

2021

IFN666 Stocks Web APP – Client Side



Christopher Chandra,

Yun Chen (Michael)

N10698612,

N10629297

1/1/2021

IFN666

Stocks Web APP – Client Side

Christopher: N10698612
Michael: N10629297

Contents

Introduction	2
Youtube Demonstration Video link:	2
Purpose & description	3
Completeness and Limitations	4
Use of APIs	5
Financial Modelling Prep	5
Alpha Vantage	5
Use of End Points of the chosen Stock API	5
/api/v3/nasdaq_constituent?	5
/query?function=TIME_SERIES_DAILY&symbol=\${symbol}	6
/api/v3/quote/\${symbol}?	7
Modules used	7
Ag-grid-react	7
React (states)	7
React-router-dom	7
React-bootstrap	8
React-chartjs-2	8
React-datepicker	8
React-select	8
Application Design	8
Navigation and Layout	8
Technical Description	9
Architecture	9
Test plan	11
Difficulties/persistent problems	13
Extensions (Optional)	14
User guide	14
Home Page	14
Stocks Page	15
History and Quote page	16
References	18

Christopher: N10698612
Michael: N10629297

Appendices	18
Appendix A – self-checking against CRA	18
Appendix B – Screenshots of test plan results	19

Introduction

Youtube Demonstration Video link:

<https://youtu.be/IK2035wua1E>

Purpose & description

The main goal of our "Stock Prices" front-end web application is to allow users to view and analyze stock market data. This includes the quote and history of each company's stock prices. The dataset is drawn from the stock market. For each day the user would be able to access the following information: Date Of the transaction, stock's symbol, company name, industry of the company, price at opening day, highest price that day, lowest price that day, the latest price at close on that day, and a number of shares traded in that day. The dataset presented will be taken from "financial modeling prep" API and will be presented in 2 different ways, by mixed charts and tables as can be seen in figure 1 below.

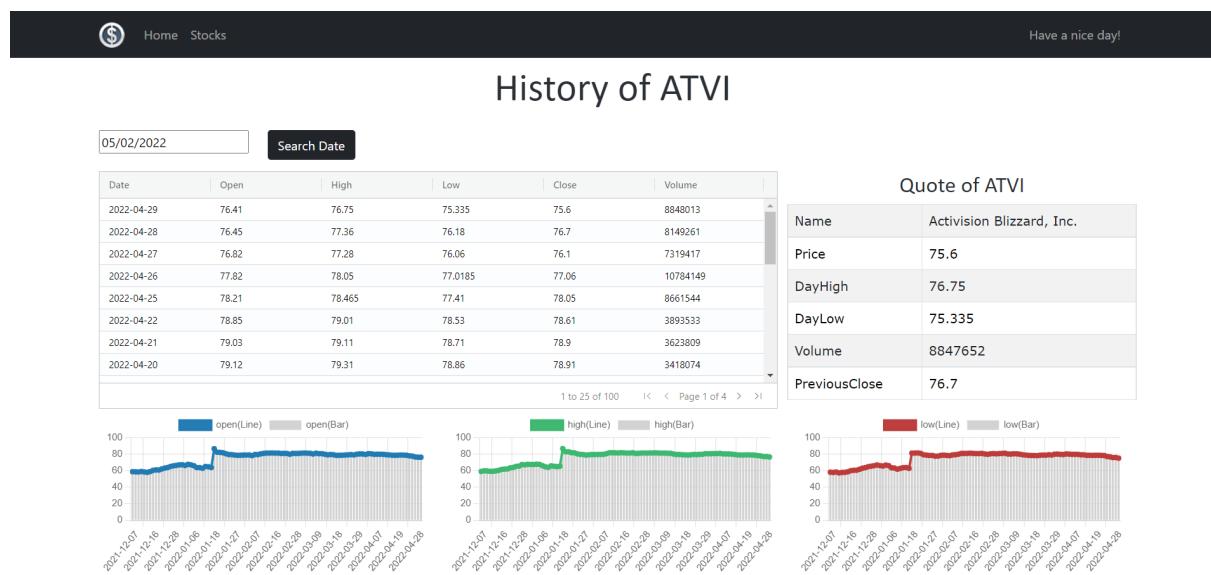


Figure 1 Historical information of stock

There is a particular module that we use to provide users with functionality beyond what was expected from the specification. That module was the react-select module. The requirement specifies that the user needs to type in the symbol of the stock that they want to search with when looking for a specific stock. Using the react-select module the user can both type in the symbol that they wanted and choose the suggested symbol that matches the one that they wanted to search for. We think this component is more convenient for the users because not every user would know all of the symbols of stocks that are present in the "financial modeling prep" API.

Christopher: N10698612
Michael: N10629297

The screenshot shows a 'Stocks' page with a navigation bar at the top. The search bar includes a 'Symbol' input field, a 'Symbol Search' dropdown, and two buttons: 'Industry:' and 'Industry Search'. Below the search bar is a table with columns for Symbol, Name, and Industry. The table lists various Nasdaq companies with their respective names and industries.

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology
AEP	American Electric Power	Utilities
AMGN	Amgen	Healthcare
ADI	Analog Devices	Technology
ANSS	Ansys	Technology
AAPL	Apple	Technology

Figure 2 React-select search bar

The module that we use to style our front-end website application comes from react-bootstrap. This is because React-Bootstrap provides some very beautiful and responsive components that can be used by people without much issue. This allows for a smoother re-education of the codes if at any point in the future we or any other developer would want to update or change the styling of our website. And, since react-bootstrap has already provided us with most of the styling that we need for now, we see no other reason to use any other modules to style our front-end website application.

The screenshot shows a 'Stock Price' page. It features a large chart on the left and a table of stock prices on the right. The table includes columns for symbol, name, price, and percentage change. A 'NAVIGATE' button is located at the bottom center.

Stock prices API Assessment 2 IFN666

Figure 3 Website's Home Page

Completeness and Limitations

The Front-end website would contain three pages: the home page, stocks page, and history page. The home page will be the landing page, it will contain the logo, a brief description of the website, and the navigation bar to go to the stocks page. The stocks page will show all of the companies listed on the Nasdaq market, it will contain a table that will show the symbol, name, and industry of each company listed in the Nasdaq market and two dropdown lists that would be used to filter the content of the table based on both symbol and industries. Finally, the history page will show both the

Christopher: N10698612

Michael: N10629297

quote and daily price history of a specific company, it will contain a history table that will show (date, open, high, low, close, volume) of the selected company, a quote table that will show (name, price, dayhigh, daylow, volume, and previous close) of the selected companies, one date picker to filter the history table by date, and 5 charts to visualize the dataset inside the history table.

The user would need to click the row of a specific company to get to its history page. This would make sure that users would not visit the history page without any specific symbol and hence fetching APIs unnecessarily. The navigation bar will be present on every page which would be handled by the React-Router module. The pagination of each page implemented will show 25 items for each pagination to ensure effective information visualization. The tables would also have filters and sorting functions implemented on each of the columns. Lastly, the chart will show a mixed chart of both bar and line styles of chart, this is so the user would be able to see and choose a more suitable visualization of the data for them.

There are several limitations that could potentially become a problem in the future. The first limitations would be the warning for bad useState in stocks.js although the error does not affect the website's functionality, it is still concerning to have the warning. Besides that, there seems to be an occasional problem with a bad gateway ("Failed to load resource: the server responded with a status of 429 ()") to the financial modeling prep API when clicking a specific company in the stocks table.

Use of APIs

Financial Modelling Prep

- API for showing all of the stocks:
[https://financialmodelingprep.com/api/v3/nasdaq_constituent?apikey=\\${API_KEY}](https://financialmodelingprep.com/api/v3/nasdaq_constituent?apikey=${API_KEY})
- API for the quote of a specific symbol:
[https://financialmodelingprep.com/api/v3/quote/\\${symbol}?apikey=\\${API_KEY}](https://financialmodelingprep.com/api/v3/quote/${symbol}?apikey=${API_KEY})

Alpha Vantage

- Api for showing price history of a specific symbol for the past 100 days
[https://www.alphavantage.co/query?function=TIME_SERIES_DAILY&symbol=\\${symbol}&apikey=\\${API_KEY}](https://www.alphavantage.co/query?function=TIME_SERIES_DAILY&symbol=${symbol}&apikey=${API_KEY})

Use of End Points of the chosen Stock API

/api/v3/nasdaq_constituent?

