

Sprint 6: Stock Market Analytics and Recommendation



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This Sprint Objectives

- Provide individual stock recommendation using the exponential moving average (EMA) and the moving average convergence divergence (MACD) indicators.
- Test searching a stock and displaying the correct graph
- Add functionality of Stock Portfolio (link User and Stock Database tables to pull a User's Stocks)

Risks & Challenges

- Being able to properly connect the two database tables, Users and Ticker, to pull the logged in user's stocks
- Properly displaying the user's stocks on the web app

Mitigation Plan

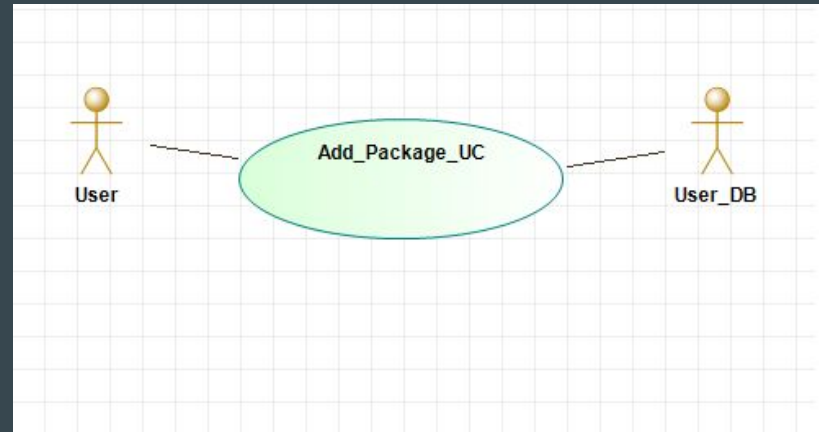
- The first Challenge was resolved, and we were able to create a many to many relationship in Django with the Users and Ticker tables
- We ran into problems with displaying the information properly due to a django error, but we were able to successfully query and pull the data

Initial Recommendation System

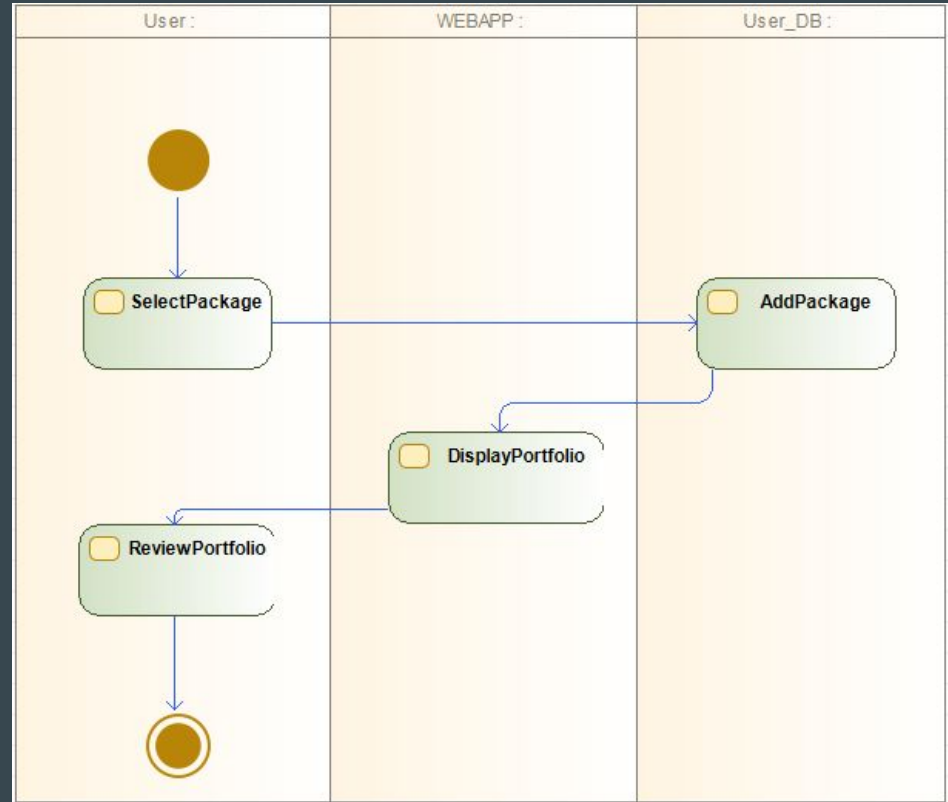
- The moving average convergence divergence (MACD) indicator is calculated from the difference between the 12-period EMA and the 26-period EMA.
- Recommendation is given based on if the MACD value crosses above (to buy) or below (to sell) the signal line.

