

Requirements Analysis Document

STOCK APPLICATION

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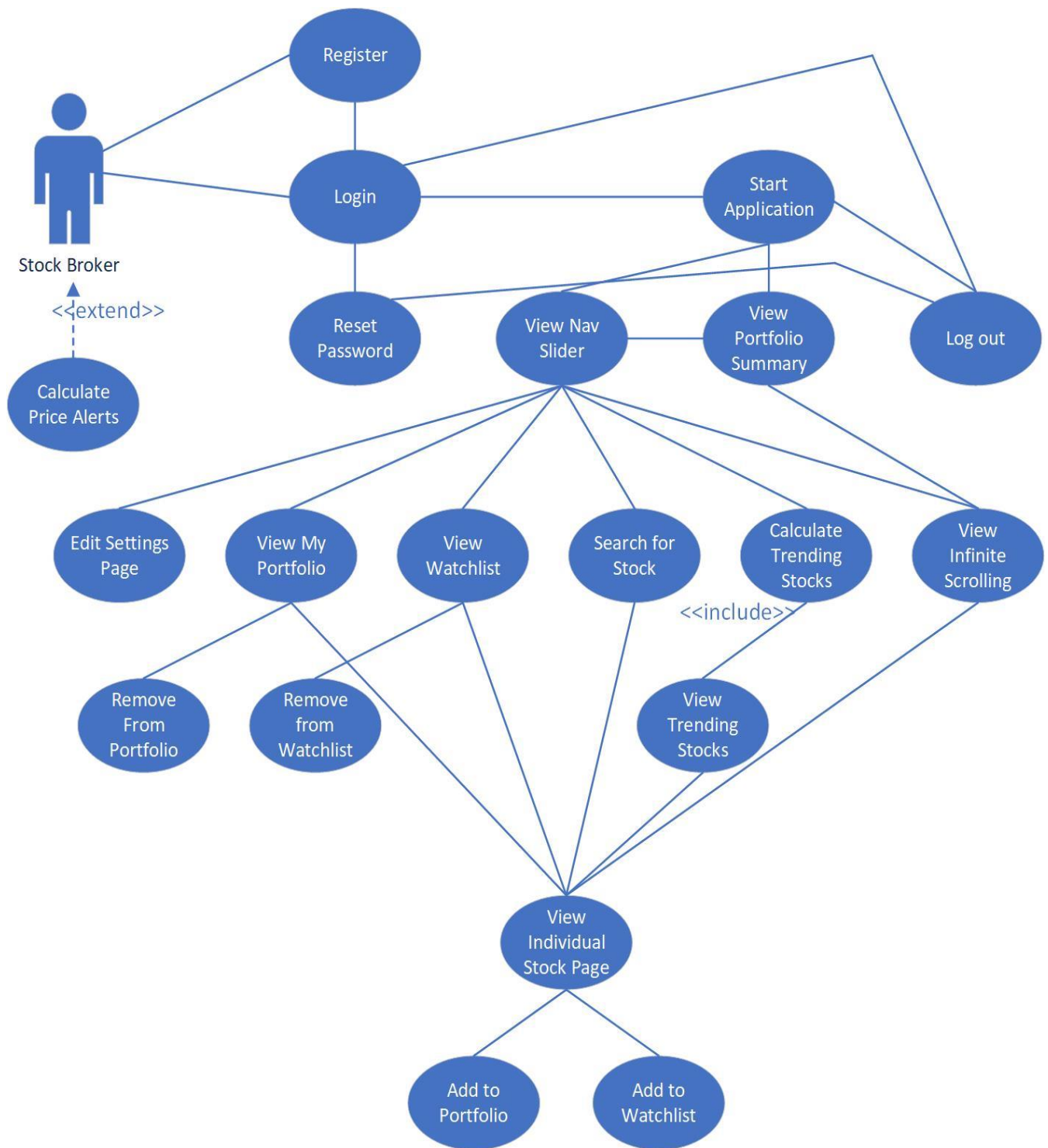
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Functional Requirements

1. Actor can create an account
2. Actor can Log in
3. Actor can Log out
4. Actor can reset their password
5. Actor can add a stock to their watch list
6. Actor can remove a stock from their watch list
7. Actor can add a stock to their portfolio
8. Actor can remove a stock from their portfolio
9. Actor can enter their stock symbol in the Search for stocks use case.
10. Actor can enter a percentage of growth
11. Actor can set their Country of Origin
12. Actor can toggle Text alerts on or off
13. Actor can set their phone number

