Deliverable 2 - Requirements

Project C.A.T. - Capital Activity Tracker

Group: "The Stockings"

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Course: CS 386 Software Engineering, Spring 2018

Instructor: Marco Gerosa

GitHub Link: https://github.com/kdl222/CAT

1. *Positioning*

1.1. Problem Statement

The Problem of	An intimidating and time-consuming stock market trading network in regards to buying and selling worthwhile stocks
Affects	Experienced and inexperienced stock traders
The Impact of Which is	Avoidance of and/or inability to properly evaluate opportunities provided by stock trading

The problem of an intimidating and time-consuming stock market trading network, in regards to buying and selling worthwhile stocks, affects experienced and inexperienced stock traders; the impact of which is the avoidance of and/or inability to properly evaluate opportunities provided by stock trading.

1.2. Product Position Statement

For	Experienced and inexperienced stock buyers/sellers
Who	Wish to reduce the time it takes to make more informed stock market trading decisions and the risk associated with stock market trading
The (product name)	Capital Activity Tracker (CAT) - a stock market trend-analysis application
That	Gathers information and provides data visualizations, live transaction suggestions, and in-depth company

	evaluations
Unlike	Expensive, stock-analyzing "academies" such as IMarketsLive.com, which overwhelm the client with too many app features and unnecessary information for over $300/month.
Our Product	Offers simple ways to help users make informed stock decisions

For underline experienced and inexperienced stock buyers/sellers who wish to reduce the time it takes to make more informed stock market trading decisions and the risk associated with stock market trading, Capital Activity Tracker (CAT) is a stock market trend-analysis application that gathers information and provides data visualizations, live transaction suggestions, and in-depth company evaluations; unlike expensive, stock-analyzing "academies" such as IMarketsLive.com, which overwhelm the client with too many app features and unnecessary information for over $300/month, our product offers simple ways to help users make informed stock decisions.

1.3. Value Proposition

CAT is a stock market analysis application that brings data visualizations and information-gathering together in an easily-accessible and affordable program, making it perfect for new and experienced stock traders alike. Equipped with live transaction suggestions and in-depth company evaluations, CAT allows traders

to make more informed financial decisions than could be accomplished alone.

Consumer Segments:

- Experienced and inexperienced stock buyers/sellers

- Average age range: 18 - 50.

- Early adult = approximately 18 - 30

- Established adult = approximately 31 - 50

- Investing statuses: lower-tier, middle-tier, higher-tier

- Male and Female

2. *Stakeholders*

- Stock traders - experienced and inexperienced users and potential users of the product

- Third party ad website(s) - moderate ad hosting will be performed on finalized product application

- Companies offering stock - Give CAT the ability to track and find stocks.

- Developers of product -

- Competitors - What competitors are or are not doing and the prices of the applications affect the outcome of CAT.

- Hosting Service - The medium in which the app will exist (Play Store, Apple Store , AWS, etc).

