Requirements Analysis Document

Stockalytics

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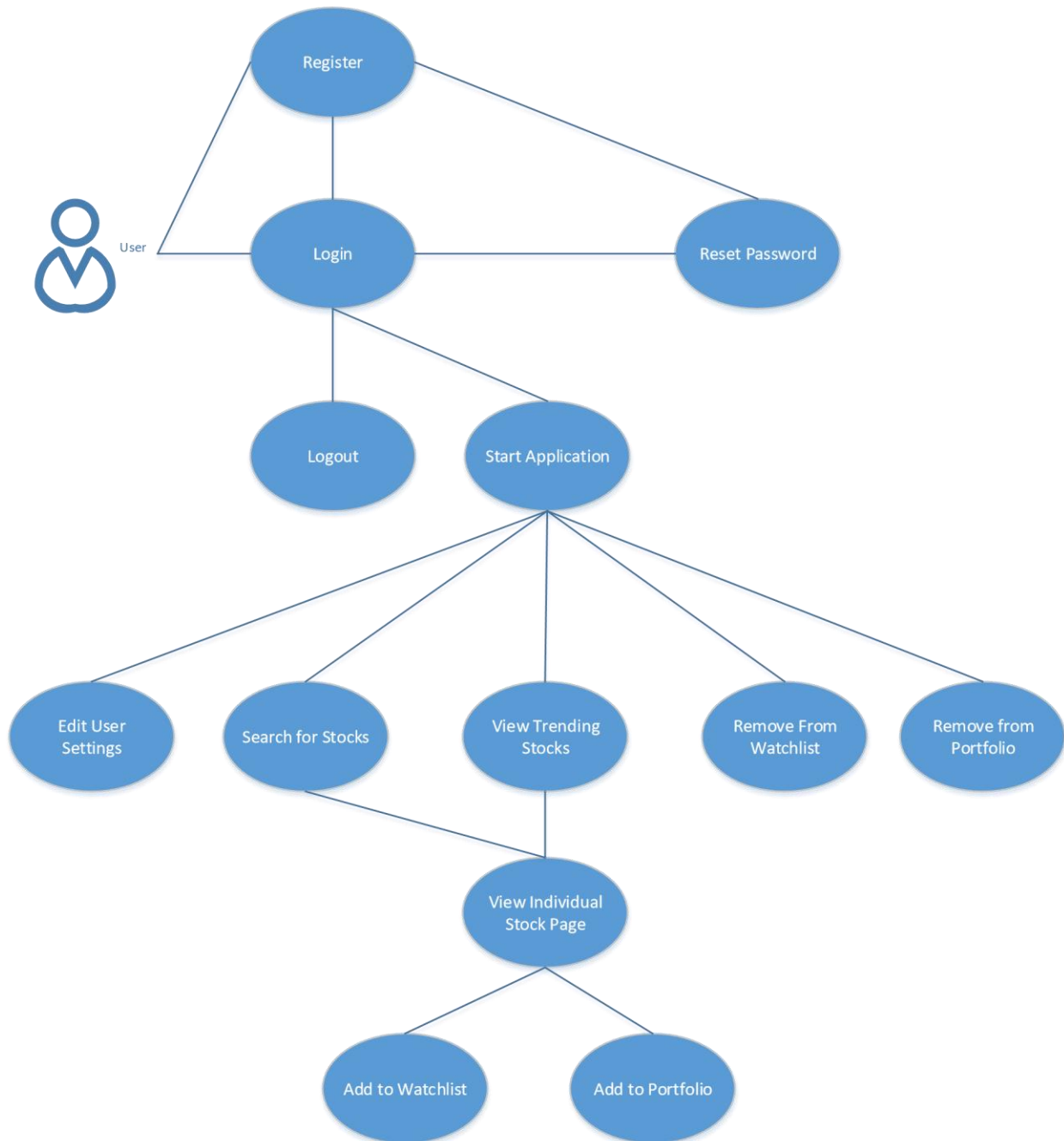
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Functional Requirements

1. User can create a secure account with a user name and password.
2. User can Log in and Log out; user can choose to stay logged in through the easy to find logout button at the top of the webpage.
3. User can update their profile settings which include password, phone number.
4. User can add and remove a stock to their watchlist or to their portfolio.
5. User can display calculate profit from bar charts and graphs about the specific stock.
6. User can display stock information for a specific stock.
7. User can search for a specific stock using the company stock symbol.

