Stock Screener Web Application

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CSCI 250: Software Engineering

September 20th, 2017

Stock Screener Web Application Proposal

Introduction

A large part of stock trading is the research that goes into finding a 'good' stock to invest in—known as screening. A stock screener is a tool that is used by the investors and traders to filter stocks based on user-defined criteria. There are currently several free stock screeners already available. None of which we found will automatically take charts studies (ex. simple moving average), phase 1 & 2 scores, and sector performance to generate a list that meets all the requirements. For this project, we propose the development of a stock screener web application with that criteria. For simplicity, we will provide each criterion with their value.

Objectives

- To provide an easy to use application that produces a watch list effortlessly.
- Optimize time of creating watch list by pulling data from outside and bringing it into one application.
- Provide user with a new updated list for the watch list when requested.
- Provides access to screener anytime and anywhere by accessing this web application.
- Provide a web client interface.

Goals

- Design a nice user interface
- Generate an ordered list for each criterion that passes the requirement
- Have a working prototype that will be tested by sample customers.

Target Customers

- Students -- People of all ages who are interested in learning the topic.
- Traders/ Investors – Incorporates people of all ages with all different backgrounds. Particularly targets people who are actively trading.
- Educators who want a simple to use tool to teach students about stocks.

Value Proposition

This application fills the need of having a one-stop application that compiles a list with stocks that meet all user-defined criteria so that users can save time instead of having to manually do it. Our application will be valued and unique because it will strive to bring together all the features that other applications in the market may or may not have in a simple to use platform.

Application Features and Description

Requires user to have internet access to this web application. The user will request a list in real time each time regenerating an updated list. For this screener, there will be preset values for the following criteria:

- Simple Moving Average (SMA)
- Moving Average Convergence Divergence (MACD)
- Stochastic Indicator
- Volume
- Sector

In order to pull financial data for this project, we will be using Alpha Vantage. They provide an open source stock API. The application will filter out stocks that meet each criterion requirement each time adding or removing from the list.

SE Process

For this project, we will be using the agile approach. We feel that this would be the most appropriate process because this project has many components. Being able to constantly take a break to check up on my progress, determine what needs to be done next and set new goals allows for immediate feedback and will result in fewer defects in the final product.

Timeline

August 4th - September 20th:

- Idea phase: Stock Screener Web Application

September 20th - September 27th:

- Planning Phase
- Find more resources
- Map our logistics for project
- Requirements analysis

September 27th -- October 4th:

- Design / research
- Design wireframe for interface

October 4th - October 10th

- Research more on stock screeners. Review big ones and get ideas (ex. google finance, yahoo finance, etc.)
- Find more open source APIs

October 10th-November 26th:

- Implementation phase

- Implement Stock APIs to pull real-time data
- Go through each criteria and separately to find stocks that meet the requirement:
    - Simple Moving Average (SMA)
    - Moving Average Convergence Divergence (MACD)
    - Stochastic Indicator
    - Volume
    - Sector
- If (stock meets the three graphs) return
- From the above list, if it meets 3 of 5, return
- Generate list to print out and return to user
- Create interface using HTML/ CSS
- Add user interaction to webpage using JavaScript

November 26th – December 3rd:

- Begin maintenance phase
- Give updates
- Any improvements?
- Signs of defects? If yes, repair

December 3rd: Personal Project Deadline.

Tools and Resources

HTML/ CSS
JavaScript
Python
Alpha Vantage

Version

For version control on this project, we will be using Github. We have used this platform a few times and feel the most comfortable using it.

Challenges

The biggest challenge that we envision in developing this project will be to find enough open source financial data. A good stock screener encompasses a variety of criteria. Although the one we discovered, Alpha Vantage, has a nice list of criteria it does not include all of which we am looking for. Many Finance APIs have been deprecated or require users to have an account with at least $10,000. The main product challenges will be to create an effective algorithm for sorting through stocks, making sure the integration of the program and interface turns out okay, and that the database is secure and reliable.