NORTHERN ARIZONA UNIVERSITY

Deliverable 5 - Release 1

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. **Introduction**

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 reliably accomplished alone.

Users can create a secure and private account on the CAT web application, where they can easily view and remove any stocks, and their accompanied real-time activity graphs, that they have selected to watch. The ranges of time covered by stock activity graphs can be adjusted to the user's preference. Users can view a news feed containing many articles. Users can add and remove keywords in a keyword manager, set the weight of each word, and watch as the manager parses through the news feed to show the net weight of each article.

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

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

2. **Implemented Requirements**

- Sign-in capabilities
- Parsing of news articles to see what stocks are doing well
- Glossary for stock jargon

- Tutorial section for new traders

- Displaying a company's stock information and trend graph

3. Adopted Technologies

- Angular - A JavaScript Framework that allows users to create reactive Single-Page-Applications. Users use the Angular CLI command line interface to build projects. We decided to use Angular because it has the potential for better modularity inside a single web page.

- Google Firebase - A free database created by Google that will allow the developers to easily, efficiently, and securely store user information than could be reasonably accomplished without this technology. It is also easier for the users to sign in to.

- Bootstrap - An HTML framework that increases the development team's styling capabilities regarding the web application. Compatible with Angular systems. The inclusion of Angular helped to make the project look far better than could reasonably be accomplished without.

- Alpha Vantage - An API that the development team has used to provide real-time data regarding stocks. As this API was free and provided the team with the means to accomplish one of their product's necessary capabilities easily, it was adopted.

- News API - News API is a simple HTTP REST (Representational State Transfer) API. It is primarily used to search and retrieve live articles from the web. The development team will use this to pull relevant articles into the web application.

As the web application needs to provide relevant research materials for its users, this API was integrated into the system.
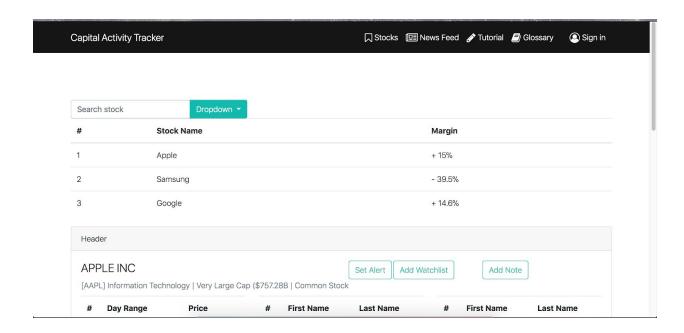
- Pingendo - An easy to use HTML page creator with CSS capabilities. Pingendo was easier to utilize, less time consuming, and more attractive than could have likely been accomplished by hard-coding HTML for our web application.
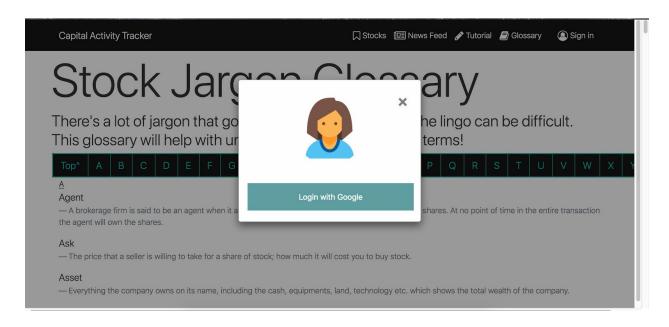
4. Licensing

We are going to use Apache 2.0

5. Look & Feel

Navigation bars are common at the top of web pages; going with tradition, our web application created a navigation bar with links to: a basic stock tutorial/recommendation page, an 'about' page, a glossary, a newsfeed page, and a link to a working sign in modal. For all components of our web pages, we have utilized Pingendo for its ease-of-use as well as its attractive features. Default text and pictures were changed to better fit our product and product themes. Icons were changed/added to better represent the text or functionality they served to highlight, and text size was often adjusted for better readability.

| Capital Activity Tracker | | | | | Stocks | News Feed | Tutorial | Glossary | Sign in |

Search stock | Dropdown ▾

#	Stock Name	Margin
1	Apple	+ 15%
2	Samsung	- 39.5%
3	Google	+ 14.6%

Header

APPLE INC | Set Alert | Add Watchlist | Add Note
[AAPL] Information Technology | Very Large Cap ($757.28B | Common Stock

#	Day Range	Price	#	First Name	Last Name	#	First Name	Last Name

Stock Jargon Glossary

There's a lot of jargon that goes on in stocks--mastering the lingo can be difficult. This glossary will help with understanding common stock terms!

Top^	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

A

Agent

— A brokerage firm is said to be an agent when it acts on behalf of the client in buying or purchasing of shares. At no point of time in the entire transaction the agent will own the shares.

Ask

— The price that a seller is willing to take for a share of stock; how much it will cost you to buy stock.