To fetch the overview information (Symbol, Name and Industry) of the companies listed on the Nasdaq market.

Christopher: N10698612
Michael: N10629297

```
[ {  
    "symbol" : "ATVI",  
    "name" : "Activision Blizzard",  
    "sector" : "Communication Services",  
    "subSector" : "Communication Services",  
    "headQuarter" : "Santa Monica, CALIFORNIA",  
    "dateFirstAdded" : null,  
    "cik" : "0000718877",  
    "founded" : "1983-06-10"  
, {  
    "symbol" : "ADBE",  
    "name" : "Adobe",  
    "sector" : "Technology",  
    "subSector" : "Technology",  
    "headQuarter" : "San Jose, CALIFORNIA",  
    "dateFirstAdded" : null,  
    "cik" : "0000796343",  
    "founded" : "1986-01-08"  
, {  
    "symbol" : "AAPL"
```

Figure 4 API for all companies in Nasdaq market

/query?function=TIME_SERIES_DAILY&symbol=\${symbol}

To fetch the last 100 full price history (date, open, low, high, volume) of a specific company symbol
(\${symbol})

```
{  
    "Meta Data": {  
        "1. Information": "Daily Prices (open, high, low, close) and Volumes",  
        "2. Symbol": "ATVI",  
        "3. Last Refreshed": "2022-05-04",  
        "4. Output Size": "Compact",  
        "5. Time Zone": "US/Eastern"  
    },  
    "Time Series (Daily)": {  
        "2022-05-04": {  
            "1. open": "79.0800",  
            "2. high": "79.4950",  
            "3. low": "78.6600",  
            "4. close": "79.2400",  
            "5. volume": "8089451"  
        },  
        "2022-05-03": {  
            "1. open": "78.5000",  
            "2. high": "79.3869",  
            "3. low": "78.1800",  
            "4. close": "78.7800",  
            "5. volume": "10984069"  
        },  
    }  
}
```

Figure 5 API for daily price history for the last 100 days of a specific company

Christopher: N10698612

Michael: N10629297

/api/v3/quote/\${symbol}?

To fetch the full quote info (name, price, day low, day high, volume, previous close) of a specific company symbol ([/\\${symbol}?](#))

```
[ {  
    "symbol" : "ATVI",  
    "name" : "Activision Blizzard, Inc.",  
    "price" : 79.24000000,  
    "changesPercentage" : 0.58390340,  
    "change" : 0.45999908,  
    "dayLow" : 78.66000000,  
    "dayHigh" : 79.49500000,  
    "yearHigh" : 99.46000000,  
    "yearLow" : 56.40000000,  
    "marketCap" : 61953716224.00000000,  
    "priceAvg50" : 79.60700000,  
    "priceAvg200" : 75.81280000,  
    "volume" : 8101489,  
    "avgVolume" : 7360873,  
    "exchange" : "NASDAQ",  
    "open" : 79.08000000,  
    "previousClose" : 78.78000000,  
    "eps" : 3.14900000,  
    "pe" : 25.16354400,  
    "earningsAnnouncement" : "2022-08-01T10:59:00.000+0000",  
    "sharesOutstanding" : 781849018,  
    "timestamp" : 1651736384  
} ]
```

Figure 6 API quote information of a specific company

Modules used

Ag-grid-react

Module to provide fully-featured table components, including sorting and filtering.

<https://www.ag-grid.com/react-grid/>

React (states)

Module to provide useState and useEffect

<https://reactjs.org/docs/hooks-state.html>

React-router-dom

Module to provide navigation component including routers, navlinks, useNavigate, and useLocation

<https://www.npmjs.com/package/react-router-dom>

Christopher: N10698612

Michael: N10629297

React-bootstrap

Module to provide a template for styling and dropdownlist component

<https://www.npmjs.com/package/react-bootstrap>

React-chartjs-2

Module to a fully featured charting component

<https://www.chartjs.org/>

React-datepicker

Module to a fully featured date picker component

<https://www.npmjs.com/package/react-datepicker>

React-select

Module to a fully featured searchable dropdown list component

<https://www.npmjs.com/package/react-select>

Application Design

Navigation and Layout

There are in total four basic main functionality the website must cover. Showing the home page, Showing the list of stocks on the stocks page, showing the price history of a specific company, and lastly showing the daily quote of a specific company. and in order to do that three pages have been made to satisfy those needs. The home page shows all the necessary information needed to welcome the user to the website and also provides the navigation bar that will be present on every page. We decided to put the navigation bar on every page so that the user can always refer back to it when they feel lost on the website. The stocks page will display all of the companies that are listed in the Nasdaq market. There is a short text added above the table on the stock page to inform the user that they can click the row to check the stock history. The history page will do two functions which are showing the price history and quote of a specific company.

We have also considered adding both quote and history page links on the navigation bar but refrained in doing so. This is because doing so causes the website to fetch data from the API unnecessarily which we are trying to avoid. Some compromises that we have agreed on are that the only way to go to the history page is by clicking the table. We tried to resolve this by adding some text to help but it could still potentially confuse some users. In the future, we would try to improve this by exploring some designs other websites use.

The overall flow of our application design would be as follows: users will start at the home page, from here the user can go to the stocks page by either clicking the navigation link in the navigation bar or by clicking the stocks button in the middle of the website. Once users get to the stock page, they can start searching for a specific company using the two drop-down lists above the table, or they can enter a specific stock symbol. if the user wants to go to the history page, they can click on one of the cells in the table to be redirected to the history (and quote) page. On the history page, the user can then look at all the information about both price history and quote of the company that they selected in both tables and charts (for the price history). If the user at any point wants to go back to the homepage, they can click the home link in the navigation bar to do so. For a better illustration of the flow refer to figure 7 below.

Christopher: N10698612
Michael: N10629297

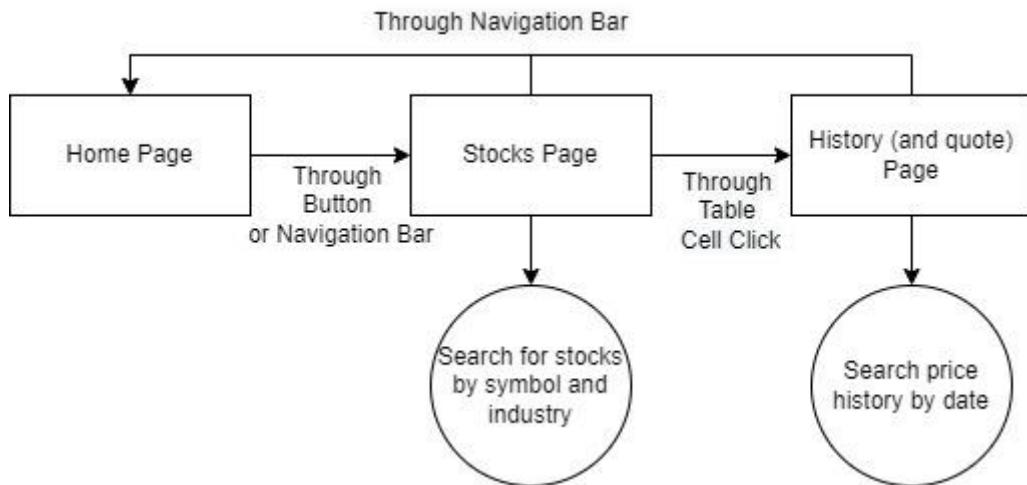


Figure 7 Flow of the website application

Technical Description

Architecture

The source code has been structured in the src directory into five folders. The API folder, components folder, Images folder, pages folder, and lastly styles folder. As can be seen in figure 8

```
> node_modules
> public
< src
  > API
  > Components
  > Images
  > Pages
  > Styles
  JS App.js
  JS index.js
  .gitignore
  {} package-lock.json
  {} package.json
  ⓘ README.md
```

Figure 8 source code folders

The API folder consists of files that will handle the process of fetching the stocks, quote, and historical data from the financial modeling API. As implied by the naming, ApiHistory.js will fetch the history data, ApiQuote.js will fetch the quote data, and ApiStocks.js will fetch the stock data. Christopher was mostly responsible for this folder.