Non-Functional Requirements
1. The application pulls the User's watch list, portfolio, and settings from the Firebase database.
2. The application uses the IEX Trading API to pull stock information.
3. The application can calculate the profit of a given stock from the user's stock purchase date, purchase price, and quantity.
4. The application creates user information when registering in Firebase database including their password, email address, phone number and currency code.
5. Calculate the exchange rate based off the users chosen currency.

Stockalytics

Use case: Register

Primary Actor: User

Goal in Context: Allows the user to register for an account.

Preconditions: Internet connection needed.

Trigger: The user creates an account by pressing the create account button on the login page.

Scenario:

1. User sees a form that includes:

      a. first name

      b. last name

      c. email

      d. phone number

      e. password

      f. confirmation password fields.

1. User enters data into all the specified fields with appropriate credentials.

2. User presses the enter button or clicks on submit button.

3. The system validates the email address and confirms that the passwords are the same.

4. The system validates the email has not been registered before by checking each firebase email address against the users specified email.

5. The system creates a new account on the firebase database with associated password, phone number and email.

6. The system displays Message 22 and redirects the user to the View Portfolio Summary screen (See View Portfolio Summary Use Case).

Exceptions:

1. User enters wrong confirmation password: Message 4 is displayed underneath the confirmation password field in red.

2. User enters an email that already exists: Message 5 is displayed underneath the email field in red stating 'email address already exists'.

3. Please enter a valid email address: Message 3 is displayed underneath the email field stating, 'please enter a valid email address'.

4. Please enter a valid password: Message 2 is displayed underneath the email field stating, 'please enter a valid password'.

5. Please enter a valid phone number: Message 24 is displayed underneath the phone number field stating, 'please enter a valid phone number'.

6. Please enter a valid password that includes 8 characters, 1 Upper, and 1 Lower: Message 2 is displayed underneath the password field stating 'Please enter a valid password that includes 8 characters, 1 Upper, and 1 Lower'

7. Pleaser enter a valid first and last name: Message 25 is displayed

Priority: High

When Available: Week 1

Frequency of Use: Many times, per day

Open Issues: No open issues currently.

Use case: Login

Primary Actor: User

Goal in Context: For the user to be able to log into the app at any time and be able to see their profile.

Preconditions: Internet connection needed.

Trigger: The user decides to log into his account, by clicking on the sign in button on the top right-hand screen.

Scenario:

1. User observes the login page which includes: email address and password fields.

2. User enters username and password correctly in the specified fields.

3. Application verifies credentials by sending that information to the firebase database which compares with all other credentials.

4. Message 23 is displayed on the screen and the user is transferred to the My Portfolio Summary screen (See My Portfolio Summary Use Case).

Exceptions:

1. Please enter valid credentials: Message 4 is displayed if user enters the wrong username or password into the Stockalytics and an error is displayed asking user to re-enter username or password. If the user gets the username or password wrong five times, they are asked to enter email to reset the password.

Priority: High

When Available: Week 2

Frequency of Use: Many times, per day

Open Issues: No open issues currently.

Use case: Log out

Primary Actor: User

Goal in Context: Allows user to log out and takes them back to the login use case

Preconditions: Internet connection needed.

Trigger: User clicks the logout button to exit the application is in the Webpage.

Scenario:

1. The user observes logout button on the Webpage.

2. When the user clicks on the logout button message 18 will be displayed: Ready to leave? Select "Logout" below if you are ready to end your current session.

3. The application will display a Confirmation box to the user. Message 18 will be displayed.

4. The user will select yes.

5. The user is redirected to login page.

Exceptions:

1. If the user selects 'no', they will be returned to the Start Application use case.

Priority: High

When Available: Week 2

Frequency of Use: Every time the User wants to log out.

Open Issues: No open issues currently.

Use case: Reset Password

Primary Actor: User

Goal in Context: Allows the user to reset the password by providing an email address.

Preconditions: Internet connection needed.

Trigger: User clicks on forgot password button (see login use case).

Scenario:

1. "Forgot your password? Enter your email address and we will send you instructions on how to reset your password" is displayed.

    a.   User enters email address into the e-mail text field.

    b.   User selects 'Reset Password' button.

    c.   The Password Server retrieves that email address from the database and sends the user an email with a reset password link.

    d.   User reads the email and clicks the link contained in the email.

    e.   User is then sent to the Reset Password page and observes the change password fields.

    f.   User enters desired password into the new password and confirm new password fields

    g.   User presses 'save' button.

    h.   Both the User's new password input and confirm new password input are then checked for having matched credentials.

    i.   Passwords are updated into the Database.