Asset

— Everything the company owns on its name, including the cash, equipments, land, technology etc. which shows the total wealth of the company.

Login with Google

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At the Money

— A situation at which an options strike price is identical to the price of the underlying securities. Options trading activity tends to be high when options are at the money.

New to Stocks? We Got Your Back

The Stock Market, or Stock Exchange, is an international marketplace where gratuitous amounts of money are continuously being traded. This marketplace markets rights to assets, or shares. A share is a piece of a company. The value of a share is connected to the value of the particular company that it comes from. If the value of a company increases, so, too, does the value of its shares. Companies can raise money by selling their shares to expand or improve upon themselves. Each company has a reputation; the better the reputation, the more people will be willing to buy shares in that company, as investing likely comes with less risk to the money invested. The poorer the reputation, the more difficult that company will find it to sell their shares as the money invested has the potential of being lost if the company's value declines.

Rumors and speculation rule the stock market. Even the slightest word of ill-performance regarding a company can cause its share prices to drop drastically (such as accusations that children's toys from a certain company are made with lead paint). On the other hand, if people are excited about a company's cause and/or their potential product and buy shares to encourage said growth, the company's shares will increase in price, as well. This can often be observed with companies starting out on Kickstarter. Whether this hype actually amounts to anything concrete is another concept entirely. This is why the stock market is so fickle.
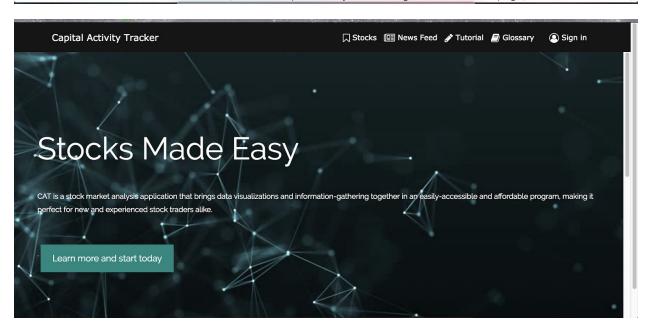
What is C.A.T?

Captial Activity Tracker (C.A.T) is a web application designed to assist experienced and inexperienced stock traders alike in researching and determining which stocks investments are the right for them.

Equipped with live transaction suggestions and in-depth newsfeed keyword tracking, C.A.T. seeks to assist traders in making more informed financial decisions than could be reliably accomplished alone.

Once properly logged into the C.A.T. application, traders can save their favorite stocks (accompanied by real-time activity graphs with adjustable time ranges) to a list on their profile page. With or without an account, users can view our available newsfeed and, with the help of the keyword manager attached to the page, evaluate

Stocks Made Easy

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.

Learn more and start today

6. Learning/Training

The team has participated in an online course on Udemy to learn Angular. Bootstrap and html were learned by looking at examples and practicing writing code.In regards to the sign-in function, we learned about Google's Firebase and routing through simple tutorials. The APIs were learned by reading documentation and messing around with the code.

Angular - The development team utilized a purchased Udemy course revolving around Angular 5. The course included videos describing and/or exhibiting the steps necessary to create a web application based on this technology. We learned that

Bootstrap - The purchased Udemy course also contained strategies revolving around the use and implementation of Bootstrap while using Angular.

Google Firebase - We read documentation and followed a tutorial to figure out how to get the sign-in function working.

Alpha Vantage - We read the API documentation to teach us about how to grab stock information.

News API - This API was relatively straightforward to work with, and was a good opportunity to familiarize ourselves with APIs and their data.

Pingendo - Pingendo seemed a fairly uncomplicated program to use. The development team downloaded this program and simply designated the necessary web pages that needed to be created amongst themselves. Team members were allowed to explore the program, adding and experimenting with components offered to them by Pingendo onto their default, blank HTML page at their discretion until satisfied.

7. Lessons Learned

The development team learned roughly how to work with several API that we intend on keeping for the final release. We also learned various ways to efficiently create and edit HTML pages for our web pages, for which we learned to utilize Angular 5 and Bootstrap.

Changes we intend to implement for the final release include: further stylizing the web pages for our project as necessary, enhancing the methods used in applying the API necessary for our project to work properly, making the section and page mapping in the application more efficient, adding routing in the glossary page, implementing the newsfeed page, adding the backend of storing user information, adding a search bar to the stock page, and making the stock page load faster. Right now, our stocks page pulls info on the first stock, so we need to implement the search bar to be able to grab info on any stock.

8. Demo

https://drive.google.com/open?id=1mZ-6VMvsoZAAJGuEqvUDiwZ551NGeywC

9. Group Participation

Savannah Fischer - 30% Created an 'about' web page and the tutorial/recommendation page text

Kaitlyn Lee - 30% Worked on the outline of the application, the sign-in functionality, and added routing.

Clayton Williams - 20% Worked with implementing the News API

Brandon Horner - 20% Created the jargon glossary page