Christopher: N10698612
Michael: N10629297

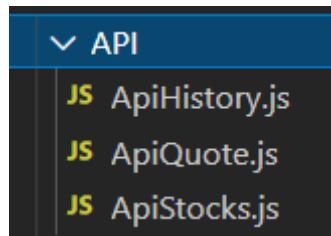


Figure 9 API folder

For the pages folder, three files namely history.jsx, home.jsx, and stocks.jsx are in it. Each file is connected to each other through routes and modules from react-router-dom. The first page that will be shown is the home page or in other words landing page. In the navigation bar there will be two links leading to both the home page and the stocks page. When the user clicks the stocks link they will be redirected to the stocks page. On the stocks page, the user will then need to click a specific cell in the table in order to move to the history (and quote) page. Each member was responsible for this folder.

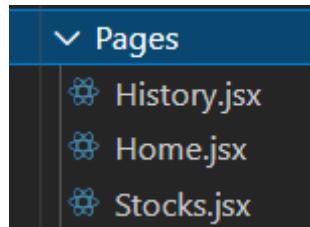


Figure 10 Pages folder

The Components folder consists of files that will be used in the pages. All of the components here are reusable and hence can be used multiple times in any page. The CarouselBanner.jsx will be used exclusively in the home page. The charts.jsx, MyDatePicker.jsx, Tables.jsx, and QuoteDisplay.jsx component will be used in the history page. Tables.jsx, SearchBar.jsx, and SelectBar.jsx will be used on the stock page. And lastly both navigation bar and footer will be used in all the pages. Each member was responsible for this folder.

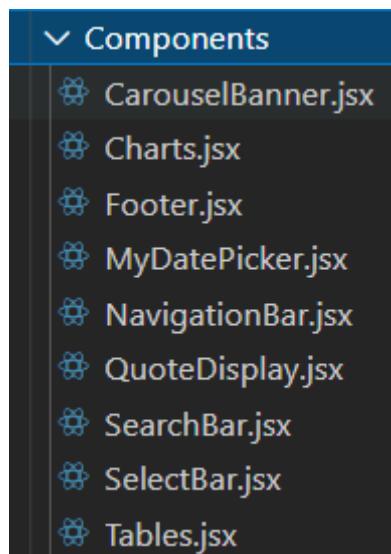


Figure 11 Components folder

Christopher: N10698612

Michael: N10629297

The Images folder as the name implies will consist of images that will be used in the website. the banners jpegs and icon jpegs will be used in the home page and logo.jpg will be used in the navigation bar. Michael was mostly responsible for this folder.

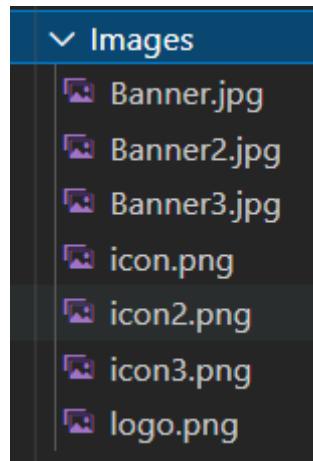


Figure 12 Images folder

The Styling folder only consists of an App.css and Index.css file that will be used in all of the pages. Each member was responsible for this folder.

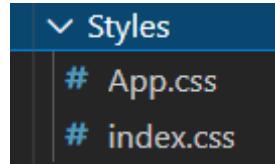


Figure 15 Styles folder

Test plan

Task	Expected Outcome	Result	Screenshot(s)
Checking home page			
Home page shows on http://localhost:3000/	Home page displayed, with table populated	PASS	Figure 30.1
Check page title	Page title is “Nasdaq Stocks Prices”	PASS	Figure 30.2
Navibar	Navigation shows logo, homelink, and stocks link.	PASS	Figure 30.3
Stocks button	Stocks button showed in home page	PASS	Figure 30.4
Carousel banners	When next icon is clicked banner is updated	PASS	Figure 30.5
Checking stocks page			
Stock details shown at http://localhost:3000/stocks	Stock dashboard shown.	PASS	Figure 30.6

Christopher: N10698612

Michael: N10629297

Stocks Table	table shows all of the stocks detail	PASS	Figure 30.7
Type and choose into Search symbol to filter by symbol	Stocks filtered by symbol	PASS	Figure 30.8
Choose a Industry to filter by industry	Stocks filtered by industry	PASS	Figure 30.9
Choose Name and Industry to filter by both	Stocks filtered by both name and industry	PASS	Figure 30.10
Check dropdown menu options	both symbol and industry dropdown have been filled with options	PASS	Figure 30.11
Table sort and filter	Table columns can sort and filter their data	PASS	Figure 30.12
Table pagination	Table only show 25 data per pagination	PASS	Figure 30.13
Table cell click	when cell is clicked user will be redirected correctly	PASS	Figure 30.14
Number of stocks	Display the number of stocks fetched	PASS	Figure 30.15
History (and quote) page			
Detailed stock details shown at http://localhost:3000/history/\${symbol}	Detailed history and quote dashboard shown.	PASS	Figure 30.16
Price history table	Price history of the company for the last 100 days shown in the history table	PASS	Figure 30.17
Date picker	Date picker will show calendar if clicked	PASS	Figure 30.18
Table sort and filter	Table columns can sort and filter their data	PASS	Figure 30.19
Table pagination	Table only show 25 data per pagination	PASS	Figure 30.20
Quote table	Quote information is shown in the quote table	PASS	Figure 30.21
Charts	4 charts of open, high, low, volume, will be shown in the page	PASS	Figure 30.22
Chart updates	4 charts will update their data once date has been picked from the date picker.	PASS	Figure 30.23
Mixed charts	2 types of charts representation is shown and the user can select which one to be displayed.	PASS	Figure 30.24
Charts details	details of each data in the chart is shown when the user is hovering above it.	PASS	Figure 30.25

Christopher: N10698612
Michael: N10629297

ALL Pages			
Responsiveness	Page is responsive to width and height changes.	PASS	Figure 30.26

Difficulties/persistent problems

Date formatting was one of the major roadblocks that we faced during the development of the website application. the main problem was we cannot find a simple way to turn the format of the Date function to the format that was given to us in the API. in order to resolve this we finally found the toISOString method where we would take the first 10 characters using slice function to get our desired format

```
async function getDataHistory(symbol, dateSearch)
  let url = "";
  if (
    dateSearch === "" ||
    dateSearch.toISOString().slice(0, 10) ===
    new Date().toISOString().slice(0, 10)
```

Figure 16 Date formatting code

React-select search bar is another problem we face. At first we were having some trouble trying to figure out how to create a component that can act as a searchable dropdown list. We got a tutor's suggestion to use the React-select component. And with some more extra help from the tutor, we also manage to style the react-select to have a fixed width when user types in it.

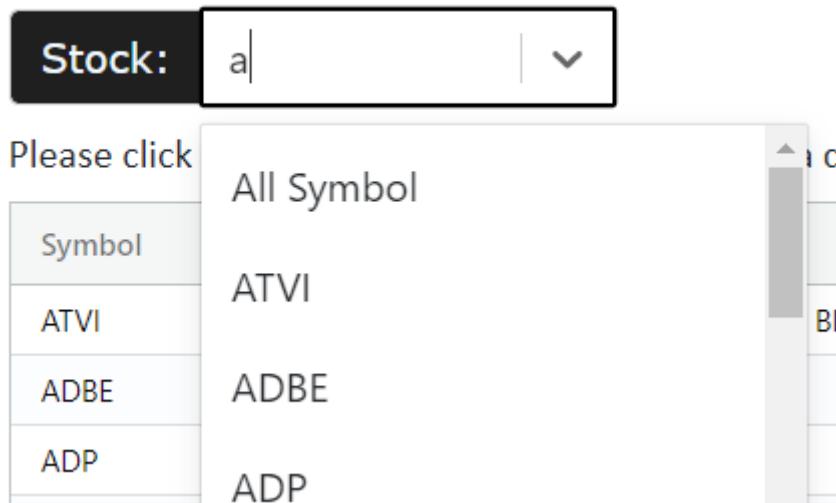


Figure 17 React Select search bar with fixed width

A problem that we are still facing is a warning for bad useState in the stocks page as shown in figure 18. Although this warning does not impede the functionality of the website it could potentially become a problem.