Non-Functional Requirements

1. The software uses the TextLocal api to send SMS alerts
2. The software pulls the Actor's watch list from the Firebase database
3. The software pulls the Actor's portfolio from the Firebase database
4. The server-side web crawler will pull the trending stock from websites to upload to the Firebase database.
5. The software connects to the IEX Trading API and pulls stock information.
6. The software creates user information when registering in Firebase database
7. Calculate the change in currency



Use case: Register

Primary actor: Stockholder

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

Preconditions: Need internet connection

Trigger: The Actor or investor creates an account by pressing the create account button on the login page

Scenario:

1. Actor: Observes the Registration Page
2. Actor: Enters first name, last name, email, phone number, and password for the app
3. Application System: The email address and confirmation password is correct
4. Application System: System connects to registration server, verifies no account exists and loads login page
5. Application System: Login page is displayed

Exceptions:

1. Actor enters wrong confirmation password: User enters wrong conformation password into the Stock App and is sent back to the registration page, and an error message will be displayed. See Message to the Actor (1,2,3,4,5).

Priority: High

When Available: Week 3

Frequency of Use: Many times per day

Open Issues: No open issues at this time.

Use case: Login

Primary actor: Stockholder

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

Preconditions: User must be connected to the internet

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

Scenario:

1. Actor: Observes the Login Page
2. Actor: Enters username and password correctly for the app
3. App System: Verifies credentials by sending that information to a server which compares
4. Actor: App transfers to the My Portfolio Summary screen the pin stored on Firebase database

Exceptions:

1. Enters information in incorrectly: User enters the wrong username or password into the Stock App 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. See Message to the Actor(1,5).

Priority: High

When Available: Week 1

Frequency of Use: Many times per day

Open Issues: No open issues at this time

Use case: Reset Password

Primary actor: Stockholder

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

Preconditions: Actor is Connected to the Internet.

Trigger: Actor clicks on forgot password button.

Scenario:

1. The Change password appears.
2. Actor enters email address.
3. Actor selects 'Reset.'
4. Password Server sends user email with reset password link
5. Actor reads an email and clicks the link contained in the email.
6. Actor observes change password and web page
7. Actor enters a new password twice and press 'save' button.
8. Actor is redirected to login page.

Exceptions:

1. Actor does not enter the same password twice. See Message to the Actor(3,5).

Priority: High

When Available: Week 2

Frequency of Use: not regularly or infrequently

Open Issues: None at this time.

Use Case Name: Start Application use case

Primary Actor: Stockholder

Goal Context: The start application use case will determine if the user has already logged onto the website previously.

Preconditions: The actor must be connected to the internet and have access to the firebase database

Trigger: The Actor enters the website's URL into a browser of their choice.

Scenario:

1. The start application use case will check the browser for the user's credentials.
2. Load the view navigation slider.
3. Load portfolio summary.
4. Load Search for stocks use case.
5. Load Infinite Scrolling Banner.

Exceptions:

1. The Actor could have changed their password: transfer the user to the login page to complete the login process.

Priority: High

When available: Week 4

Frequency of use: This feature will be used frequently, when the Actor loads a new page or logs in for the first time.

Open Issues: There are no open issues at this time.

Use Case: View Navigation slider

Primary Actor: Stockholder

Goal Context: The view Navigation slider is a side panel and top bar which houses different panes like the search bar, and links to the trending stocks page, watchlist page, and the portfolio page.

Preconditions: The actor must also be connected to the internet.

Trigger: The start application use case will have been triggered for this to occur for the first time.

Scenario:

1. Actor: Views the navigation slider page which includes the following clickable buttons:
 - a) Search for Stock button in top right hand corner (see search for stock use case)
 - b) View Trending stocks button on the left hand side of the panel (see View Trending stocks use case)
 - c) View Watchlist button also on the left hand side of the panel (see View Watchlist use case).
 - d) View Portfolio button also on the left hand side of the panel (see View Portfolio use case).

Exceptions:

1. This page will view links and will not contain any user exceptions

Priority: High

When Available: Week 3

Frequency of Use: Many times per day

Open Issues: There are currently no open issues at this time

Use Case: View Portfolio Summary

Primary Actor: Stockholder

Goal Context: The Portfolio Summary will display the calculated profit, portfolio growth, net worth, and stock diversity, and four stocks from the Actor's portfolio.

Preconditions: The actor must be connected to the internet. The Iex Trading server and a firebase must be up and running.

Trigger: The user selects the login button on the login page.

