Stock Trading and Market Analysis Project Checkpoint

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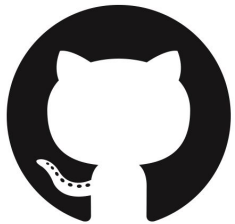
Introduction

We are going to present what we have gotten done so far and what we plan do in the future for the rest of the project.

- Dataset and Tools
- Previous Work
- Trello
- Correlated Stocks
- Proposed Work
- Evaluation
- Milestones

Dataset and Tools

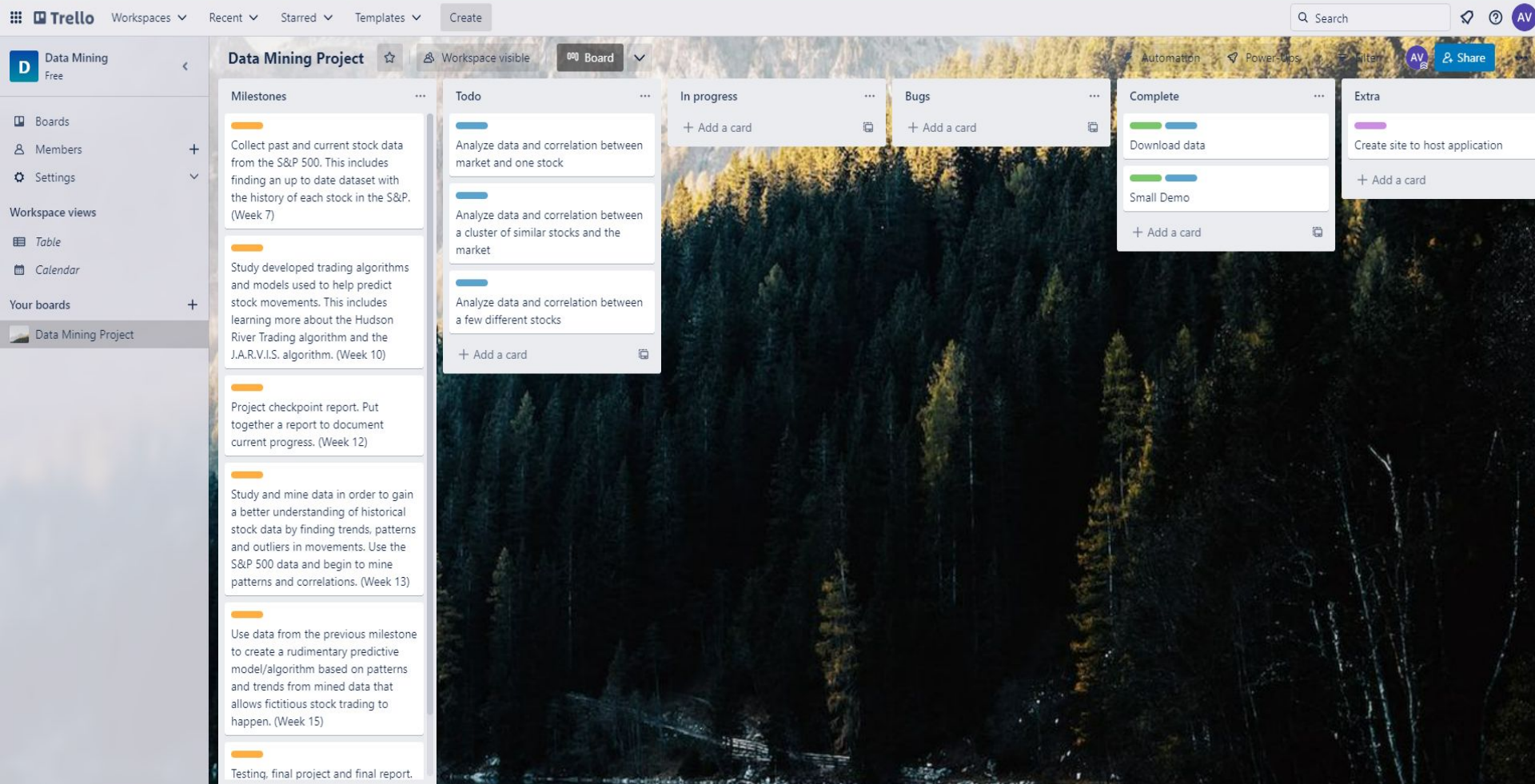
- S&P 500 companies
  - 2013 to 2018 (5 years)
  - date, open, high, low, close, volume, Name
  - 2013-02-08, 67.7142, 68.4014, 66.8928, 67.8542, 158168416, AAPL
- Python
  - matplotlib
  - numpy
  - pandas
  - seaborn
- GitHub



