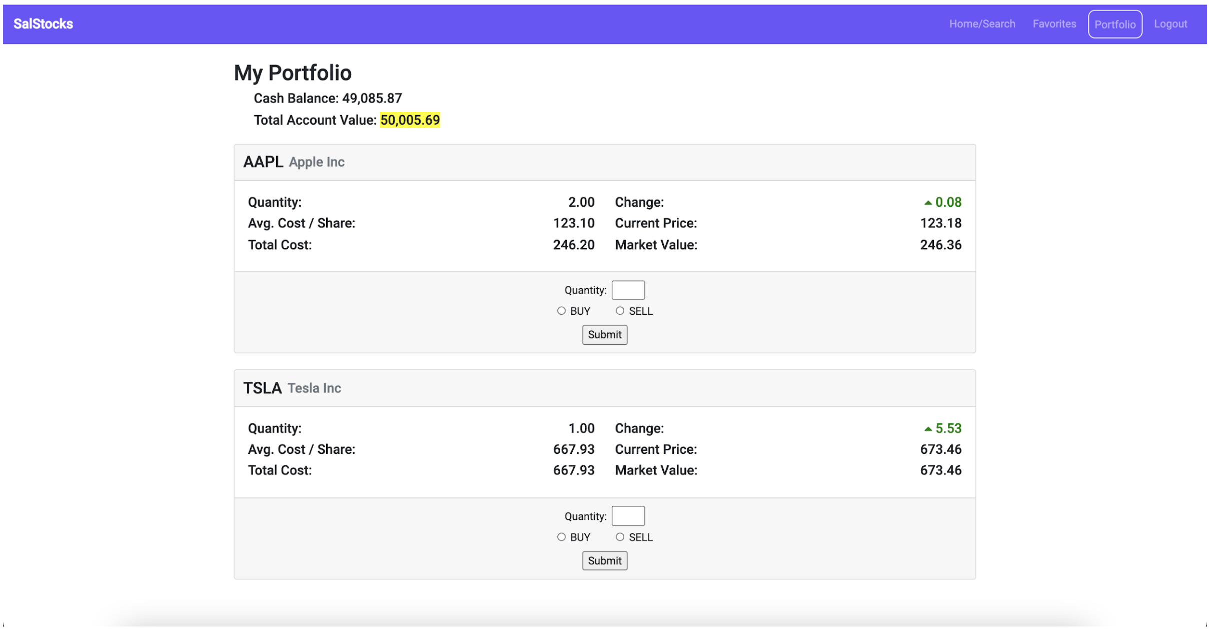
a. If the current rate is greater than the rate at which user bought it, then the color of the ‘Change’, ‘Current Price’ and ‘Current Total’ keys should be green
b. If the change is negative, the color of the ‘Change’, ‘Current Price’ and ‘Current Total’ keys should be red
c. If there is no change, the color of the ‘Change’, ‘Current Price’ and ‘Current Total’ keys should be black
d. In order to buy or sell shares the user should enter the number of shares in the ‘Quantity’ input box, select ‘BUY’ or ’SELL’ from the radio buttons and then click on the ‘Submit’ button.
e. Note that we need to show a popup alert indicating ‘FAILED: Purchase not possible’ after Submit is clicked (having selected buy in the radio option) (see **Figure 13**) in the following cases:
    i. If the user inputs the quantity < 1 or the quantity field is empty and then ‘Submit’ clicked
    ii. The program will need to verify that you have enough cash left to buy the stock at the current price and deny the buy transaction if the cash available is not enough. So, if enough cash is not there then the Failed message should be indicated.
f. In cases where the buy trade(purchase) can be executed the popup window should show a message like ‘SUCCESS: Executed purchase of 2 shares of WMG for $65.54’ when 2 is entered in the input field, ‘BUY’ selected in radio button and ‘Submit’ clicked, when the stock under consideration has ticker ‘WMG’.
g. Note that we need to show a popup alert indicating ‘FAILED: Sale not possible’ (see **Figure 14**) if the quantity entered by the user is not valid. Input is Valid if, 0<input<=Quantity (here Quantity refers to the one described in Table 5) and must be non-empty. Quantity is described in Table 5. Similarly, if the quantity entered by the user is valid, we need to show a success alert like “SUCCESS: Executed sale of 1 share of APPL for $245.92”.

‘last’ key should be used from Table D.3 for ‘Current Price’. ‘Current Change’ and ‘Current Total’ should be calculated as shown in **Table 5**. You need to change the values associated with a company (ticker) in the portfolio when you perform a buy/sell.