Scenario:

1. Four stocks, portfolio growth, stock diversity, net worth, and calculated profit will be displayed on the screen.
2. When the actor clicks one of the individual stocks that is displayed, see use case (View individual stock use case).

Exceptions:

1. If the actor has not selected stocks to be in their portfolio, the "no stocks selected" message will be displayed.

Priority: High

When available: Week 5

Frequency of use: Every time the user logs into the application.

Open Issues: No issues at this time

Use case: Log out

Primary actor: Stockholder

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

Preconditions: Actor is connected to the internet

Trigger: Actor clicks the logout button to exit the application in the header.

Scenario:

1. Actor observes logout button on the View Navigation Slider use case
2. Actor: Confirmation box appears.
3. Actor: Selects yes.
4. Actor: is redirected to login page.

Exceptions: Actor does not click on logout page, or the Actor selects 'no' in which the Actor will be returned to the Start Application

Priority: High

When Available: Week 2

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

Open Issues: None at this time.

Use case: Edit User Settings

Primary actor: Stockholder

Goal in Context: Allows the actor to set their country of origin, the conversion rate, SMS alerts, and the Actor number.

Preconditions: Actor is connected to internet

Trigger: Actor clicks on settings button to view and change settings which are located in the navigation slider use case.

Scenario:

1. Actor observes all the different settings (origin setting, conversion rates, SMS alerts, Actor phone number)
2. Actor checks on the checkbox on which setting they want to change.
3. Actor clicks on save button in the window to save the settings.
4. Actor is returned to main/home screen with changes applied

Exceptions:

1. Actor does not want to change their settings.
2. Actor clicks on cancel button that redirects them back to the previous page

Priority: Medium

When Available: Week 2

Frequency of Use: probably infrequent

Open Issues: None at this time.

Use case: View Portfolio

Primary actor: Stockholder

Goal in Context: The actor will be able to see their net worth, portfolio growth, and stock diversity, along with the ability to view the price of individual stocks that the actor has previously added to their favorite list.

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

Trigger: The user clicks the My Portfolio link from the navigation slider use case.

Scenario:

1. The actor's portfolio data is pulled from the Firebase database
2. The stock information is pulled from the Lex Trading server
3. The actor's net worth is calculated and displayed in a chart (what chart?)
4. The user's portfolio growth is calculated and displayed in a chart
5. The actor's stock diversity is calculated and displayed in a pie chart
6. The actor's favorite list is pulled from the database
7. The individual stocks the actor has favorited are displayed
8. The navigation slider use case is displayed

Exceptions:

1. The actor has no stocks in their favorite list. A message is displayed informing the actor that their favorite list is empty. See message to Actor(12).

Priority: High priority

When Available: Week 5

Frequency of Use: Common usage

Open Issues: No open Issues at this time

Use case: View Watchlist

Primary actor: Stockholder

Goal in Context: The goal is to show stocks that the user is interested in. The actor will be able to quickly view prices and news about individual stocks that are on their watchlist.

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

Trigger: The actor clicks on the watchlist link on the navigation slider use case.

Scenario:

1. The actor's watchlist data is pulled from the Firebase database
2. The stock information is pulled from the IEX server
3. Each stock on the actor's watchlist is displayed with its current price
4. A link to the individual stock use case for each stock of the watchlist is displayed
5. The navigation slider use case is displayed

Exceptions:

1. The actor's watchlist is empty. Text is displayed telling the actor that their list is empty.

See message to Actor (11).

Priority: Medium priority

When Available: Week 6

Frequency of Use: Common usage

Open Issues: No issues at this time

Use Case: Search for Stock

Primary Actor: Stockholder

Goal in Context: The goal of this use case is to search for stocks in the search bar that resides in the Navigation slider. Once the Actor has searched for that given stock, the Actor will be transferred to the view individual stock use case to view information about that given stock.

Precondition: Access to IEX Trading Server and connected the internet

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

Scenario:

1. Actor observes My Summary use case after logging into his/her account.
2. Actor proceeds to enter the name of the desired stock in the search bar
3. Actor clicks the search Button
4. The system connects to the IEX server and displays the information on the specified stock.
5. The stock can then be either added to their portfolio(add to Portfolio) or added to their watchlist (Add To Watchlist).

Exceptions:

1. String Value entered in the search bar is not recognized as an actual stock and an error message is displayed. See Messages to Actor (6).

Priority: Important, as that is how the Actor looks up stocks to place in his/her watchlist.