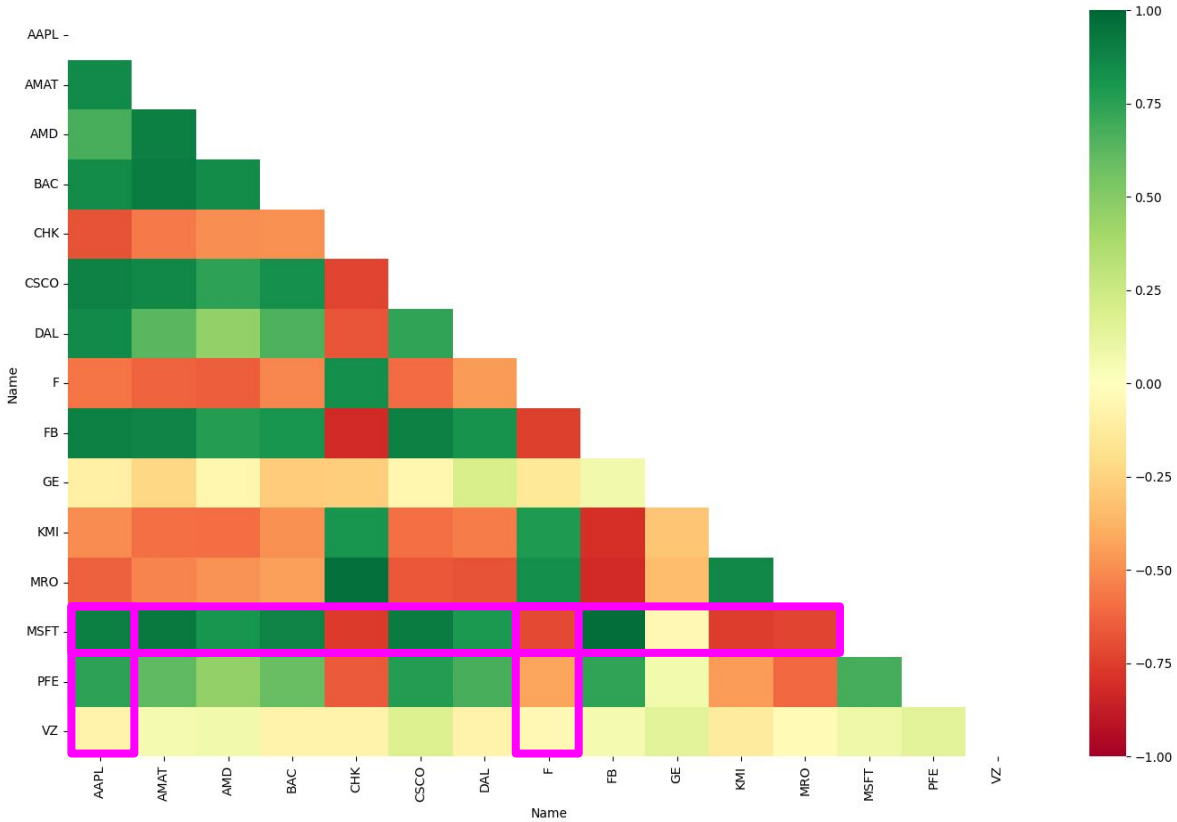
Previous Work

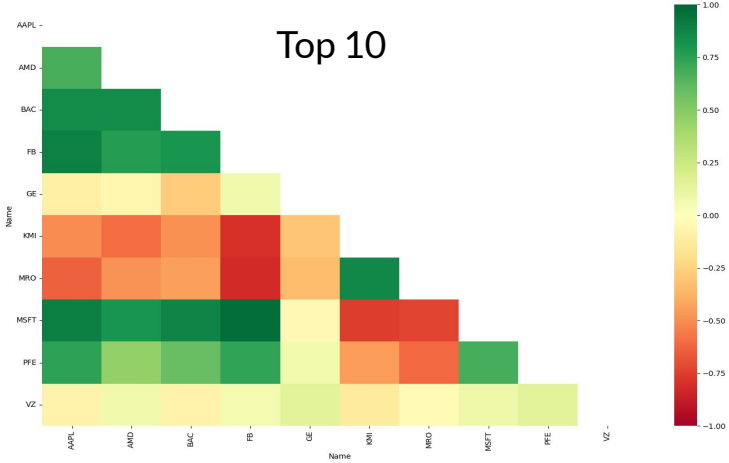
- Studied other trading algorithms
  - We spent much of the early time learning about algorithmic trading.
- Find and clean up dataset
  - For our dataset, we are using stocks on the S&P 500 from the years 2013 to 2018.
  - This dataset is provided by Kaggle, an open source dataset platform
- Find correlated stocks
  - Recently, we have gathered information about the stocks' correlation to each other.
- Set up Project Management
  - Using Trello boards we have a way to manage this project and divide work between the three of us
- Set up Project Sharing
  - Using github we have version control for our project