Quantity	Total Number of stocks currently in the portfolio (could be the result of multiple buy/sell orders) It should be more than 0. Otherwise remove it from the portfolio.
Total Cost	Total cost is the sum of the total cost paid for all the purchases of the stock. For Example, if user has bought 10 stocks of AAPL in past, at the rate of 200/share, and today the user buys another 10 shares of stocks of AAPL at the current price, i.e. 300, then the Total Cost for the user will be (10*200) + (10*300) = 5000. So, Quantity is 20 and Total Amount is 5000. Note: every time you SELL/BUY shares of stock, the total cost needs to be adjusted.
Average Cost per Share	(Total Cost / Quantity)
Current Price	‘last’ key from the table D.3

Change	(Average Cost per Share – Current Price) of the stock. Here, Current Price is ‘last’ key from the table D.3
Market Value	(Current Price * Qty), here Current Price is ‘last’ key from **Table D.3** and Qty is the number of stocks present in the user's portfolio.

Table 5: Fields used in Portfolio Cards.



SalStocks

Home/Search Favorites Portfolio Logout

My Portfolio

Cash Balance: 49,085.87

Total Account Value: 50,005.69

AAPL Apple Inc

Quantity:	2.00	Change:	▲0.08
Avg. Cost / Share:	123.10	Current Price:	123.18
Total Cost:	246.20	Market Value:	246.36

Quantity:

○ BUY ○ SELL

Submit

TSLA Tesla Inc

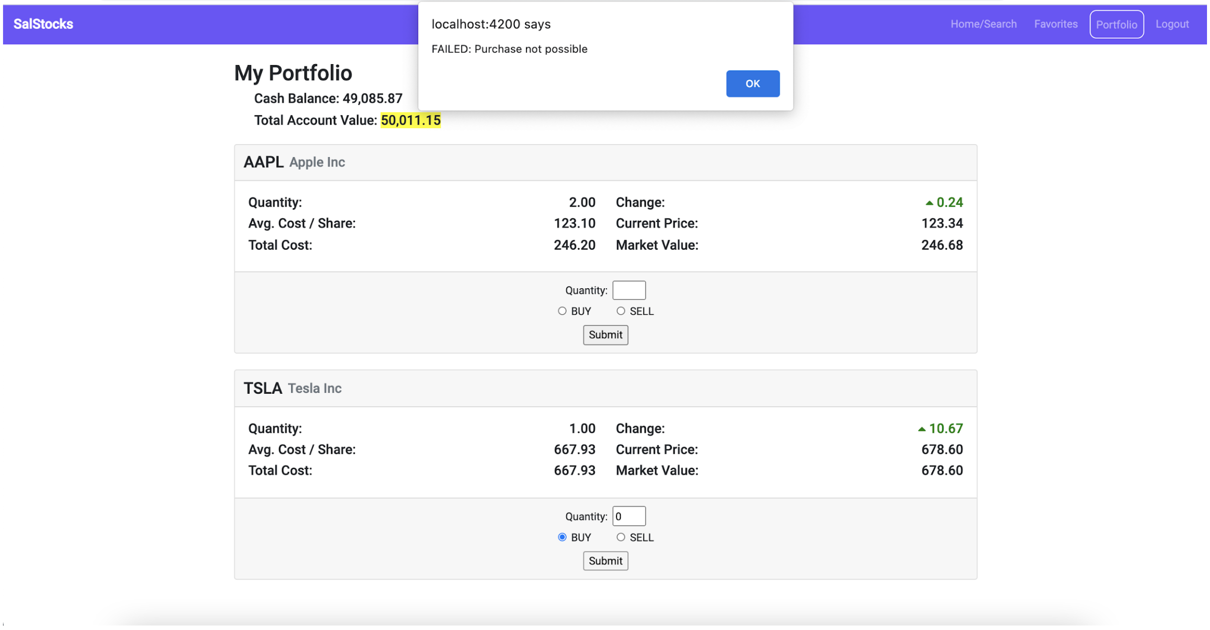
Quantity:	1.00	Change:	▲5.53
Avg. Cost / Share:	667.93	Current Price:	673.46
Total Cost:	667.93	Market Value:	673.46

Quantity:

○ BUY ○ SELL

Submit

Figure 12: Portfolio



SalStocks

localhost:4200 says

FAILED: Purchase not possible

OK

Home/Search Favorites Portfolio Logout

My Portfolio

Cash Balance: 49,085.87

Total Account Value: 50,011.15

AAPL Apple Inc

Quantity:	2.00	Change:	▲0.24
Avg. Cost / Share:	123.10	Current Price:	123.34
Total Cost:	246.20	Market Value:	246.68

Quantity:

○ BUY ○ SELL

Submit

TSLA Tesla Inc

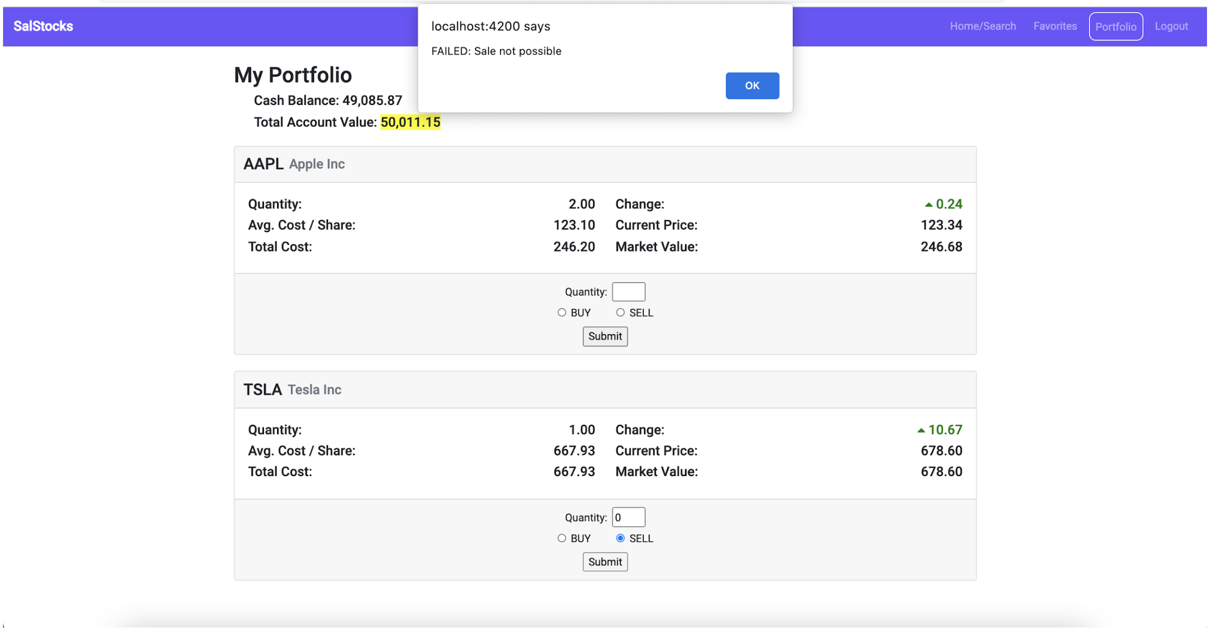
Quantity:	1.00	Change:	▲10.67
Avg. Cost / Share:	667.93	Current Price:	678.60
Total Cost:	667.93	Market Value:	678.60

Quantity: 0

● BUY ○ SELL

Submit

Figure 13: Failed alert (In this case submit was clicked when quantity was 0 and buy selected)



localhost:4200 says

FAILED: Sale not possible

My Portfolio

Cash Balance: 49,085.87

Total Account Value: 50,011.15

AAPL Apple Inc

Quantity:	2.00	Change:	▲0.24
Avg. Cost / Share:	123.10	Current Price:	123.34
Total Cost:	246.20	Market Value:	246.68

Quantity:

○ BUY ○ SELL

TSLA Tesla Inc

Quantity:	1.00	Change:	▲10.67
Avg. Cost / Share:	667.93	Current Price:	678.60
Total Cost:	667.93	Market Value:	678.60

Quantity: 0

○ BUY ● SELL

Figure 14: Failed alert (In this case submit was clicked when quantity was 0 and sell selected)

Note: you cannot sell stock that you do not have. The quantity of stock must be less or equal to the number of shares of stock in your portfolio. See item 3.e on Page 11.

Note: Portfolio and Favorites must be sorted in ascending order based on the Ticker.

API's description

Tiingo API calls,

In this homework, we will use the Tiingo API. A comprehensive reference about this API is available at:

1) https://api.tiingo.com/documentation/end-of-day
2) https://api.tiingo.com/documentation/iex

1) Company's Description

For **Company's Description**, use the following API. For more details refer **Figure D.1**:
https://api.tiingo.com/tiingo/daily/<ticker>?token=<APIKeyTiingo>

URL parameter in API Call:

- Ticker: Ticker symbol of the stock. E.g., MSFT
- Token: The API access Token. It is private, please do not share with anyone.