Christopher: N10698612

Michael: N10629297

```
✖ Warning: Cannot update a component (`Stocks`) while rendering a react-dom.development.js:86
different component (`SearchBar`). To locate the bad setState() call inside `SearchBar`,
follow the stack trace as described in https://reactjs.org/link/setstate-in-render
    at SearchBar (http://localhost:3000/static/js/bundle.js:1422:88)
    at div
    at http://localhost:3000/static/js/bundle.js:119973:5
    at div
    at http://localhost:3000/static/js/bundle.js:118350:5
    at div
    at http://localhost:3000/static/js/bundle.js:120902:5
    at div
    at http://localhost:3000/static/js/bundle.js:119130:5
    at div
    at Stocks (http://localhost:3000/static/js/bundle.js:2418:90)
    at Routes (http://localhost:3000/static/js/bundle.js:170743:5)
    at Router (http://localhost:3000/static/js/bundle.js:170676:15)
    at BrowserRouter (http://localhost:3000/static/js/bundle.js:169485:5)
    at NavigationBar
    at div
    at App
```

Figure 18 Warning for bad useState in stocks.js

Extensions (Optional)

There would be two things we could think of regarding improving the website design. The first one is to fix the width problem with the react-select search bar. And the second one would be the addition of a search bar in the navigation bar. This search bar would allow users to be redirected to the price history page of the symbol that they typed in as shown in figure 19.

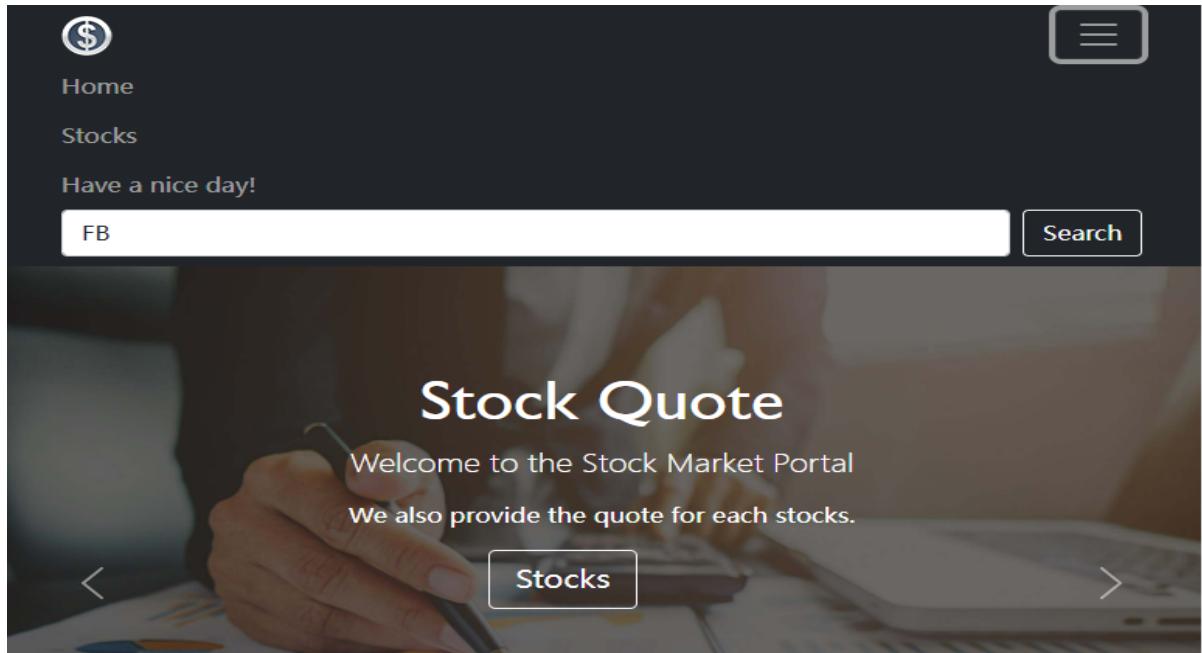


Figure 19 Navigation search bar

Christopher: N10698612
Michael: N10629297

User guide

Home Page

Once the user has opened the localhost:3000 link. the user will be greeted with the landing page which can be seen in figure 3 in the introduction section. From here user can use the stock button as shown in figure 20 to go to the stock page or using the link provided in the navbar as shown in figure 21

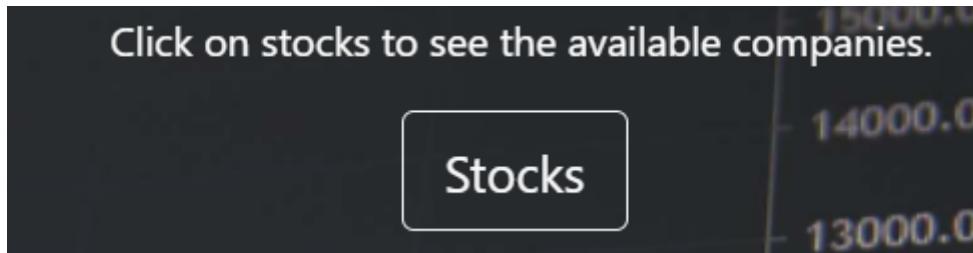


Figure 20 home page stock button

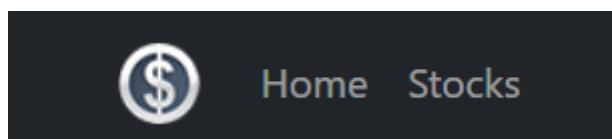


Figure 21 stock link in navbar

Stocks Page

The stocks page there has three main functions. The very first the user would see is “viewing all of stocks”. All of the companies in the nasdaq market will be listed out in the stocks table which can be seen in figure 22. The next thing the user can do is “searching for a specific company”. This can be done by either searching and choosing a symbol from the dropdown list search bar or choosing a specific industry from the drop down list of industry or by using both in conjunction with each other. This can be seen in figure 23 and 24. The last thing the user can do is “selecting a specific company”. The user can click on the cell of the table like shown in figure 25 and be redirected to the history (and quote) page

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology
AEP	American Electric Power	Utilities
AMGN	Amgen	Healthcare
ADI	Analog Devices	Technology
ANSS	Ansys	Technology
AAPL	Apple	Technology
AMAT	Applied Materials	Technology
TEAM	Atlassian	Technology
ADSK	Autodesk	Technology
BIDU	Baidu	Communication Services
BIIB	Biogen	Healthcare

Figure 22 Stocks table

Christopher: N10698612
Michael: N10629297

Stock: ATVI

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

Stock: All Symbol

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
LCID	Lucid	Financial Services
PYPL	PayPal	Financial Services

Figure 23 Using either symbol or industry to search

Stock: ATVI

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

Industry: Communication Services

Figure 24 Using both symbol or industry to search

Stock: ATVI

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

Industry: Communication Services

History of ATVI

05/02/2022

Search Date

Date	Open	High	Low	Close	Volume
2022-0...	76.41	76.75	75.335	75.6	8848013
2022-0...	76.45	77.36	76.18	76.7	8149261
2022-0...	76.82	77.28	76.06	76.1	7319417
2022-0...	77.82	78.05	77.0185	77.06	10784149
2022-0...	78.21	78.465	77.41	78.05	8661544
2022-0...	78.85	79.01	78.53	78.61	3893533
2022-0...	79.03	79.11	78.71	78.9	3623809
2022-0...	79.12	79.31	78.86	78.91	3418074

1 to 25 of 100 |< < Page 1 of 4 > >|

Quote of ATVI

Name	Activision Blizzard, Inc.
Price	75.6
DayHigh	76.75
DayLow	75.335
Volume	
PreviousClose	

History of ATVI

Figure 25 Clicking the table cell

History and Quote page

The history and quote page there has four main functions. The first one is called “viewing the price history from the past 100 days”. Upon entering the page the user can directly see the past 100 days of price history in the history table shown in figure 26. Secondly the user can also “view the quote information”. Same with the first functionality the user could also view this table which is shown at figure 27. Thirdly the user can “search for a specific date”. The user can filter the data inside the history table by choosing a specific date from the data picker shown in figure 28. Finally the user can “view the chart of the price history”, which can be seen in figure 29 below.