3. *Functional Requirements*

1. Supply users with live-action updates and graphs

2. Tutorial section for new traders

3. Ability to track individual stocks

4. Glossary of stock jargon

5. Collect news information and parse for keywords

6. A clean and user-friendly interface hosted on a responsive web environment

7. The ability for users to register/sign in

8. Ticket reporting system for bugs

9. The ability for users to list their preferred stocks

4. *Non-functional Requirements*

1. Usability: Easy to navigate UI with easy to read information

2. Availability: Able to be used 24/7

3. Reliability: low down-time threshold; less than a day

4. Compatibility: Able to be operated through multiple operating systems and platforms

5. Security: Keep track of user information through sign-in function and keep private
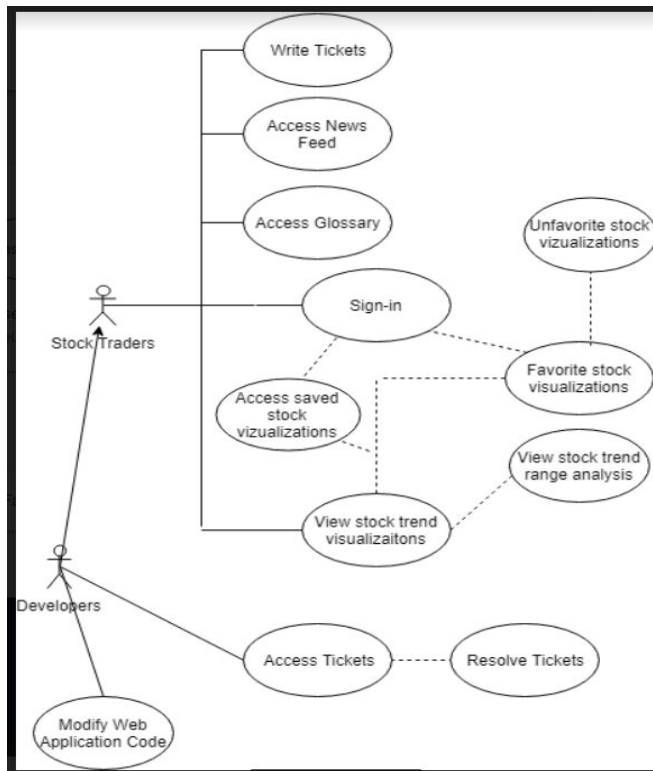
5. *MVP (Minimum Value Product)*

We will include the following features in our MVP:

Grabbing and parsing keywords from a news source. User sign-in and data-saving for each account. Stock trend visualizations. Company information and stock-market-specific news feed available for users to view.

We will also validate usability by starting to work on our UI and make it as simple and easy to understand as possible.

6.   *Use Cases*

6.1.   Use Case Diagram

6.2.   Use Case Descriptions

Name: Set Trend Tracking Range

Brief Description: The user should have the ability to set a range of a certain stock, in which the low of the range is where they want to buy, and the high of the range is where they want to sell.

Flow of Events: The user will be able to select a desired company stock. Based on past trends of the selected company stock, the user can set a trend range that suits their desires. When the stock is at or near the minimum or maximum value set an alert will be sent alerting them that the stock has dropped or succeeded their trend range.
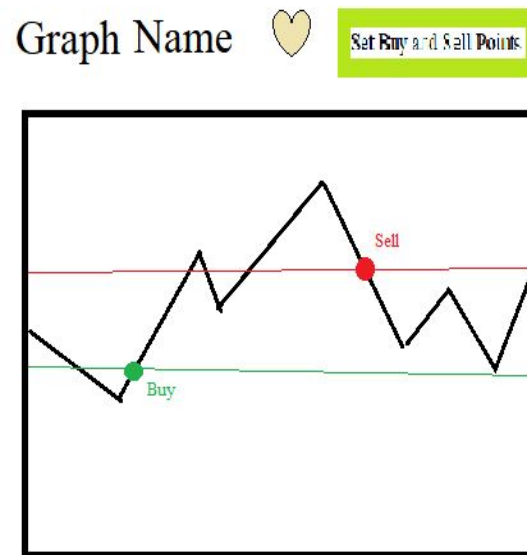
Key Scenarios: If the company stock is new to the NYSE the minimum will automatically be set to the default value set at the initial selling point.

Special Requirements: The minimum of the range must not pass the price it was set at when it entered the New York Stock Exchange (NYSE).

Preconditions: Active internet use.The user must select a specific company stock to watch.

Post-conditions: The user should be able to set notifications for specific stocks they are watching.

Extension points: The value of the company can have any news impacting its stock, so a user can adjust their desired range according

Graph Name ♡ Set Buy and Sell Points

Name: Glossary of Stock Jargon

Brief Description: The users should have the ability to view a glossary of common stock trading verbiage.