Use Case - Add Package

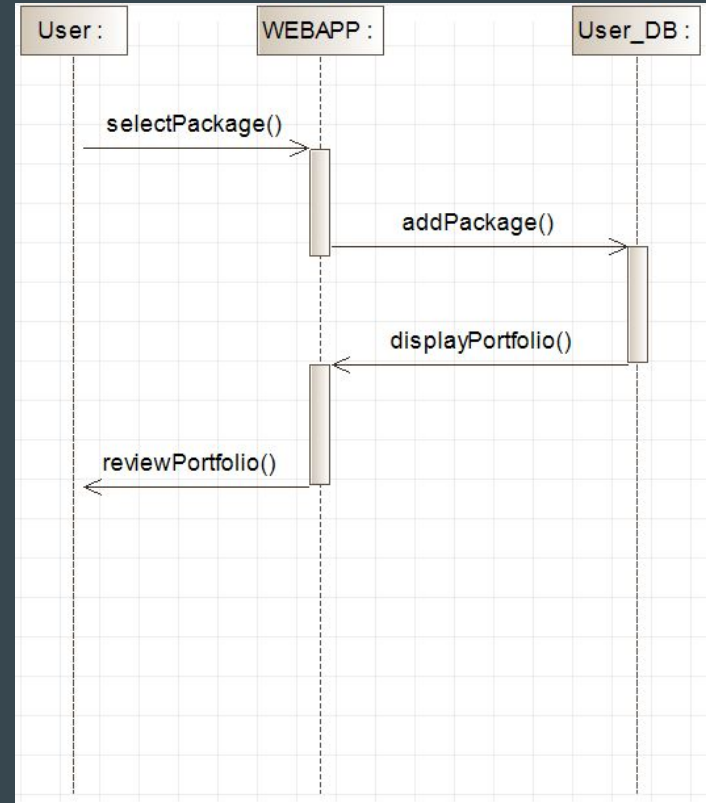
- Add Package:
 - **Preconditions:** User requires an activated account
 - **Success Guarantee (Postconditions):** User adds chosen package to their account
 - **Main Success Scenario:**
 1. User logs into an activated account
 2. User reviews and selects from one of our packages we offer: starter, deluxe, or ultimate.
 3. User is redirected to the portfolio page
 4. User gets notice that the package was added to their account and gives description of what the package offers you.
 5. Account is limited to however many tickers the package allows
 - **Extensions:**
 1. Page not loaded properly
 2. Package failed to add to account