Christopher: N10698612

Michael: N10629297

Date	Open	High	Low	Close	Volume
2022-04-29	76.41	76.75	75.335	75.6	8848013
2022-04-28	76.45	77.36	76.18	76.7	8149261
2022-04-27	76.82	77.28	76.06	76.1	7319417
2022-04-26	77.82	78.05	77.0185	77.06	10784149
2022-04-25	78.21	78.465	77.41	78.05	8661544
2022-04-22	78.85	79.01	78.53	78.61	3893533
2022-04-21	79.03	79.11	78.71	78.9	3623809
2022-04-20	79.12	79.31	78.86	78.91	3418074

1 to 25 of 100 |< < Page 1 of 4 > >|

Figure 26 History table

Quote of ATVI

Name	Activision Blizzard, Inc.
Price	75.6
DayHigh	76.75
DayLow	75.335
Volume	8847652
PreviousClose	76.7

Figure 27 Quote table

Christopher: N10698612

Michael: N10629297

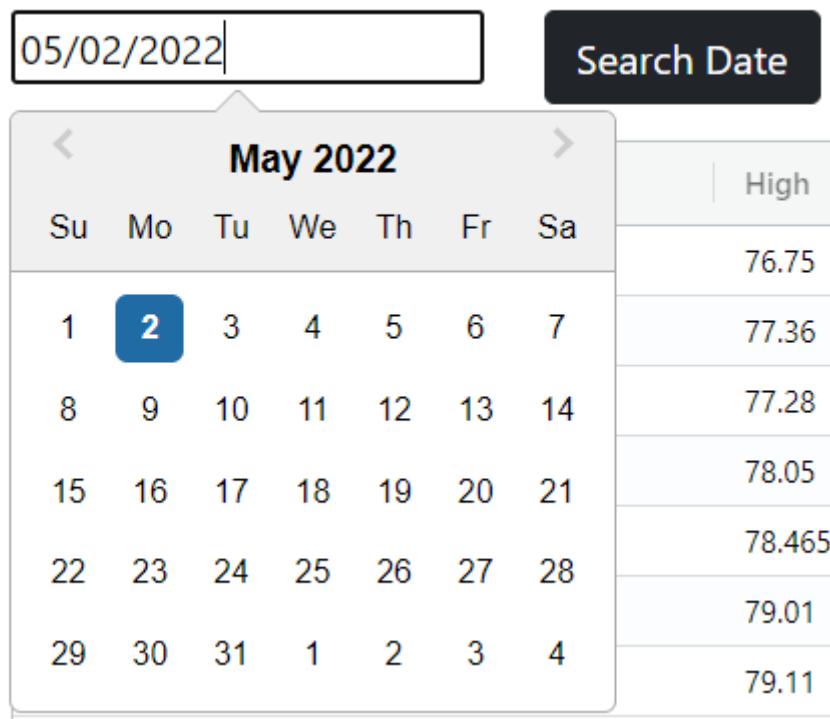


Figure 28 Date picker

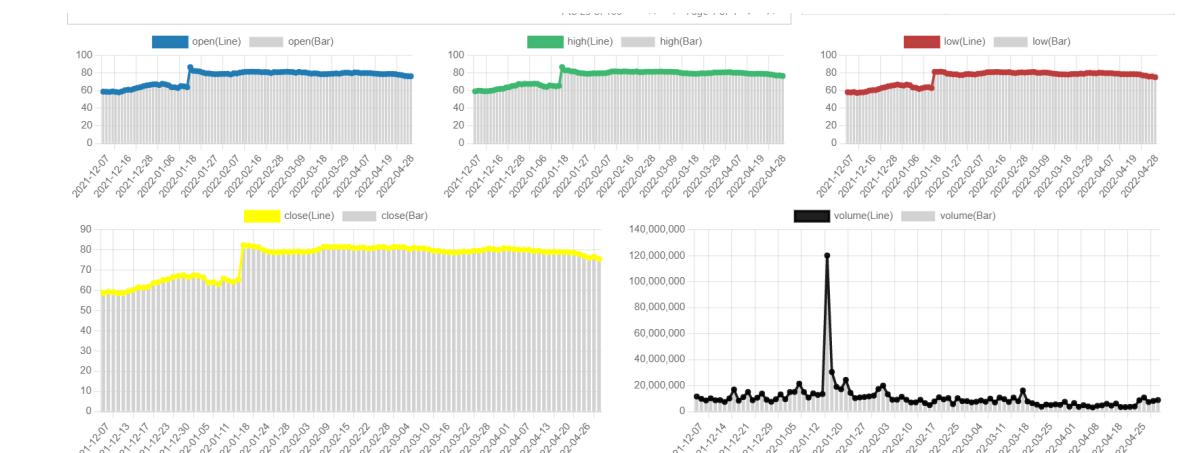


Figure 29 Charts

References

adm (2020). JavaScript Advanced Programming pdf eBook (4th Edition).

<https://developpaper.com/javascript-advanced-programming-4th-edition-pdf-ebook/>

Appendices

Appendix A – self-checking against CRA

Marks	Grade level (in 1- 7 scale) my work belongs to	Marks I think I should get
-------	---	----------------------------

Christopher: N10698612

Michael: N10629297

	(delete the ones not suitable)		
Overall Functionality (30 marks)	7	30	out of 30
Application performance Note: balance between client and server processing (10 marks)	6	9	out of 10
Application Robustness (10 marks)	7	9	out of 10
Application UI Design Note: this is purely based on function and usability. There is no direct assessment of the quality of the graphic design. (10 marks)	7	10	out of 10
Application architecture and Code Quality (10 marks)	7	10	out of 10
Report and Reflections (20 marks)	6	18	out of 20
Video demo (10 marks)	6	7	out of 10
Overall Marks (100)		93	out of 100

Appendix B – Screenshots of test plan results

The screenshot shows a web-based stock market application. At the top, there is a navigation bar with links to Home and Stocks, and a message 'Have a nice day!'. Below the navigation, the title 'Stock Price' is displayed, followed by a sub-header 'Welcome to the Stock Market Portal'. A call-to-action button 'Stocks' is visible. The main area features a large chart showing stock prices, with a specific point highlighted in red. To the right of the chart, there is a summary for Bitcoin / U.S. Dollar, showing a price of 9203.20, a change of 19.74 (0.21%), and two additional numerical values: 9203.32 and 9209.47. At the bottom of the page, there is a 'NAVIGATE' button and the text 'Stock prices API Assessment 2 IFN666'. The browser's address bar at the bottom left shows 'localhost3000/#'.

