Nelson Rincon

Software Developer

Technologies Used

React

Redux

python

Tornado

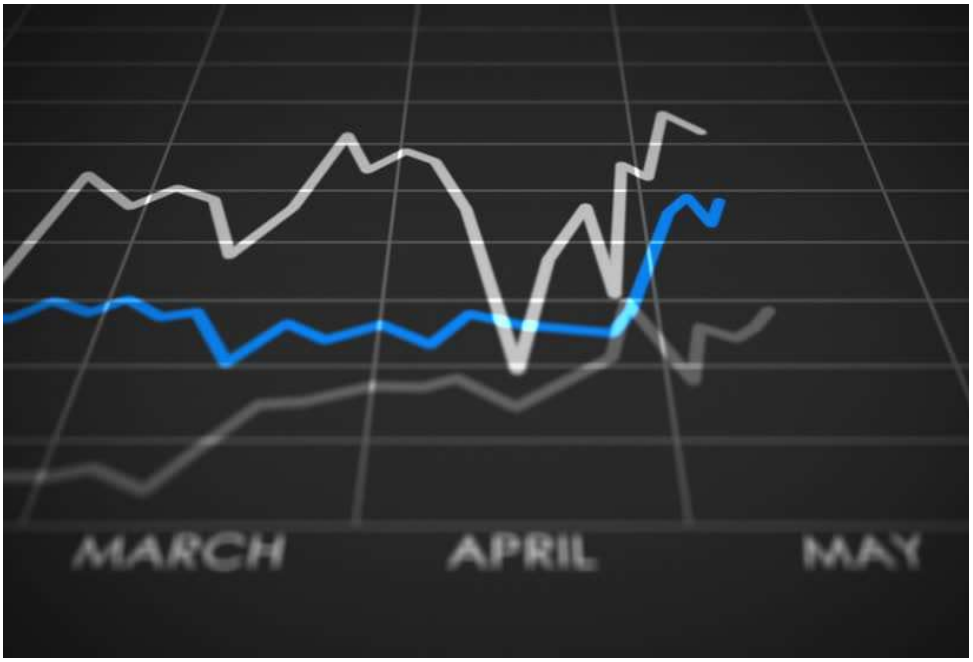
CSS

PostgreSQL

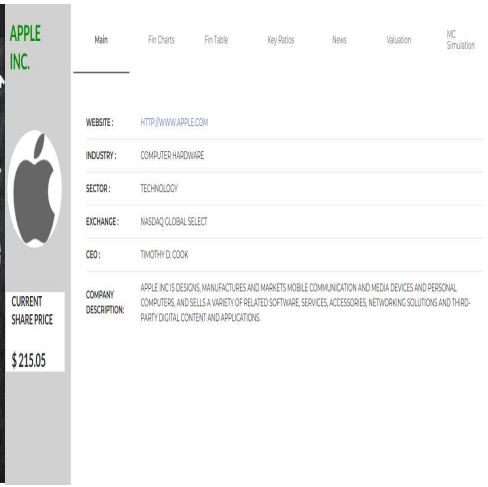
Tickerworth

tickerworth.herokuapp.com

Easy to use application that provides key financial information about the searched company and calculates its intrinsic values based on multiple valuation methods.



Input



Output

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Features

Some of the features integrated in the app as of Aug – 2018 are:

1) **Main company information: website, line of business, etc.**
2) **Key financial charts: total revenue, operating expenses, etc.**
3) **Key financials table: same as charts but different display.**
4) **Key ratios: P/E ratio, beta, ROA, ROE, etc.**
5) **Valuation: Dividend discount model | MonteCarlo Simulation**

Challenges

There were a few challenges:

1) **Getting tornado to work with React.**
2) **Integrating numpy and pandas into the MonteCarlo Simulation and the dividend discount model. For the dividend discount model, I used pandas.Dataframe pc_change method to calculate the percent change for the historical quarterly dividends. I could have calculated this myself but wanted to keep learning and using pandas.**
3) **Getting plotly.js to render the points sent from my backend to display the MonteCarlo Simulation to make it a more dynamic chart instead of rendering a png image of the matplotlib library. Integrating the MonteCarlo Simulation in the app.**
4) **Get React to render over 20 API calls at once and cache it to my Postgresql database, so when someone else searches the same company, it will grab all the information from the database.**
5) **Getting the autocomplete to work on React and cache the original company list to session storage for faster autocomplete.**
6) **Have the backend call the API to obtain the most recent companies list daily and cache the new list to the database.**
7) **There were some other challenges but the above were the main ones.**

API Integration

The main API integrated in the application was IEX. This API provided me with most of the numbers I needed to create my calculations and display the data. The second API used was Quandl. This API gives me the most recent 10-year treasury rate. I needed this to calculate the CAPM. See below for more information.

Valuation Methodologies

Dividend Discount Model | MonteCarlo Simulation

To calculate the dividend discount model, there were a few things I needed. First, I needed to collect the necessary information from the APIs. So, I used IEX for the beta, the quarterly dividends for the past five years, and the current dividend. I grabbed the most current treasury rate from Quandl, which updates it daily. Unfortunately, I could not find an API that returned the expected market return for several indexes. So, I used a static expected market return here. I used 7.3%. That was the total annual return for the S&P 500 for the last five years. I'm hoping to be able to modify this in the future.