Activity Diagram - Add Package



Sequence Diagram - Add Package

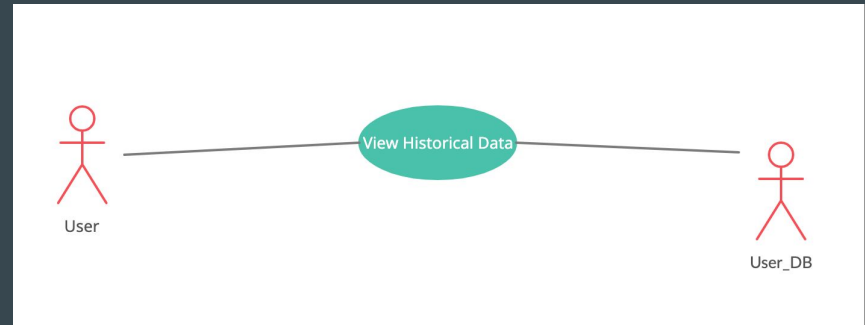


Next Sprint Objectives

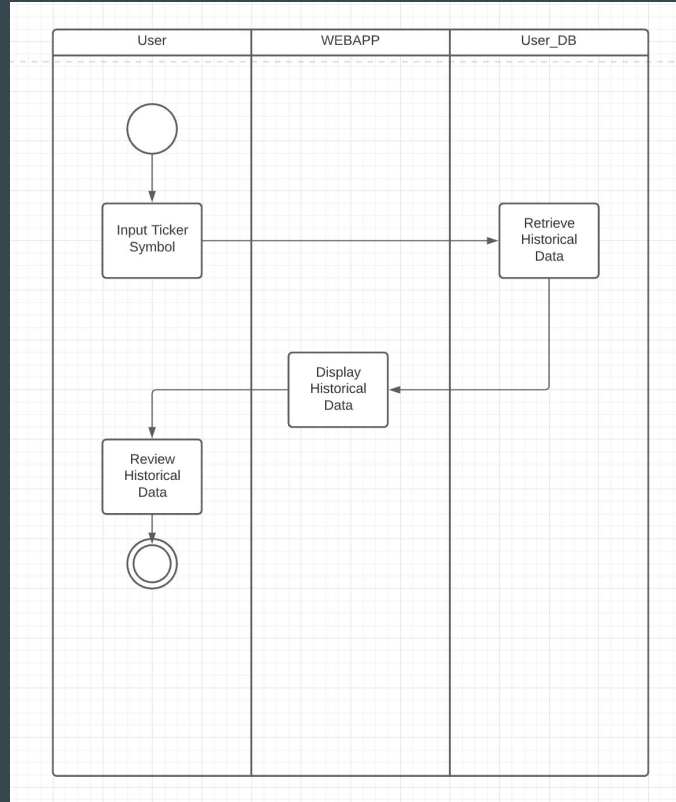
- Roll over implementing graph and buy/sell option on portfolio page
- Provide sector-based recommendation for investment.
- Provide analytics on historic return for following recommendations of the site.
- Test individual stock recommendation.

Use Case - Historical Data of Recommendation System

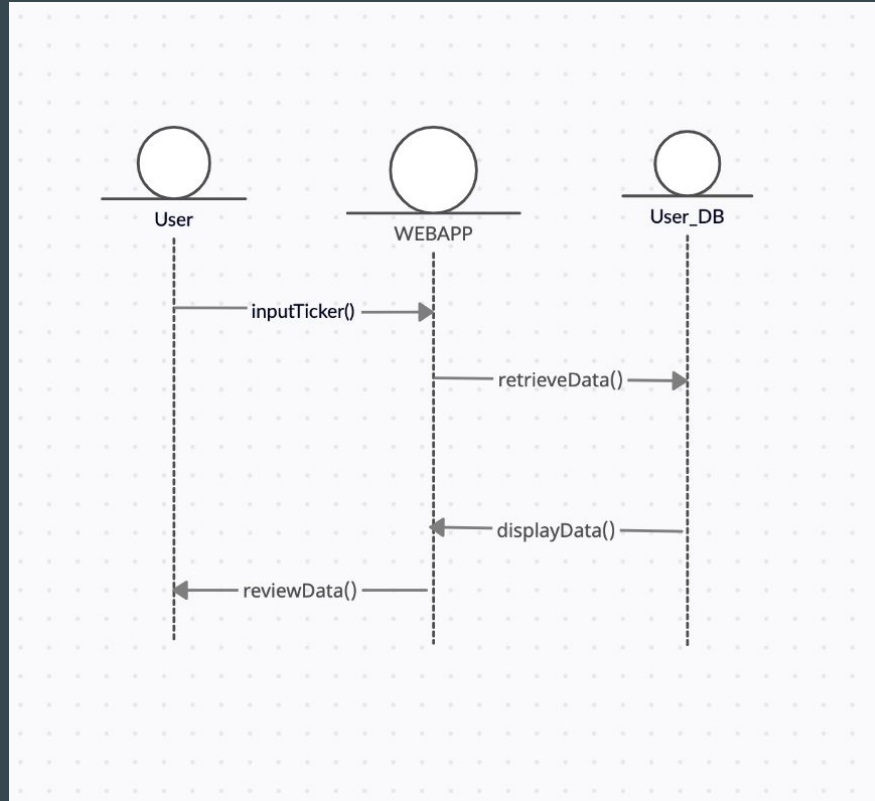
- Historical Data:
 - **Preconditions:** User requires an activated account
 - **Success Guarantee (Postconditions):** User is able to see Historical Data of the Recommendation System for an inputted ticker
 - **Main Success Scenario:**
 1. User logs into an activated account
 2. User types in a valid stock ticker in the search bar
 3. User is redirected to a page where they can view historical data of the ticker they inputted
 - **Extensions:**
 1. Page not loaded properly
 2. Ticker inputted is not a valid stock ticker



Activity Diagram - Historical Data of Recommendation System



Sequence Diagram - Historical Data of Recommendation System



Mockup/Design

- Sector Bases
Recommendations

StockZ

[Home](#)
[Portfolio](#)
[Profile Settings](#)
[Sector Info](#)
[Logout](#)