Trello Board



Correlated Stocks




Top 10
AAPL
AMD
BAC
FB
GE
KMI
MRO
MSFT
PFE
VZ
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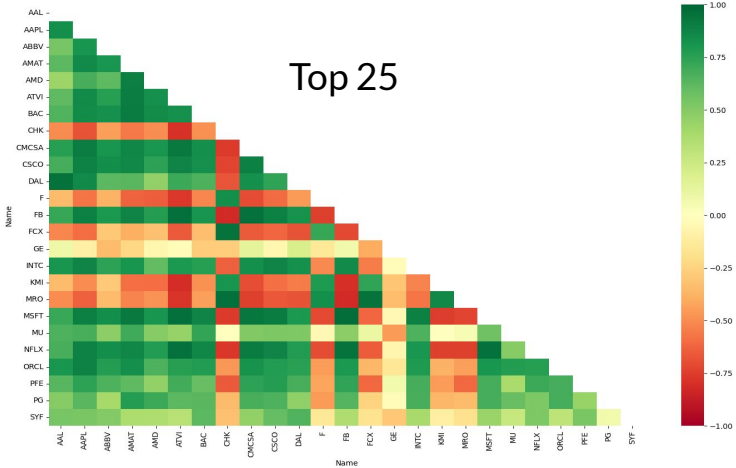
−1.00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AAPL
ABBV
AMAT
AMD
ATVI
BAC
CHK
CMCSA
CSCO
DAL
F
FB
FCX
GE
INTC
KMI
MRO
MSFT
MU
NFLX
ORCL
PFE
PG
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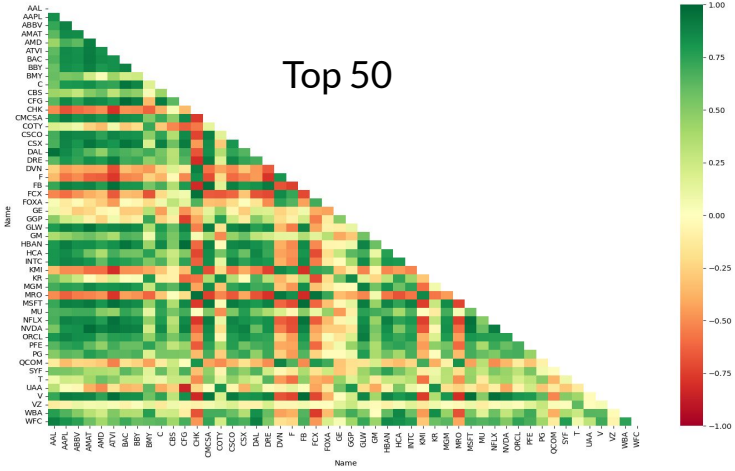
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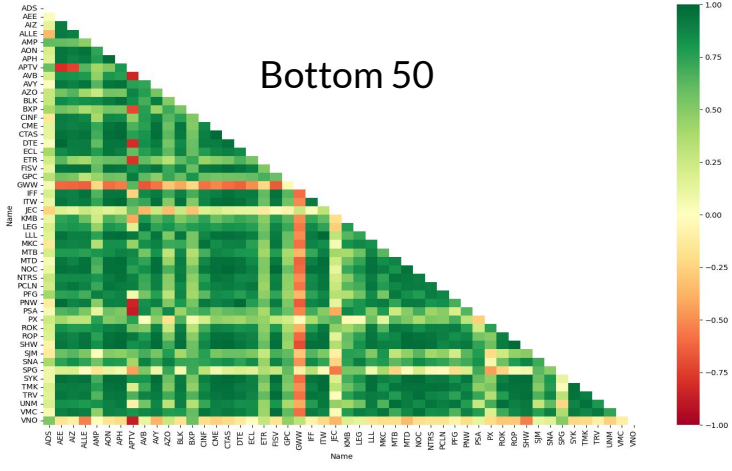
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Proposed/Future Work

- Use correlation data to build predictive models
  - Now that we have found what is correlated, we can start analyzing it and building predictive models based on the result
  - We would also like to cluster some correlated stocks with one another
- Grow our knowledge on the market
  - We hope to see if our analysis of data from 2013-2018 will grant an understanding of factors that affect the market the most, especially when it comes to crashes
- Rudimentary algorithmic trading
  - We are working on a trading algorithm that will be based on the data from this 2013-2018 dataset. We hope it will factor the most important discoveries we have made about the data and find some success with trading on the market.
  - We also hope to host this application on a simple website. Options including Heroku or a more complex website architecture
  - We hope to test this algorithm on later data so we are not only using the dataset we currently have

Evaluation

- Work can be evaluated by observing if our algorithm successfully predicts the actual change in the market.
- Metrics for evaluation will be the accuracy or error of our predictions, especially when compared to that of other prediction algorithms.
- We can compare our work with other prediction models and algorithms such as J.A.R.V.I.S and Hudson River Trading along with open source projects
- We can compare our work with the standard trading trends in the market
- We can compare our work with random guesswork

Milestones

- Study other trading algorithms and models (Week 7) COMPLETED
- Collect past and current stock data (Week 10) COMPLETED
- Find correlation between the top S&P 500 stocks COMPLETED
- Project Checkpoint Report (Week 12) (STARTED)
- Study and mine data for patterns, trends, outliers, etc. (Week 13) (STARTED)
- Create a predictive model/algorithm based off patterns and trends from mined data (Week 14)
- Create/use a site to host the application (Week 15)
- Final Project Report (Week 16)

We are on schedule!

Questions?