When Available: Week 4

Frequency of use: Many times

Open issues: No issues at this time

Use Case: Calculate Trending Stocks

Primary Actor: Stockholder

Goal in Context: The goal of this use case is to calculate trending stocks by sorting the user's stocks into categories.

Trigger: Calculated when Actor clicks on View Trending Stocks

Scenario:

1. Actor clicks on Trending Stocks tab.
2. The computer automatically calculates trending stocks by sorting the User's stocks by categories, then finds the trending stocks in that category.

Priority: Important, as this forms the basis of the Actor's trending stocks page.

Frequency of use: Whenever the user views the Trending stock page.

When available: Week 1

Open Issues: No issues at this time

Use case: View Infinite Scrolling Banner

Primary actor: Stockholder

Goal in Context: For the Actor to be able to view stocks that are trending, on the bottom of their screen.

Preconditions: Need access to the IEX and the Fire database.

Trigger: The scrolling bar is automatically loaded with trending stocks that that the actor gets to choose from

Scenario:

1. Actor: The banner is scrolling to the left at the bottom of the screen
2. Actor: Clicks on the stock in which they want to observe
3. Actor: They are taken to the profile of the stock
4. Actor: User can decide if he wants to add this stock to his favorites

Exceptions:

1. Bar doesn't scroll: The scroll bar is unmoving, but still displays stocks
2. Bar does nothing when clicked: The stock is chosen, but when clicked it doesn't take you to the stocks page so that you may get more information

Priority: Low Priority, doesn't need to be complete to finish project(week 7)

When Available: Middle increment

Frequency of Use: Many times per day

Open Issues: No issues at this time

Use Case: Remove from portfolio

Primary Actor: Stockholder

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

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

Trigger: Actor selects the remove from portfolio button from the view portfolio use case

Scenario

1. Actor: Actor is given the option to select the remove from portfolio button that is synced through the individual stockpage and their portfolio
2. Actor: When 'Remove from portfolio' is clicked on, it gives the detailed information given to the actor and gives a confirm dialog box of the personal stock being removed from their portfolio page

Exceptions:

1. If the database is not reachable then it will give unexpected delays to actor. See message to Actor (16).

Priority: Medium

When available: Week 10

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 at this time

Use case: Remove from Watchlist

Primary actor: Stockholder

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

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

Trigger: The actor clicks a button on the watchlist use case or the individual stock use case

Scenario:

1. The stock is removed by passing a query to the Firebase database
2. The button previously used is switched from 'remove' mode to 'add' mode

Exceptions:

1. The actor is not logged in. A prompt tells the user to log in if they want to access their watchlist. See message to Actor (15).

Priority: Medium

When Available: Week 6

Frequency of Use: low usage

Open Issues: There are currently no open issues on this use case.

Use case: View Trending Stocks

Primary actor: Stockholder

Goal in Context: The Actor 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: There is only a certain number of trending stocks that is recommended to that individual.

Trigger: The Stockbroker or investor decides to click on the Trending stocks page from the Navigation Slider use case and view the trending stocks that are displayed.

Scenario:

1. Actor: Trending stocks are displayed to the user:
 - i. Stock symbol with price
 - ii. Percentage growth that particular day.
2. Actor: The user clicks on one of the stocks to view individual information about that given stock (See Individual Stock use case)

Exceptions:

1. This page will view links and will not contain any user exceptions

Priority: Medium Priority

When Available: Week 2

Frequency of Use: Many times per day

Open Issues: No issues at this time

Use case: View Individual Stock Page

Primary actor: Stockholder

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 Actor will have to be connected to the internet. The Actor will need access to the IEX trading server.

Trigger: The actor either searches for a given stock or finds one of interest from the portfolio page, main screen, watchlist page, or 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. Dividends
 - f. Peers
2. The page will display the view stock growth in the middle of the pane. The view current stock price will be to the left of the view stock growth chart. The pane will also contain the current stock symbol above the chart next to the stock price. The upcoming news is displayed underneath and to the right of the view stock growth chart. The list of peers will be displayed to the left of the upcoming news. And the dividend information will be displayed below that.

Exceptions:

1. This page will view information and does not contain any exceptions at this time

Priority: High

When Available: Week 3

Frequency of Use: Many times per day

Open Issues: There are no open issues at this time.

Use Case: Add to Portfolio

Primary Actor: Stockholder

Goal Context: The add to portfolio feature will allow the user to be able to add individual stocks to their portfolio

Preconditions: Have to be connected to the firebase database, and be connected to the internet.

Trigger: User selects the add to portfolio button that will be viewed with an Individual stock page which will add that particular stock to their portfolio.