Search

U.S. Sectors & Industries Performance

Sector	Last % Change	1-Year % Change
Communication Services	+1.45%	+26.89%
Consumer Discretionary	+0.78%	+29.40%
Consumer Staples	-0.73%	+1.87%
Energy	-1.76%	-4.67%
Financials	-1.03%	+10.83%
Health Care	-0.06%	+13.56%
Industrials	0.00%	+13.07%
Info Technology	+1.85%	+36.49%
Materials	-0.29%	+26.98%
Real Estate	-0.47%	-7.86%
Utilities	-0.19%	-14.39%

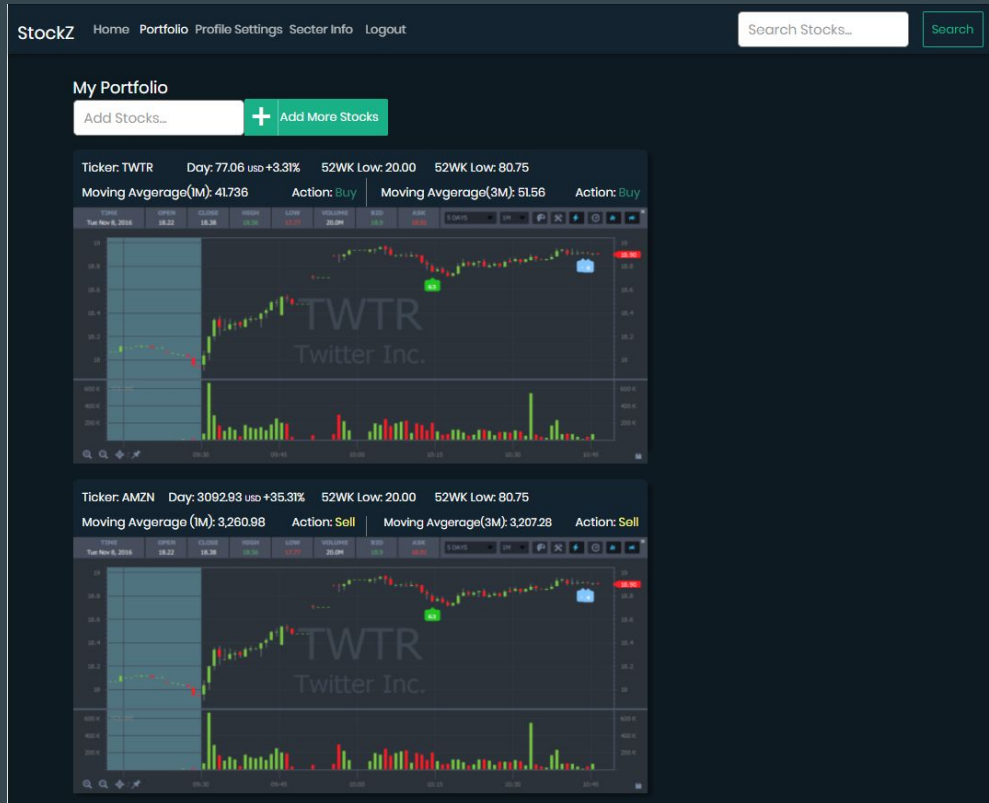
Select a Sector for Recommendations:

Communication Services

Sector	Price (\$)	12-Month P/E Ratio	Moving Avg (1M)	Moving Avg (3M)	Exchange
eBay Inc. (EBAY)	62.80	8.1	59.00	55.05	NASDAQ
Qurate Retail Inc. (QRTEA)	12.83	8.0	12.46	10.62	NASDAQ
Etsy Inc. (ETSY)	220.82	8.8	211.02	178.61	NASDAQ

Mockup/Design

- Portfolio Buy/Sell Recommendations



Project Plan (Amended)

3/2 - 3/15 (2 Weeks) Sprint 5 (Next)	3/16 - 3/29 (2 Weeks) Sprint 6	3/30 - 4/5 (1 Week) Sprint 7	4/6 - 4/14 (1 Week) Sprint 8	4/15 - 4/21 (1 Week) Sprint 9
<ul style="list-style-type: none">- Provide sector-based recommendation for investment- Provide analytics on historic return for following recommendations of the site.- New Test case development	<ul style="list-style-type: none">- Maximize efficiency of recommendations and analyses- New Test case development	<p>Clean up any remaining bugs</p> <p>Finish any stories that rolled over</p>	<p>Deploy code to server</p>	<p>Clean up any remaining bugs</p> <p>Finish any stories that rolled over</p>

Demo