Exceptions:

1. User's input for the new password and confirm new password field does not match:

Message 4 is displayed to the user underneath the password field.

2. User does not enter a valid email address: Message 1 is displayed to the user underneath the email field.

3. User enters a password that does not meet all the requirements: Message 3 is displayed to the user underneath the password field.

Priority: High

When Available: Week 2

Frequency of Use: not regularly

Open Issues: No open issues currently.

Use case: View Portfolio Summary
Primary Actor: User

Goal in Context: The user will be able to see their net worth, portfolio growth, and stock

diversity, along with the price of individual stocks from the user's portfolio list and watchlist.

Preconditions: The application is connected to the internet and the IEX Trading server.

Trigger: The Start Application is launched.

Scenario:

1. The user will observe four card that consists of stock name, and price in the first four

   items of your portfolio. The user observes net worth chart, portfolio growth chart, stock

   diversity chart, and their stocks owned list. The stocks owned list is a list of stocks where

   each stock symbol, name, price, and quantity are listed. Each stock in the portfolio is

   clickable and will transfer to the user to the Individual Stock. (See View Individual

   Stock). Each stock also has a button on the right to remove the stock from the list.

2. The user will see the "my portfolio" page that displays stock, date purchased, purchase

   price, current price, quantity, purchase equity, current equity, profit, after tax profit,

   current percent change, delete. The user's portfolio data is pulled from the Firebase

   database and stock information is pulled from the Iex Trading server.

3. The user will observe current portfolio equity line graph. The user's net worth is

   calculated and displayed in a bar chart, portfolio growth in a bar chart, and stock diversity

   in a pie chart.

4. The user will observe percentage change bar chart as well as the total purchase equity,

   total current equity, profit, and after-tax profit. Below the portfolio is the watchlist which

   houses a list of stocks that is in the users watchlist.

5. The user observes portfolio diversity pie chart.

6. The user will observe my watchlist which includes the stock, current price, 3-month percent, 6-month percent, 1-year percent, and delete.

Exceptions:

1. The user has no stocks in their portfolio list: Message 13 is displayed in gray text under the portfolio list.

2. The user has no stocks in their watchlist: Message 12 is displayed in gray text under the watchlist.

3. The use has no items in their portfolio: message 26 is displayed.

4. The user does not have four items in their portfolio: message 26 is displayed.

5. The user has no items in their portfolio: the portfolio equity line graph will not be displayed.

6. The user has no items in their portfolio: the line graph, bar chart, and the pie chart will not be displayed.

Priority: High

When Available: Week 5

Frequency of Use: Common usage

Open Issues: No open Issues currently.

Use case: Edit User Settings

Primary Actor: User

Goal in Context: Allows the user to set their currency code, upper and lower bounds of SMS alerts, and phone number.

Preconditions: User is connected to internet

Trigger: User clicks on settings button to view and change settings which is located in the top right next to the search bar located within the Webpage.

Scenario 1:

1. User observes all the different settings:

    a. Email Address

    b. New Password

    c. Confirm New Password

2. User clicks on the text field in which setting they want to change. 3. User changes the settings to the desired credentials

    a. User changes Email to desired credentials

    b. User changes current password to desired credentials

4. User clicks on save button in the window to save the settings.

5. The application will send the updated information to the Firebase database to be overwritten.

6. User returned with the message "updated in database", then returned to main/home screen with changes applied

Scenario 2:

      1.   User observes all the different settings:

            a.   First Name

            b.   Last Name

            c.   Phone Number

            d.   Currency Dropdown Check Box

      2.   User clicks on the text field in which setting they want to change.

      3.   User changes the settings to the desired credentials

            a.   User changes first name to desired credentials

            b.   User changes last name to desired credentials

            c.   User changes current phone number to desired credentials

            d.   User edits the Currency Dropdown to on/off

      4.   User clicks on save button in the window to save the settings.

      5.   The application will send the updated information to the Firebase database to be overwritten.

      6.   User returned with the message "updated in database", then returned to main/home screen with changes applied

Exceptions:

1.   User does not want to change their settings.

2.   User clicks on cancel button that redirects them back to the previous page

Priority: High

When Available: Week 4

Frequency of Use: Probably infrequent

Open Issues: None currently.

Use Case: Search for Stock
Primary Actor: User

Goal in Context: The goal of this use case is to search for stocks in the search bar. Once the user

has searched for a stock, the user will be transferred to the start application use case to view

information about that given stock.