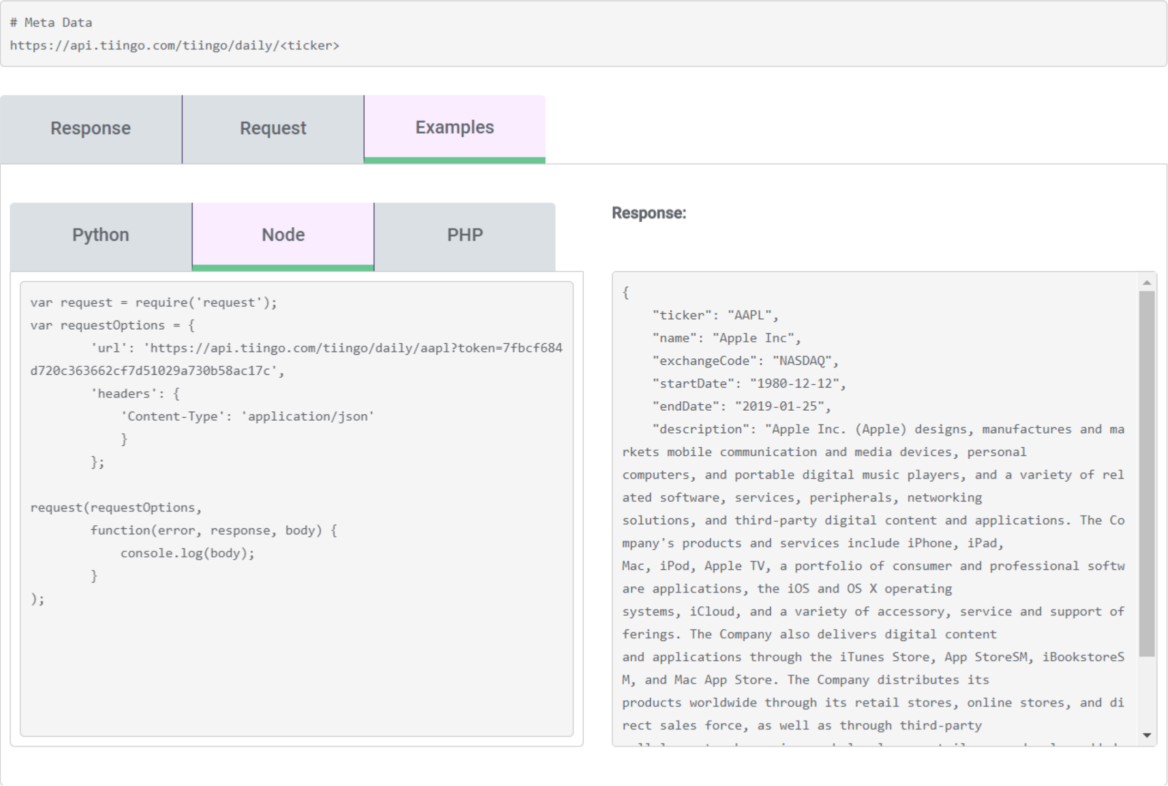
An example URL constructed from the parameters will look similar to this:

https://api.tiingo.com/tiingo/daily/AAPL?token=12PrIvA32tEmYtEmpToKeN23

Response:

Response Keys	**Details**
ticker	Stock Symbol (Ticker)
name	Company's Name
description	Company's Description
startDate	Company's Start Date
exchangeCode	Company's Exchange Code

Table D.1: Response received for Company's Meta Data API call.



```
# Meta Data
https://api.tiingo.com/tiingo/daily/<ticker>
```

```
var request = require('request');
var requestOptions = {
        'url': 'https://api.tiingo.com/tiingo/daily/aapl?token=7fbcf684
d720c363662cf7d51029a730b58ac17c',
        'headers': {
            'Content-Type': 'application/json'
            }
        };

request(requestOptions,
        function(error, response, body) {
            console.log(body);
        }
);
```

```
{
    "ticker": "AAPL",
    "name": "Apple Inc",
    "exchangeCode": "NASDAQ",
    "startDate": "1980-12-12",
    "endDate": "2019-01-25",
    "description": "Apple Inc. (Apple) designs, manufactures and ma
rkets mobile communication and media devices, personal
computers, and portable digital music players, and a variety of rel
ated software, services, peripherals, networking
solutions, and third-party digital content and applications. The Co
mpany's products and services include iPhone, iPad,
Mac, iPod, Apple TV, a portfolio of consumer and professional softw
are applications, the iOS and OS X operating
systems, iCloud, and a variety of accessory, service and support of
ferings. The Company also delivers digital content
and applications through the iTunes Store, App StoreSM, iBookstoreS
M, and Mac App Store. The Company distributes its
products worldwide through its retail stores, online stores, and di
rect sales force, as well as through third-party
```

