**Project 2 Proposal**

By Daewon Kwon

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: PostgresSQL

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.