Precondition: The application is connected to the internet and the IEX Trading server.

Trigger: User hovers the cursor over the search bar in the top right-hand corner of the page

Scenario:

1. The user observes a text field that allows the user to input text within the Webpage.

2. User proceeds to enter the name of the desired stock symbol in the search bar.

3. User clicks the search button.

4. The system connects to the IEX server and displays the information on the specified

    stock (See View Individual Stock use case).

Exceptions:

1. String Value entered in the search bar is not recognized as an actual stock and Message 7

    is displayed in red font in the Search Bar.

Priority: High.

When Available: Week 5

Frequency of use: Many times

Open issues: No open issues currently.

Use case: View Trending Stocks

Primary Actor: User

Goal in Context: The User will be able to view information about trending stocks that will be

  pulled from numerous sites like CNN Money, Motley Fool, and Yahoo Money.

Preconditions: The User will have to be connected to the firebase database and be connected to

  the internet.

Trigger: The User clicks on the Trending stocks page from the Webpage.

Scenario:

1. The user observes the trending stocks:
    a. In the gainers table, the user will observe Symbol, Price, High, Low, %
       Change.
    b. In the losers table, the user will observe Symbol, Price, High, Low, %
       Change.

Exceptions:

1. The application cannot grab the stock information due to the Iex Trading API is down:

   See Message 20.

2. The application cannot scrape stock symbol from CNN Money because the web server is

   down: See Message 21

3. The application cannot scrape stock symbol from Motley Fool because the web server is

   down: See Message 22.

4. The application cannot scrape stock symbol from Yahoo Money because the web server

   is down: See Message 23.

Priority: Medium

When Available: Week 11

Frequency of Use: Many times, per day

Open Issues: No open issues currently.

Use case: Remove from Watchlist

Primary Actor: User

Goal in Context: The goal of this use case is to remove a stock from the User's watchlist.

Preconditions: The User will have to be connected to the firebase database and be connected to the internet.

Trigger: The User is currently in the watchlist section of the View Portfolio Summary Page.

Scenario:

1. User observes the portfolio summary page with the option to remove the currently viewed stock from the watchlist.

2. The user clicks the delete button of desired stock being viewed.

3. The stock is removed by passing a query to the Firebase database.

Priority: Medium

When Available: Week 9

Frequency of Use: low usage

Open Issues: No open issues currently.

Use Case: Remove from Portfolio

Primary Actor: User

Goal Context: The goal of this use case is to remove a stock from their portfolio list. There will be a button on the portfolio summary page to remove the stock.

Preconditions: The User will have to be connected to the firebase database and be connected to the internet.

Trigger: User selects the remove from Portfolio List button from the View Portfolio Summary.

Scenario:

1. User observes the option to remove the stock from the portfolio list.

2. The user clicks the delete button.

3. The stock is removed by passing a query to the Firebase database.

Priority: Medium

When available: Week 8

Frequency of use: Depends on the customer and if they want to remove stocks frequently.

Assumed will be used very frequently

Open Issues: No open Issues currently.

Use case: View Individual Stock Page

Primary Actor: User

Goal in Context: To create a page that holds information about one given stock that includes information like view stock growth over months, view current stock price, current stock symbol, upcoming news, dividends, and peers.

Preconditions: The User will have to be connected to the internet. The User will need access to the IEX trading server.

Trigger: The User either searches for a given stock or finds one of interest from the portfolio summary page or the trending stock page.

Scenario:

1.   The system connects to the IEX server and retrieves the following information:

   a.   Stock growth

   b.   Current stock price

   c.   Current stock symbol

   d.   Current News

   e.   Summary

   f.   Volume

   g.   Dividends

   h.   Earnings per share

   i.   Previous Close

   j.   P/E Ratio

   k.   Peers

2.   The user observes the page that will display the view stock growth in the middle of the

pane. The stock symbol will rest above the stock growth chart but to the left of the

current stock price. Company information will reside to the left of the stock growth chart

and run parallel to pane. The News about that given stock will sit below the company and

will display the last three news items. The summary will include the items listed above

with their respective numbers and will be directly under the chart and to the right of the

news section. The last section will be the peers, which display to the right of the

summary section and will list different companies that share the same field.

Exceptions:

   1. The IEX trading API is down: See Message 20.

Priority: Medium

When Available: Week 12

Frequency of Use: Many times, per day

Open Issues: No open issues currently.