Flow of Events: The system will incorporate this because there is a lot of jargon in the Stock Market and providing a glossary of commonly used words of phrases allows the user to maintain educated in their stock trading endeavors.

Key Scenarios:

Special Requirements: The glossary should be maintained by a reputable source.

Preconditions: There should be a way to navigate to the glossary somewhere in the User Interface.

Post-conditions: The user should be able to navigate back to their previous page after checking the glossary.

Extension points: The glossary could be supported in multiple languages to be more user-friendly.

Home	About Us	Ticket Submission	Glossary

Glossary: A   A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Advanced Companies
Agent
All-or-None Order
Annual Report
Anonymous Trading
Arbitrage
Ask or Offer
Ask Size
Assets
Assignment
Averages and Indicies
Averaging Down

Name: Access News Feed

Brief Description: The user must have the ability to access information that the system acquires about news related to their companies of interest

Flow of Events:

1. The user is on their homepage.

2. The user views their company of interest from a list of companies

3. Use case: Validate User is Signed In is performed

4. The user views a feed of news articles related to the company among related articles.

5. The user scrolls to read less related and/or more general article titles

   Alternative Flows

1. The user views their company of interest

2. The user views a news snippet on homepage

3. Use case: Validate User is Signed In is performed

4. The system displays a page with the news snippets article including stock information about related articles.

● User not signed in:

   If step 3 use case does not complete successfully, the use case ends with a failure condition (web app may prompt user to sign in)

Key Scenarios: The user wants to see news related their company of interest.

Special Requirements:

● The articles should be sorted by most reputable publishers first.

- They should be further prioritized by the amount of relations to their selected company.

Preconditions:

- User is logged in with active internet access
- User knows what company they want to see news for

Post-conditions:

- Successful Completion:

    News article is marked as read, priority of news article is lowered

- Failure Condition:

    Unanticipated errors will be saved to a ticket

Extension points:

- The user can view related or suggested links
- The user can view stock information from the tickers

News Feed

Articles related to Apple Inc.:

Apple launches iPhone X ☝⬆

Apple slowing old iPhones ⬇

Samsung to release... ⬆

[Less related article] ▬

[General article about DOW] ⬇

"Article Title"

Article Body ∿

∿∿∿∿∿
∿∿∿∿∿∿
∿∿∿∿∿
∿∿∿.

"Related News Headlines"

" ∿∿∿
∿∿∿ "
" ∿∿∿

Name: Favorite/Unfavorite Stock Trend Visualizations

Brief Description: This use case describes how the CAT user uses the CAT web application to save a specific stock analysis graph to their home page to easily re-access later. Or how to dismiss a graph from the same list.

Flow of Events:

1. The use case begins when the CAT user clicks on a specific stock graph's "favorite" function.

2. Use case: Validate User is Signed In is performed

3. The graph is saved to a user-sensitive home-page list

4. The use case ends successfully

   Alternative Flows

- User not signed in:

  If step 2 use case does not complete successfully, the use case ends with a failure condition (web app may prompt user to sign in)

- Graph is already saved to user-sensitive home-page list:

  User is informed that the graph they have selected is already in their user-sensitive home-page list and is asked if they would like to remove it.

  - User selects yes: graph is removed from user-sensitive home-page list. The use case ends successfully.

  - User selects no: the use case ends.

Key Scenarios:

- No internet connection at time of "favorite"

Pre-conditions:

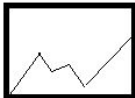- Active internet access

Post-conditions:
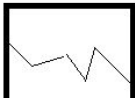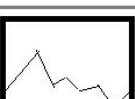
- Successful Completion:

   User successfully saves or discards chosen graph from

   user-sensitive home-page list

- Failure Condition:

   Error, if unanticipated, will be saved to a ticket

C.A.T. Stock Analysis

Recommended Analyses

Favorite Graphs:		
Apple Inc.		ServiceNow
Microsoft Corporation		--- Basic Company Information and Stock Values ---
Oracle Corporation		
Adobe Systems		Progress Software
Salesforce		
Paycom		--- Basic Company Information and Stock Values ---
Snap Inc.		
Intuit		Arista Networks
Symantec		
IBM		--- Basic Company Information and Stock Values ---
Red Hat Software		
Workday, Inc.		Cadence Design Software
SAP SE		
...		--- Basic Company Information and Stock Values ---
Read More		
		Zendesk

Name: View stock trend visualizations

Brief Description: Allow users to view graphs of stock trends for any stock implemented into the system.

Flow of Events:

1. User searches for a stock using a name or ticker.

2. The system finds the stock based on name or ticker.

3. The system displays a page with the stock information including trend visualizations such as a graph.

4. The user can select what time period to focus on.

5. The system focuses graph on certain time period.

6. The user can zoom-in and out on the graph.

7. The system will zoom in on graph.

8. The user can also see statistics of the stock.

Key Scenarios:

● The user may want to see the stock trend from a longer time period than the system has implemented.

● The user may not know the full name or ticker of a company.

Special Requirements:

● Grab stock trend data from third party and load into our system.

● Create a GUI that displays stock statistics and allows users to zoom in and out of the graph.

● Create a search bar.

● Make sure that our system recognizes many different stocks.
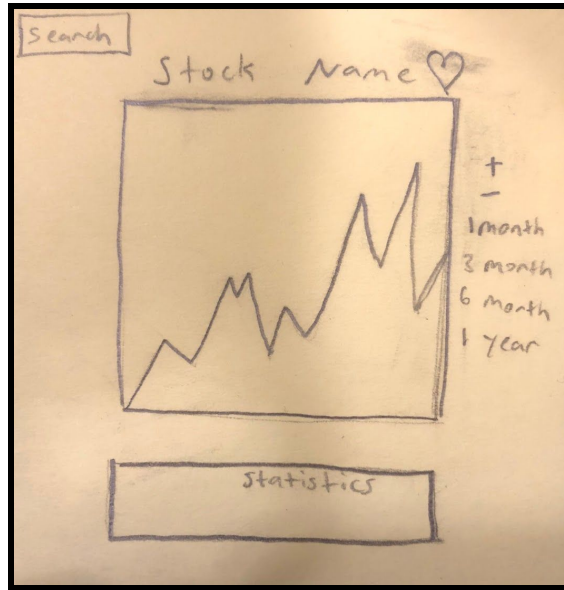
Preconditions:

- The user must know the name or ticker of a company to be able to search for its stocks.

Post-conditions:

- An error may arise in the system when the graph won't load or zoom.

Extension points:

- The user will be able to "favorite" graphs and store them in a list in the system.

- The user will be able to re-access "favorited" stock graphs

- The user will be able to alter the time range for the view of the stock graph analysis

- The system may not be able to find a company's stock after the user has searched for the name.

- The system could run into an error when trying to load stock visualizations.