Christopher: N10698612

Michael: N10629297

Figure 30.1 Home page shows on <http://localhost:3000/>

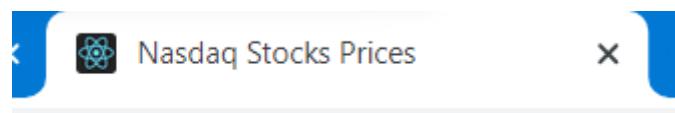


Figure 30.2 Check page title



Figure 30.3 Navibar

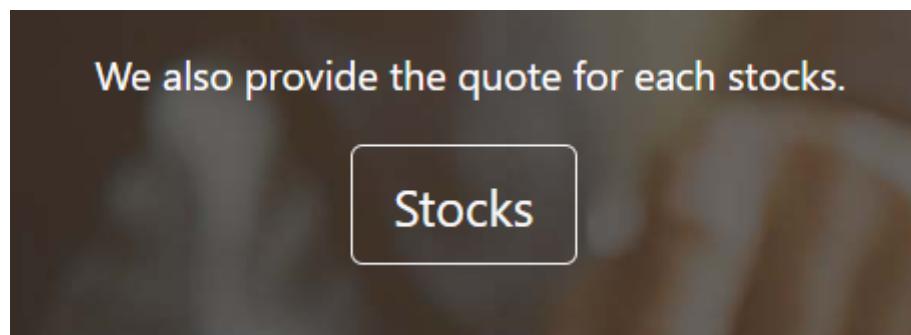
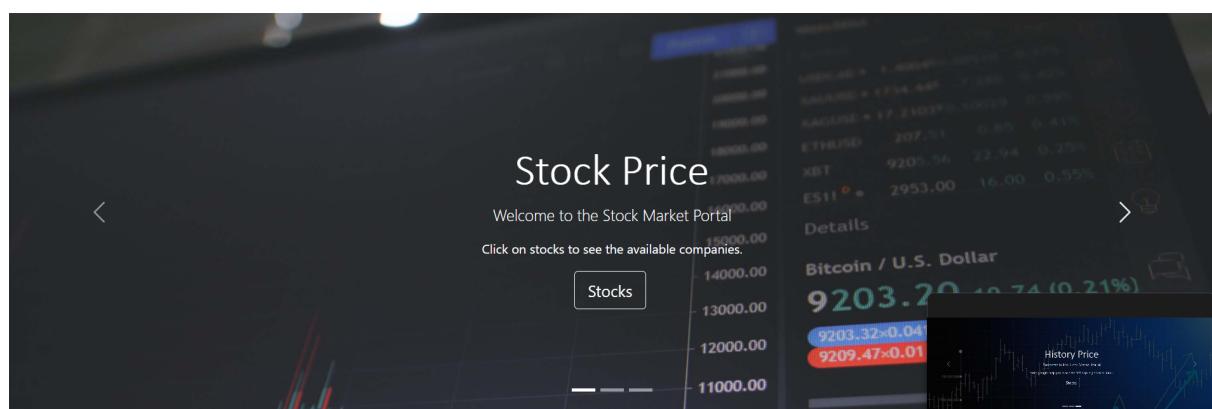
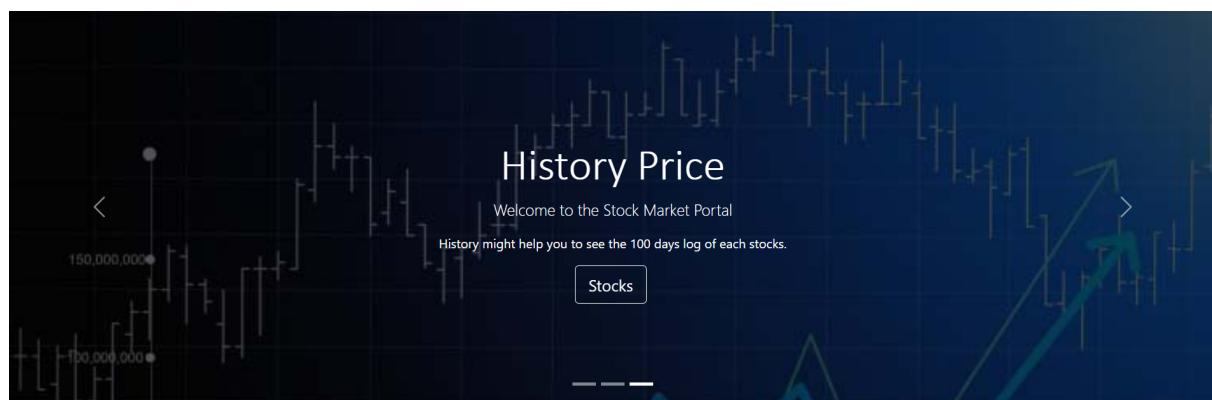


Figure 30.4 Stocks button



Christopher: N10698612

Michael: N10629297

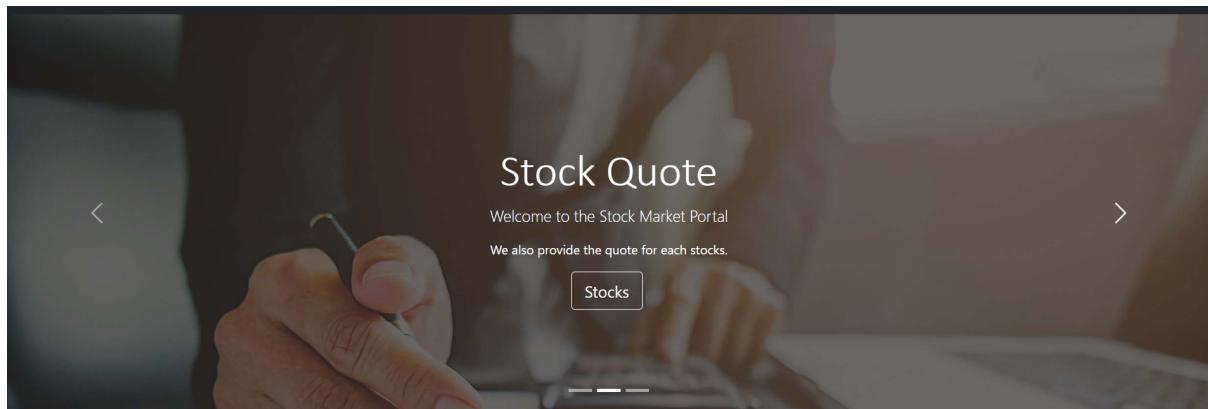


Figure 30.5 Carousel banners

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology
AEP	American Electric Power	Utilities
AMGN	Amgen	Healthcare
ADI	Analog Devices	Technology
ANSS	Ansys	Technology
AAPL	Apple	Technology

Figure 30.6 Stock details shown at <http://localhost:3000/stocks>

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology
AEP	American Electric Power	Utilities
AMGN	Amgen	Healthcare
ADI	Analog Devices	Technology
ANSS	Ansys	Technology
AAPL	Apple	Technology
AMAT	Applied Materials	Technology
TEAM	Atlassian	Technology
ADSK	Autodesk	Technology
BIDU	Baidu	Communication Services
BILB	Biogen	Healthcare

Christopher: N10698612
Michael: N10629297

Figure 30.7 Stocks Table

Stock: ATVI | ▾

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

Figure 30.8 Type and choose into Search symbol to filter by symbol

Stock: All Symbol | ▾

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
LCID	Lucid	Financial Services
PYPL	PayPal	Financial Services

Figure 30.9 Choose a Industry to filter by industry

Stock: ATVI | ▾

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

Figure 30.10 Choose Name and Industry to filter by both

Stock: Symbol Search | ▾

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology

Stock: Symbol Search | ▾

Please click on the symbol or name of stocks for a detailed quote and historical price

Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services
ADBE	Adobe	Technology
ADP	ADP	Industrials
ABNB	Airbnb	Communication Services
ALGN	Align	Healthcare
GOOGL	Alphabet (Class A)	Communication Services
GOOG	Alphabet (Class C)	Communication Services
AMZN	Amazon	Consumer Cyclical
AMD	AMD	Technology

Industry: Industry Search ▾

- All Industries
- Communication Services
- Consumer Cyclical
- Consumer Defensive
- Financial Services
- Healthcare
- Industrials
- Technology
- Utilities

Figure 30.11 Check dropdown menu options

Christopher: N10698612
 Michael: N10629297

Symbol ↑	Name	Industry
AAPL	Apple	Technology
ABNB	Airbnb	Communication Services
ADBE	Adobe	Technology
ADI	Analog Devices	Technology
ADP	ADP	Industrials
ADSK	Autodesk	Technology
AEP	American Electric Power	Utilities
ALGN	Align	Healthcare

Figure 30.12 Table sort and filter

Communication Services
Communication Services
Consumer Defensive
Industrials
Technology

Figure 30.13 Table pagination

Stock: ATVI	Industry: Communication Services	
Please click on the symbol or name of stocks for a detailed quote and historical price		
Symbol	Name	Industry
ATVI	Activision Blizzard	Communication Services

History of ATVI

Date	Open	High	Low	Close	Volume
2022-05-02	76.41	76.75	75.335	75.6	8848013
2022-05-03	76.45	77.36	76.18	76.7	8149261
2022-05-04	76.82	77.28	76.06	76.1	7319417
2022-05-05	77.82	78.05	77.0185	77.06	10784149
2022-05-06	78.21	78.465	77.41	78.05	8661544
2022-05-09	78.85	79.01	78.53	78.61	3893533
2022-05-10	79.03	79.11	78.71	78.9	3623809
2022-05-11	79.12	79.31	78.86	78.91	3418074

Quote of ATVI

Name	Activision Blizzard, Inc.
Price	75.6
DayHigh	76.75
DayLow	75.335
Volume	8661544
PreviousClose	75.6

Figure 30.14 Table cell click

Christopher: N10698612
Michael: N10629297

Stocks

98 Stocks published

Figure 30.15 Number of stocks

A screenshot of a web browser showing the 'Stocks' application. The title bar says 'localhost:3000/history/ATVI'. The main content area displays a dark-themed interface with a large '98 Stocks published' button. Below it, the heading 'History of ATVI' is centered. On the left, there's a date input field set to '05/02/2022' and a 'Search Date' button. To the right, there's a table titled 'Quote of ATVI' with details like Name (Activision Blizzard, Inc.), Price (75.6), and Volume (8847652). Below the quote are two candlestick charts showing price movement from December 2021 to April 2022.