Use case: Add to Watchlist

Primary Actor: User

Goal Context: The goal of this use case is to add a stock to the User's watchlist.

Preconditions: The application is connected to the internet, and the IEX Trading server and the Firebase database are not down.

Trigger: The User clicks a button on the View Individual Stock use case

Scenario:

1. The user observes the option to select the add to watchlist button that is synced through the individual stock page and their watchlist within the View Portfolio Summary.

2. The user selects the 'add to watchlist' button.

3. The application will send a query to the Firebase database.

4. The application will display message 14 to the user.

Exceptions:

1. There are no exceptions currently.

Priority: Medium

When Available: Week 10

Frequency of Use: Low usage

Open Issues: No open issues currently.

Use Case: Add to Portfolio

Primary Actor: User

Goal Context: The Add to Portfolio List feature will allow the user to be able to add individual stocks to their portfolio list with relational data regarding the date of purchase of stock, purchase price of stock, and the number of shares purchased.

Preconditions: The User will have to be connected to the firebase database and be connected to the internet.

Trigger: User selects the Add to Portfolio List button that will be viewed with an Individual stock page which will add that stock to their owned list.

Scenario

1. The user observes the option to select the 'Add to portfolio list' button that is synced through the individual stock page and their portfolio list.

2. The user selects the add button

3. The user observes the dialog with the following options:

    1. Purchase price

    2. Purchase date

    3. Quantity of stock

2. The application will send a query to the Firebase database.

3. The application will display message 15 to the user.

Exceptions:
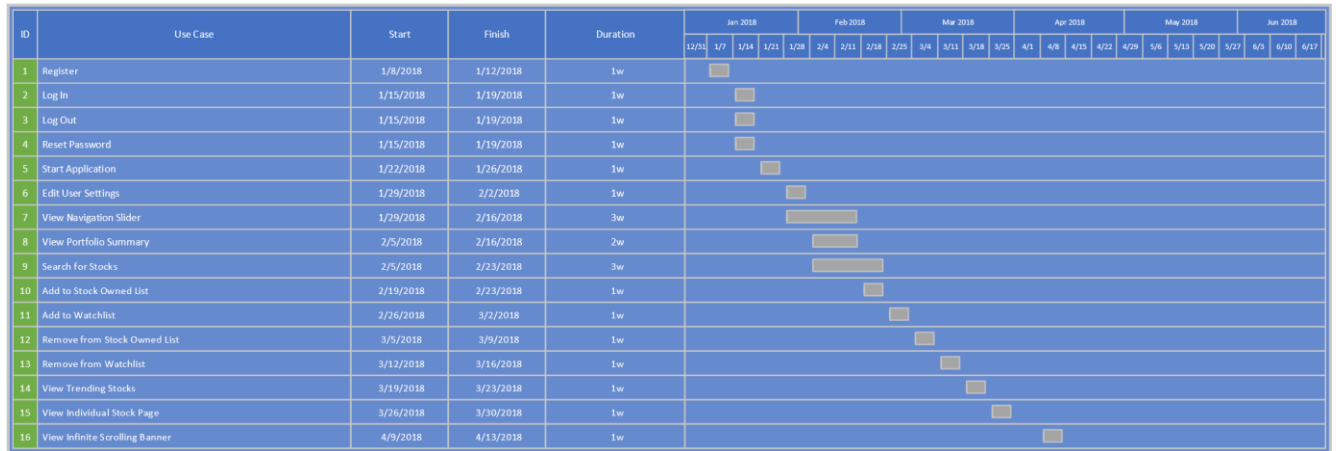
1. There are no exceptions currently

Priority: Medium

When available: Week 7

Frequency of use: Depends on the customer and if they want to add stocks frequently. Assumed will be used very frequently

Open Issues: No open issues currently.