Scenario

1. Actor: Actor is given the option to select the add to portfolio button that is synced through the individual stockpage and their portfolio
2. Actor: When 'Add to portfolio' is clicked on, it gives the detailed information given to the actor and gives a confirm dialog box of the personal stock being removed from their portfolio page.

Exceptions:

1. If the database is not reachable then it will give unexpected delays to actor. See message to Actor (14).

Priority: Medium

When available: Week 8

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 at this time

Use case: Add to Watchlist

Primary actor: Stockholder

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

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

Trigger: The actor clicks a button on the individual stock use case

Scenario:

1. The stock is added by passing a query to the Firebase database
2. The button previously used is switched from 'add' mode to 'remove' mode

Exceptions:

The actor is not logged in. A prompt tells the user to log in if they want to access their watchlist.

See message to Actor (13).

Priority: Medium

When Available: Week 6

Frequency of Use: low usage

Open Issues: There are no open issues at this time.

Use Case: Calculate Price Alert

Primary Actor: Stockholder

Goal in Context: To calculate how much the Actor's stock price fluctuated and send the Actor an automated alert.

Trigger: When the Actor's Stock on his/her watch list or trending page goes up/down a certain percentage.

Scenario Watchlist Stocks:

1. The computer automatically notices a 5% increase/decrease in select stocks in the watchlist/trending stocks page.
2. The computer then sends an SMS message to the Actor via the telephone number provided in Register.

Priority: Optional, as the Actor could decide not to have SMS message alerts turned on for any of his/her stocks. See Messages to Actor (7,8,9,10)

Frequency of use: Dependent on User

Open Issues: There are currently no issues at this time.

Stock Application

ID	Use Case	Start	Finish	Duration	Jan 2018				Feb 2018				Mar 2018				Apr 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
1	Log In	1/8/2018	1/12/2018	1w																
2	Log Out	1/8/2018	1/12/2018	1w																
3	Register	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	View Navigation Slider	1/29/2018	2/16/2018	3w																
7	Set Settings	1/29/2018	2/2/2018	1w																
8	Search for stocks	2/5/2018	3/2/2018	4w																
9	View Portfolio Summary	2/5/2018	2/16/2018	2w																
10	View Portfolio	2/19/2018	3/2/2018	2w																
11	Add to Portfolio	2/19/2018	2/23/2018	1w																
12	Add to Watchlist	2/19/2018	2/23/2018	1w																
13	View Watchlist	3/5/2018	3/9/2018	1w																
14	Remove from Portfolio	3/5/2018	3/9/2018	1w																
15	Remove from Watchlist	3/5/2018	3/9/2018	1w																
16	Calculate Trending Stocks	3/12/2018	3/16/2018	1w																
17	View Trending Stocks	3/19/2018	3/23/2018	1w																
18	View Individual Stocks	3/26/2018	3/30/2018	1w																
19	Calculate Price Alerts	4/2/2018	4/6/2018	1w																
20	Scrolling Banner	4/9/2018	4/13/2018	1w																

Messages to the Actor

1. Please enter a valid email
2. Username already exists!
3. Password does not meet all requirements
4. Email already exists!
5. Email and Password combination is incorrect! Please Try Again.
6. Please enter valid stock symbol!
7. Stock in Actor's Watchlist has Increased
8. Stock in Actor's Watchlist has decreased
9. Stock in Actor's Portfolio has Increased
10. Stock in Actor's Portfolio has decreased
11. Watchlist is currently empty
12. Portfolio is currently empty
13. Added stock to the watchlist
14. Added stock to the portfolio
15. Removed stock from the watchlist
16. Removed stock from the portfolio

Glossary:

1. **Dividends:** 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. **Trending stocks:** Stock that is doing well and being looked at by many people
7. **Net Worth of portfolio:** Book value or shareholders equity
8. **Pane:** is the page in which the navigation slider use case encloses.
9. **Firebase Database:** Defines who has access to the data and how they can access it
10. **Stockholder:** A shareholder
11. **Stock Portfolio:** a group of financial assets such as stocks
12. **Stock Watchlist:** Stocks that are being added to a list so they can be seen faster
13. **View Calculated Profit:** (I.E., what this means for our app) Being able to see the profit of each stock on your profile
14. **View stock growth:**(I.E., what this means for our app) being able to see the growth in your stock over time
15. **Portfolio Summary:** is the main menu of the stock app so that you can see any stocks at the same time
16. **Peers:** group of individuals or entities who share similar characteristics and interests.