

Project 2 Proposal

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Title: Long-term stock predictor - visualization utility for stock analysis

Background: I want to develop a method to determine any stock is worth for long-term investment. In project 2, I would like to build a data visualization utility to analyze the data.

Data source:

Daily Historical Stock Prices (1970 - 2018):

<https://www.kaggle.com/ehallmar/daily-historical-stock-prices-1970-2018>

Yahoo Finance: Nasdaq, S&P500

Finance news source: TBD

Database: PostgreSQL

Application: Full-stack dynamic web application using Flask. I will upload into Heroku.

Basic Tasks

- Database information selector: user can select information type to see the related information
- Basic Plot: Stock value vs. Date
 - Left and right axis
 - Plotting multiple stocks
 - Stock selector for plotting: shows selected stock list
 - Radio button for selecting to left or right axis
 - Zoom capability
 - Add markers
 - Add date selection arrow with mouse click
- Stock new retriever - A button to retrieve the stock news (source TBD) for selected date +/- 1 week.

Medium Tasks

- Data upload feature for user
- Plot: Normalized view
 - For selected date from Basic Plot, data will be normalized. For selected date, the stock value will be 100, then percent change will be calculated from 1 year before the selected date to 5 years after the selected date.
 - This will use only left axis

Advanced Tasks

- First order and second order change Plot
 - From 1 year before the selected date to the selected date, 1st derivative and 2nd derivative will be calculated.
 - First derivative will be plotted on left-axis and 2nd derivative will be plotted on right-axis.