- Instead if being able to see stock information, users will have to submit a ticket.
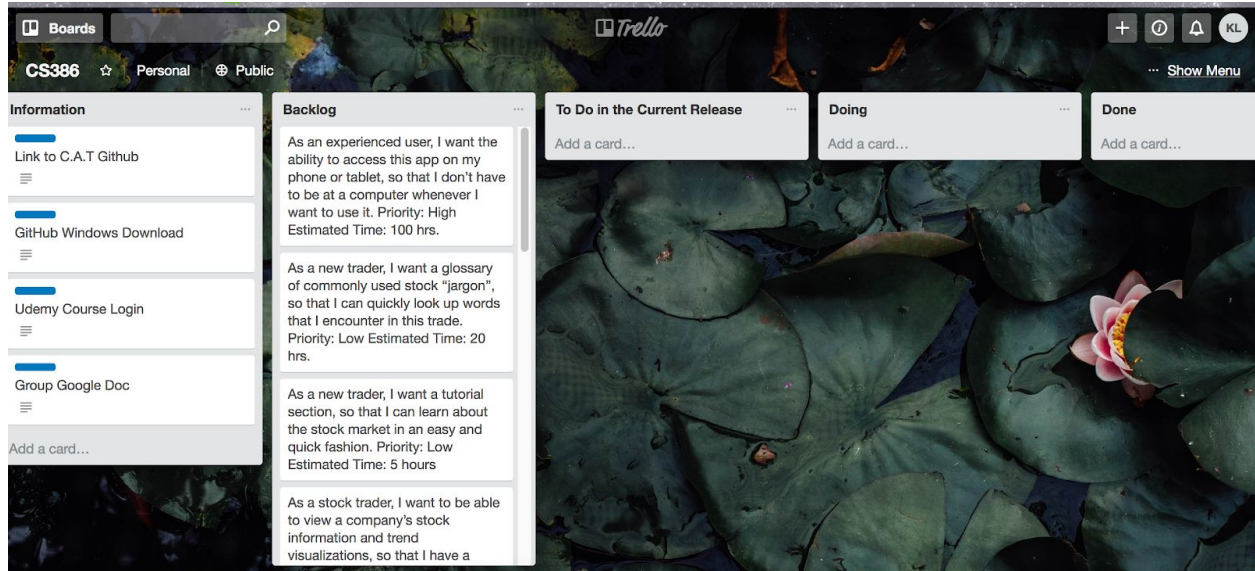
7. *User Stories:*

- As a stock trader, I want the ability to save the graphed analysis of the trend of a particular stock so that it can be easily accessed without me having to search the entire CAT web application every time I would like to view it.

  - Priority: Medium

  - Estimated Time: 10 hours

- As a stock trader, I want to be able to view a company's stock information and trend visualizations, so that I have a better idea of when to buy/sell.

  - Priority: High

  - Estimated time: 30 hrs

- As a new trader, I want a tutorial section, so that I can learn about the stock market in an easy and quick fashion.

- - Priority: Low
  - Estimated Time: 10 hrs
- As an experienced trader, I want to be able to select a range in a stock graph for analysis, so that I can gain a more accurate understanding of how the performance of a company during a specific section of time impacted their stock performance.
  - Priority: Medium
  - Estimated Time: 15 hours
- As a new trader, I want a glossary of commonly used stock "jargon", so that I can quickly look up words that I encounter in this trade.
  - Priority: Low
  - Estimated Time: 20 hrs.
- As a user, I want a report ticket, so that I can report any unintended behaviors occurring on the web application.
  - Priority: Low
  - Estimated Time: 5 hrs.
- As a trader, I want the latest news of companies I've been watching, so that I can make more informed decisions of buying and selling stocks
  - Priority: High
  - Estimated Time: 10 hrs

- As an experienced user, I want the ability to access this app on my phone or tablet, so that I don't have to be at a computer whenever I want to use it.
  - Priority: High
  - Estimated Time: 100 hrs.
- As a frequent user, I want the ability to sign in, so that I can save preferences to make finding things easier.
  - Priority: High
  - Estimated Time: 10 hrs
- As a user, I want to see other related articles from the current article that I am reading, so that I don't have to traverse back through pages to find more articles.
  - Priority: Low
  - Estimated Time: 2 hrs

8. ***Trello***

Link: https://trello.com/b/wivdXgKk/cs386

9. *Group Participation*

Savannah Fischer - 20% Created and worked on use case diagram.

Kaitlyn Lee - 20% Created needed boards, added user stories to Trello, and took

screenshots. Uploaded needed documents to GitHub.

Clayton Williams - 20% Added user stories and a use case

Brandon Horner - 20% Added user stories and a use case

Adam Goins - 20% Created initial Trello board with group information. Provided

a Udemy course on Angular 5 for the team.