History of ATVI

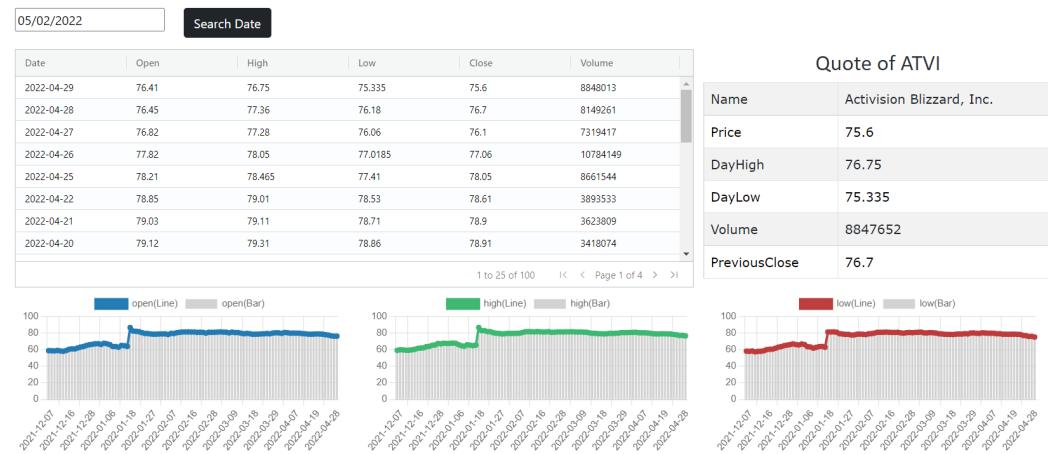


Figure 30.16 Detailed stock details shown at [http://localhost:3000/history/\\${symbol}](http://localhost:3000/history/${symbol})

Price history table for ATVI (Activision Blizzard, Inc.) from December 2021 to April 2022. The table shows daily price and volume data:

Date	Open	High	Low	Close	Volume
2022-04-29	76.41	76.75	75.335	75.6	8848013
2022-04-28	76.45	77.36	76.18	76.7	8149261
2022-04-27	76.82	77.28	76.06	76.1	7319417
2022-04-26	77.82	78.05	77.0185	77.06	10784149
2022-04-25	78.21	78.465	77.41	78.05	8661544
2022-04-22	78.85	79.01	78.53	78.61	3893533
2022-04-21	79.03	79.11	78.71	78.9	3623809
2022-04-20	79.12	79.31	78.86	78.91	3418074

Figure 30.17 Price history table

Christopher: N10698612

Michael: N10629297

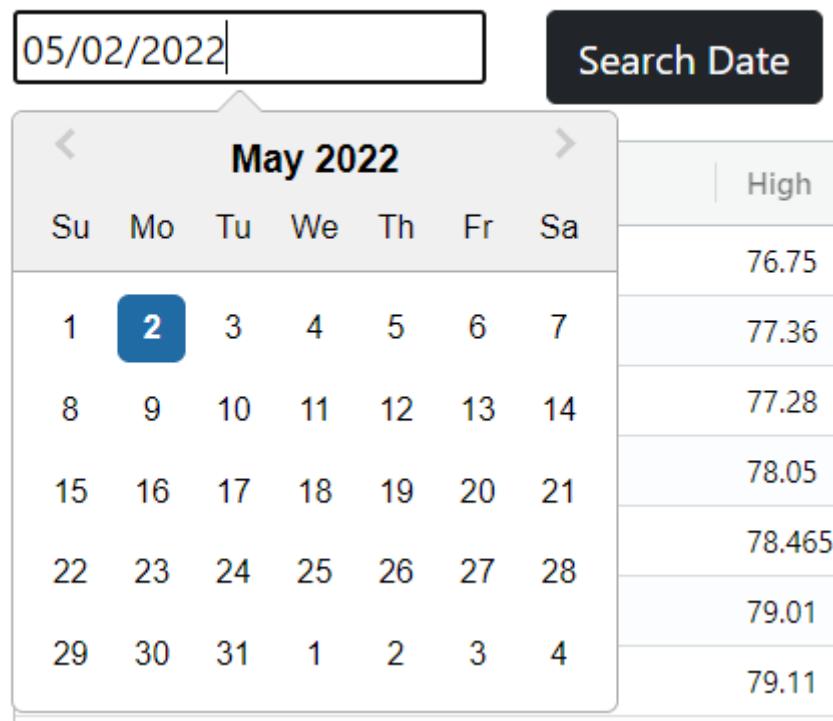


Figure 30.18 Date picker

Date ↑	Open	High	Low	Close	Volume
2021-12-07	58.919998	59.27	58.279999	58.77	11553500
2021-12-08	58.779999	60.009998	58.029999	59.27	9785500
2021-12-09	58.599998	59.810001	58.52	59.07	8520500
2021-12-10	59.16	59.41	57.470001	58.599998	10161000
2021-12-13	58.599998	59.450001	58.02	58.700001	8652700
2021-12-14	58.16	59.880001	58.150002	59.52	8793500
2021-12-15	59.110001	60.509998	58.830002	60.259998	7387100
2021-12-16	60.549999	61.630001	60.18	61.490002	10074500

Date ↴ ↑	Open	High	Low	Close	Volume
2022-01-11	Contains 11	65.989998	62.93	65.849998	10728600
2022-02-11	AND OR	81.830002	81.080002	81.5	6971000
2022-03-11	Contains Filter...	81.199997	80.18	80.309998	10714300
2022-04-11		80.25	79.419998	79.480003	4399400

Figure 30.19 Table sort and filter

Christopher: N10698612

Michael: N10629297

61.490002	10074500
▼	
1 to 25 of 100	< < Page 1 of 4 > >

Figure 30.20 Table pagination

Quote of ATVI

Name	Activision Blizzard, Inc.
Price	75.6
DayHigh	76.75
DayLow	75.335
Volume	8847652
PreviousClose	76.7