Figure D.1: Details regarding Company's Metadata

2) **Company's daily quote:**

For **Company's daily quote** (Latest End of Day Price Information), use the following API. For more details refer to **Figure D.2**

https://api.tiingo.com/tiingo/daily/<ticker>/prices?token=<APIKeyTiingo>

URL parameter in API Call:

- Ticker: Ticker symbol of the stock. E.g., AAPL
- Token: The API access Token. It is private, please do not share with anyone.

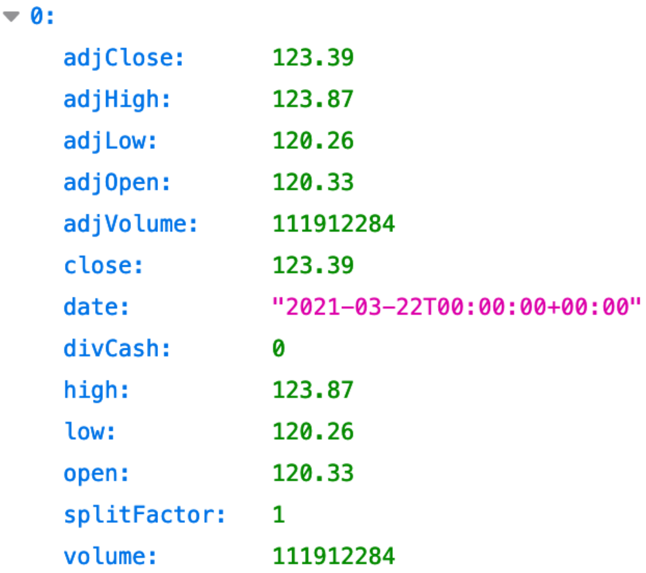
An example URL constructed from the parameters will look similar to this:

https://api.tiingo.com/tiingo/daily/AAPL/prices?token=12PrIvA32tEmYtEmpToKeN23

Response: We receive an object which contains the following keys. We only need the following keys from the response.

Response Keys	Details
open	Company’s open price
high	Company’s high price
low	Company’s low price
close	Company’s closing price
volume	Company’s volume

Table D.2: Details regarding Company’s Daily Quote (Latest End of Day Price Information).



```
▼ 0:
    adjClose:      123.39
    adjHigh:       123.87
    adjLow:        120.26
    adjOpen:       120.33
    adjVolume:     111912284
    close:         123.39
    date:          "2021-03-22T00:00:00+00:00"
    divCash:       0
    high:          123.87
    low:           120.26
    open:          120.33
    splitFactor:   1
    volume:        111912284
```

Figure D.2: Details regarding Company’s daily quote (Latest Price Information)

3) Company’s Latest Price of the stock

For **Company’s Latest Price**, use the following API. For more details refer Figure D.3: https://api.tiingo.com/iex/?tickers=<ticker>&token=<APIKeyTiingo>

URL parameter in API Call:

- Ticker: Ticker symbol of the stock. E.g.: AAPL
- Token: The API access Token. It is private, please do not share with anyone.

An example URL constructed from the parameters will look similar to:

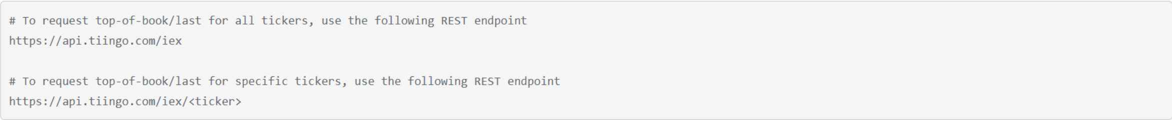
https://api.tiingo.com/iex?tickers=AAPL&token=12PrIvA32tEmYtEmpToKeN23

Response:

Response Keys	**Details**
ticker	Ticker symbol
timestamp	Timestamp of the data
last	Company’s latest price based on timestamp
prevClose	Company’s previous closing based on timestamp
open	Company’s open price based on timestamp
high	Company’s high price based on timestamp
low	Company’s low price based on timestamp
mid	Company’s mid-price based on timestamp
volume	Company’s volume based on timestamp
bidSize	Company’s bid size based on timestamp
bidPrice	Company’s bid price based on timestamp
askSize	Company’s ask size based on timestamp
askPrice	Company’s ask price based on timestamp

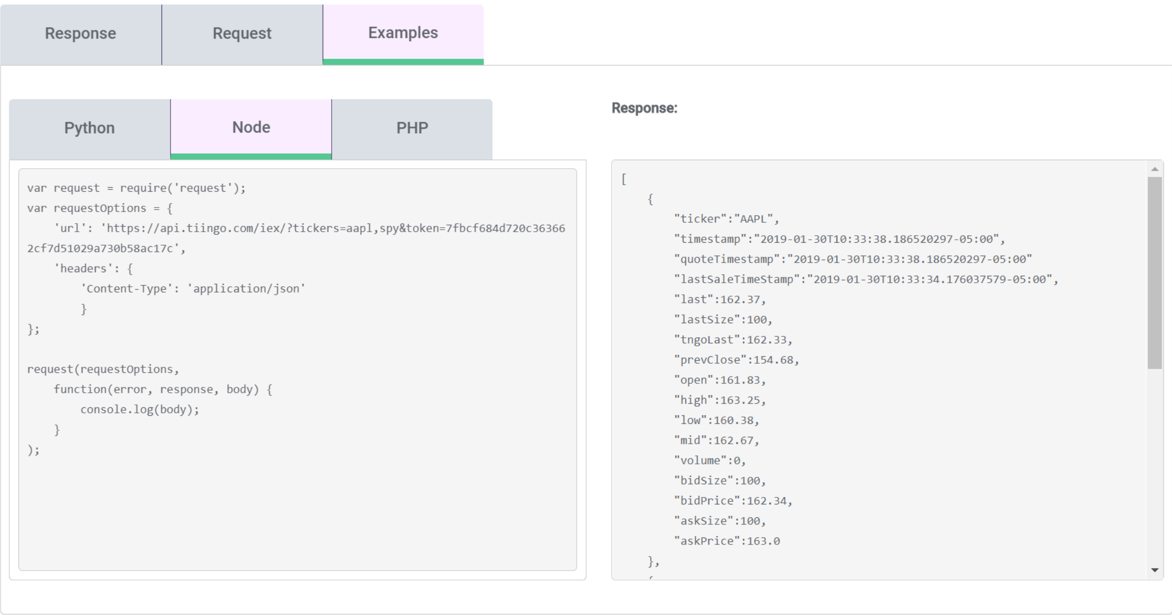
Table D.3: Response received for Company’s Latest Price of the Stock.

Value of ‘mid’, ‘bidPrice’, ‘bidSize’, ‘askPrice’, ‘askSize’ will be null when market is closed. Value of mid can be null even when the market is open, if this happens then you should display ‘-’ instead of null. Market Status must be open if the difference between current Timestamp (current Timestamp will be of the created using new Date() in javascript) and ‘timestamp’ key is less than 60 seconds.



```
# To request top-of-book/last for all tickers, use the following REST endpoint
https://api.tiingo.com/iex

# To request top-of-book/last for specific tickers, use the following REST endpoint
https://api.tiingo.com/iex/<ticker>
```



```
var request = require('request');
var requestOptions = {
    'url': 'https://api.tiingo.com/iex/?tickers=aapl,spy&token=7fbcf684d720c36366
2cf7d51029a730b58ac17c',
    'headers': {
        'Content-Type': 'application/json'
        }
};

request(requestOptions,
    function(error, response, body) {
        console.log(body);
    }
);
```

```
[
    {
        "ticker":"AAPL",
        "timestamp":"2019-01-30T10:33:38.186520297-05:00",
        "quoteTimestamp":"2019-01-30T10:33:38.186520297-05:00"
        "lastSaleTimeStamp":"2019-01-30T10:33:34.176037579-05:00",
        "last":162.37,
        "lastSize":100,
        "tngoLast":162.33,
        "prevClose":154.68,
        "open":161.83,
        "high":163.25,
        "low":160.38,
        "mid":162.67,
        "volume":0,
        "bidSize":100,
        "bidPrice":162.34,
        "askSize":100,
        "askPrice":163.0
    },
```

Figure D.3: Details regarding Company’s Meta Data