Stock Application Time Line with Roles

ID	Use Case	Start	Finish	Duration	Jan 2018					Feb 2018				Mar 2018				Apr 2018				May 2018				Jun 2018		
					12/31	1/7	1/14	1/21	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8	4/15	4/22	4/29	5/6	5/13	5/20	5/27	6/3	6/10	6/17
1	Register	1/8/2018	1/12/2018	1w		▢																							
2	Log In	1/15/2018	1/19/2018	1w			▢																						
3	Log Out	1/15/2018	1/19/2018	1w			▢																						
4	Reset Password	1/15/2018	1/19/2018	1w			▢																						
5	Start Application	1/22/2018	1/26/2018	1w				▢																					
6	Edit User Settings	1/29/2018	2/2/2018	1w					▢																				
7	View Navigation Slider	1/29/2018	2/16/2018	3w					▭																				
8	View Portfolio Summary	2/5/2018	2/16/2018	2w							▭																		
9	Search for Stocks	2/5/2018	2/23/2018	3w							▭																		
10	Add to Stock Owned List	2/19/2018	2/23/2018	1w									▢																
11	Add to Watchlist	2/26/2018	3/2/2018	1w										▢															
12	Remove from Stock Owned List	3/5/2018	3/9/2018	1w											▢														
13	Remove from Watchlist	3/12/2018	3/16/2018	1w												▢													
14	View Trending Stocks	3/19/2018	3/23/2018	1w													▢												
15	View Individual Stock Page	3/26/2018	3/30/2018	1w														▢											
16	View Infinite Scrolling Banner	4/9/2018	4/13/2018	1w																▢									

Messages to the User

1. Successfully logged in. Transferring to homepage.
2. Password does not meet all requirements! Please enter a valid password that is 8 characters long, with at least 1 uppercase and 1 lowercase character.
3. Please enter a valid email address.
4. Please enter valid credentials.
5. Please enter a valid email address. Email already exists!
6. Stock in user's Watchlist has Increased.
7. Stock in user's Watchlist has decreased.
8. Stock in user's stock owned list has Increased.
9. Stock in user's stock owned list has decreased.
10. Watchlist is currently empty.
11. Stock Owned List is currently empty.
12. Added stock to the watchlist.
13. Added stock to the Stock Owned List.
14. Removed stock from the watchlist.
15. Removed stock from the Stock Owned List.
16. Are you sure you want to logout? Yes or No.
17. Failed to load trending stocks.
18. Ready to leave?
19. CNN Money Web Server is down.
20. Motley Fool's Web Server is down.
21. Yahoo Money Web Server is down.
22. Successful Register. Transferring to homepage…
23. Successful login. Transferring to homepage…
24. Please enter a valid phone number
25. Please enter a valid name
26. Add items to your portfolio

Glossary:

1. **Dividend rate**: a sum of money regularly paid (typically quarterly) by a company to its shareholders out of its profits (or reserves).
2. **Stock symbol**: unique series of letters assigned to security for trading purposes.
3. **Peers**: a group of individuals or entities who share similar characteristics and interests.
4. **IEX trading server**: is the API we are using to pull information for the stock information.
5. **Stock Diversity**: The differences in a stock page compared to other stocks
6. **Net Worth of portfolio**: Book value or shareholders' equity 7. **Pane**: is the page in which the Webpage.
8. **Firebase Database**: Defines who has access to the data and how they can access it
9. **User**: A shareholder
10. **Stock Portfolio**: a group of financial assets such as stocks
11. **Stock Watchlist**: Stocks that are being added to a list, so they can be tracked for the user's interest.
12. **View Calculated Profit**: Being able to see the profit of each stock on your profile if the user were to sell at the point in time.
13. **View stock growth**: Showing the growth in your stock over time.
14. **Portfolio Summary**: is the main menu of the stock app so that you can see any stocks at the same time
15. **Week 52 high**: Highest price of stock within the last year
16. **Week 52 low**: Lowest price of stock within the last year
17. **EPS**: **Earnings per share**: proportion of company's' profit allocated to each outstanding share of common stock
18. **Gross Profit**: the profit a company makes after deducting costs associated with making and selling its products
19. **Debt**: money that is owed by one party
20. **6 Month Percent**: stock price percentage based on the company's performance based on the last 6 months of operating
21. **1 Year Percent**: stock price percentage based on the company's performance based on the last year of operating
22. **Year to Date**: stock price since January 1ˢᵗ of the respective year
23. **Gainers**: a stock market list of the top stocks within the past day
24. **Losers**: a stock market list of the worst performing stocks within the past day
25. **Total Purchased Equity**: total amount of money purchased within the entire portfolio
26. **Total Current Equity**: total amount of money that the entire portfolio is worth at current market value
27. **After Tax Profit**: profit after taxes (15% after 1 year, 30% before 1 year)
28. **Current Price**: current price of stock based on current market
29. **3 Month Percent**: stock price percentage based on the company's performance based on the last 3 months of operating
30. **Date Purchased**: purchase date of stock

31. **Purchase Price**: price of stock purchased
32. **Quantity**: amount of stock purchased

33. **Current Percent Change**: current percentage of growth or decline of stock of current equity since purchase price