Figure 30.21 Quote table

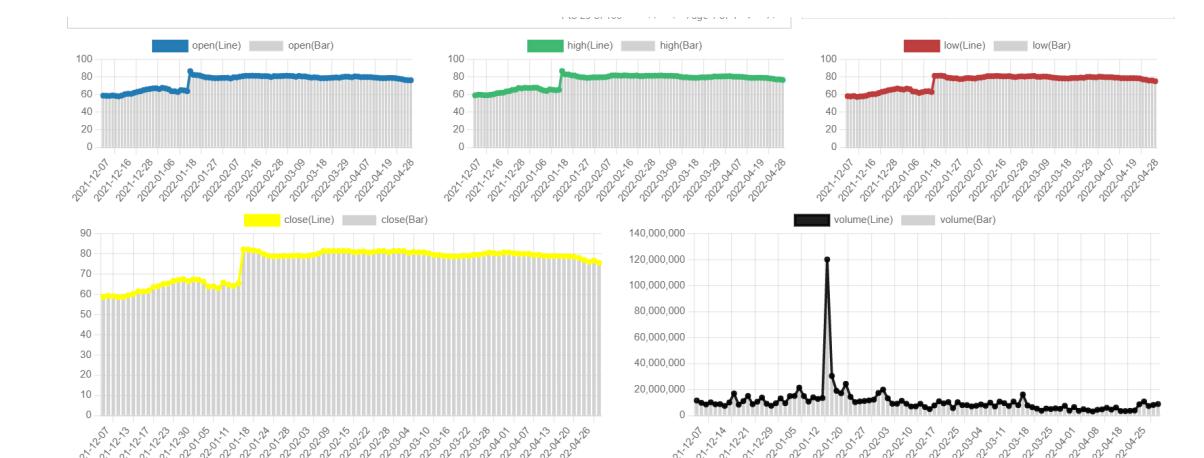


Figure 30.22 Charts

Christopher: N10698612

Michael: N10629297



Figure 30.23 Chart updates



Figure 30.24 Mixed charts

Christopher: N10698612

Michael: N10629297

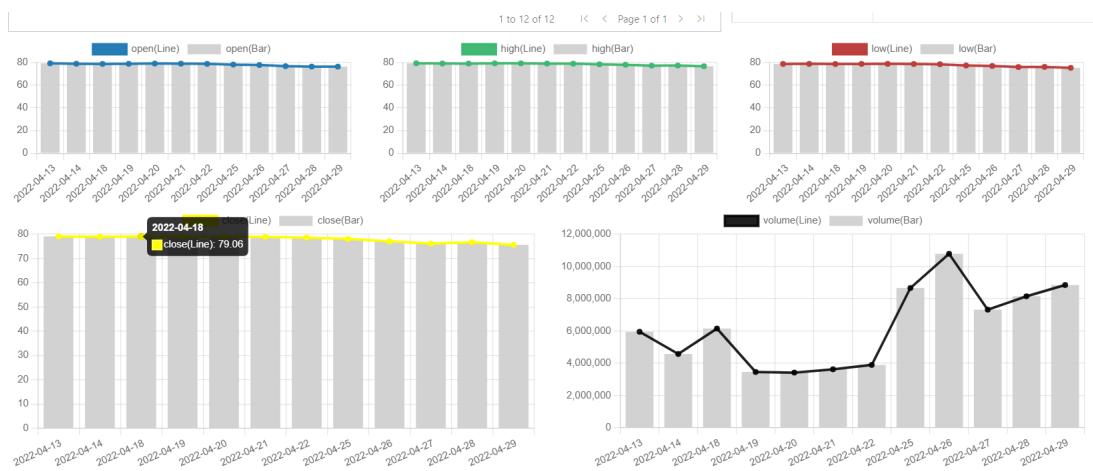
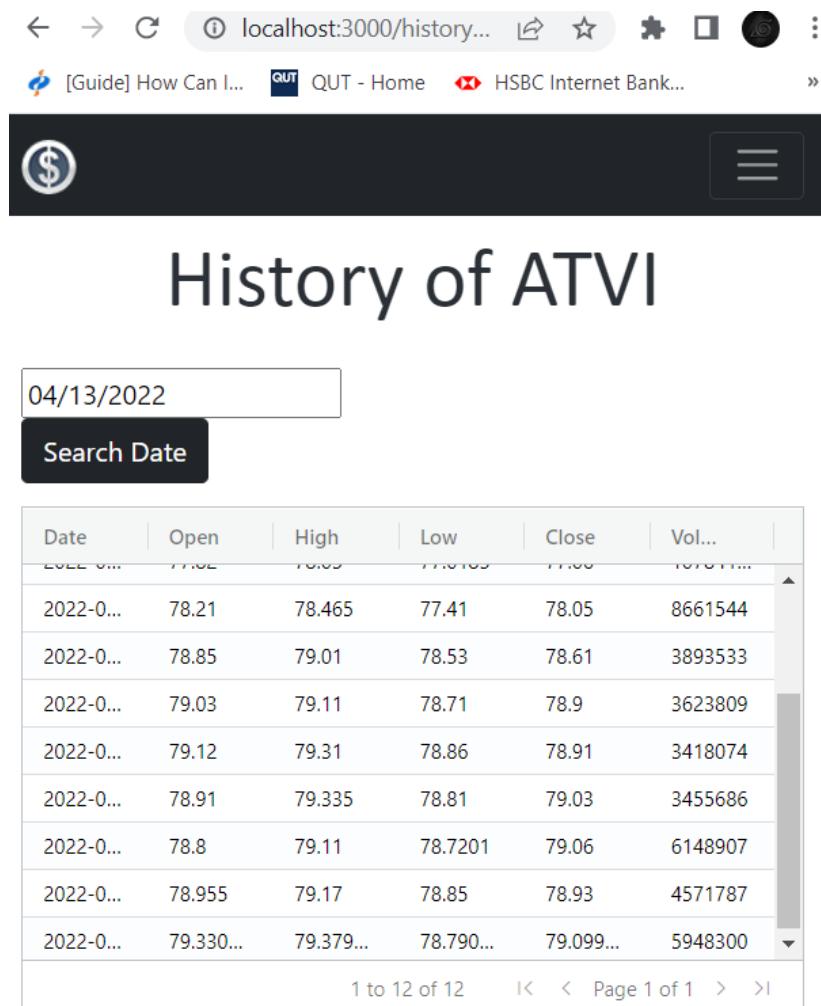


Figure 30.25 Charts details



Quote of ATVI

Name	Activision Blizzard, Inc.
Price	75.6
DayHigh	76.75

Christopher: N10698612

Michael: N10629297

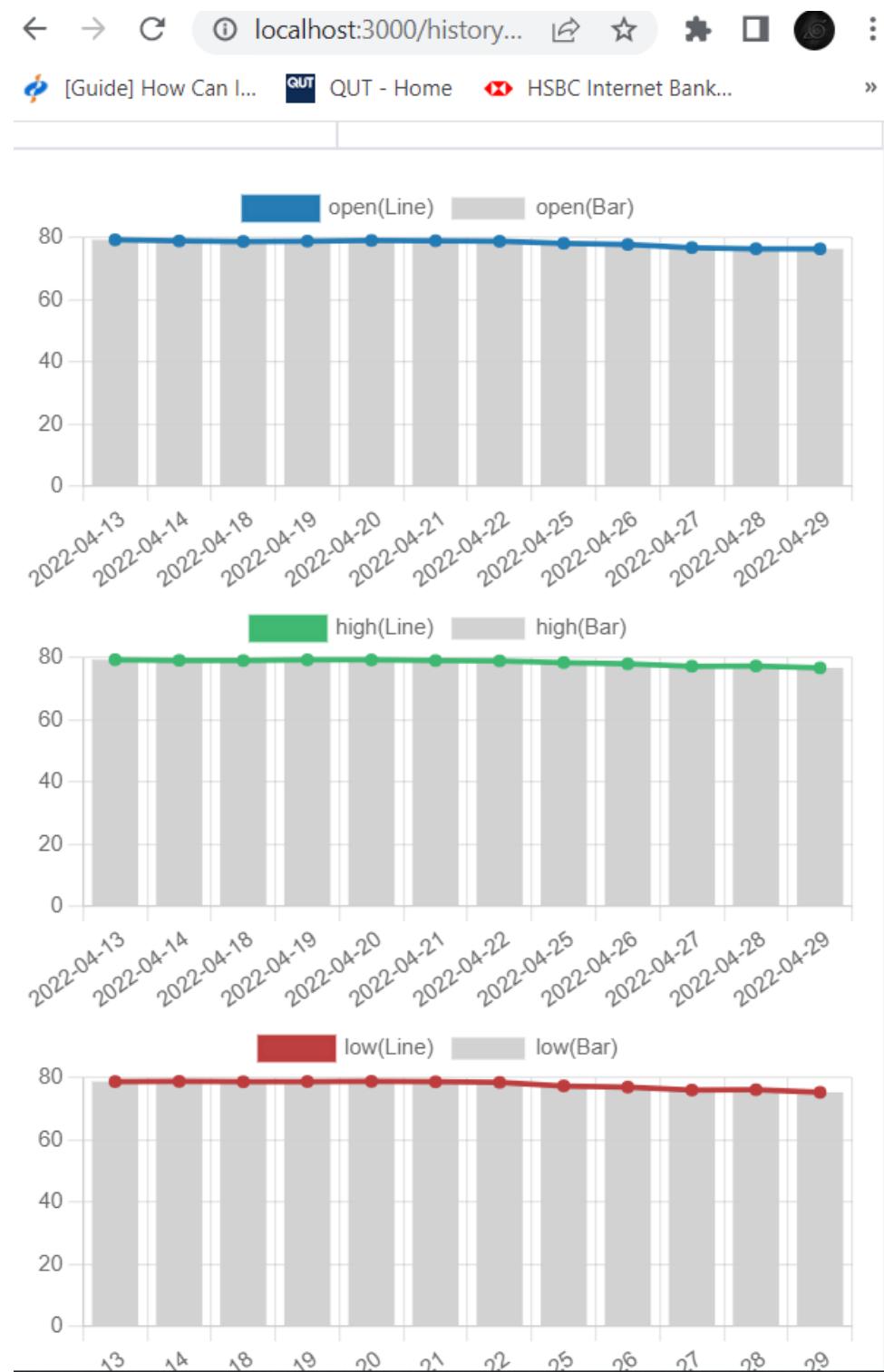


Figure 30.26 Responsiveness