Web App: Stock Metrics

Team: Error404

Team Members: Jaynish Shah, Monark Modi, Yanjie Gao, Wenbo Xie, Bin Yu

GitHub: https://github.com/monarkmodi/Stock-Metrics

Overview: Our web application is a cloud based stock analysis tool for the users which helps a user manage their stocks and keep a track on their net profit/loss. It will use machine learning techniques to analyze existing metrics (technical indicators like Simple moving average and Relative Strength Index) and try to predict the future value of the stock. It fetches from a list of 8000 stocks across Nasdaq, NYSE exchanges and performs support vector regression based machine learning on historical values like open, close, high, low and volume to forecast the next day price change. The web application also works as a simple watch list and portfolio application to keep an eye on user's stocks and compare performances. It will also update the prices in real time based on when the stock market opens and closes.

Design Overview: For our web application we have defined four models (Stock, User, StockMetrics, and Portfolio). Stock stores all the details about a stock. Information such as its title, stock ID, buy price, sell price and volume. User contains all the details about a user such as their name, DOB, email, password and their account balance. Whereas portfolio stores information about each user's stock account such as their portfolio value, buying power, withdrawable cash, cash balance and invested funds. All the models are related to each other in the sense that each user can have multiple stocks but just one portfolio and each portfolio can contain multiple stocks.

Problems/Successes: To improve the collaboration and implementation on the next project submission we will have to start working on the project early and not 2-3 days before the project is due. And we can try to meet outside class to have better communication among team members and get the project done faster. Meanwhile, choosing the proper field types and fields name for data modeling is an important step which need to be cautious. Otherwise, it might create some conflicts that will directly influence the result of database migration. We had a difficulty implementing the views and populating the UI with the mock data. Another problem we faced was during the creation of view functions to retrieve the values like prices, titles etc due to our less familiarity with Django but we tried to solve the issue and created templates to render the UI.

Individual Write Up

Jaynish Shah: So far, I made one of the UI designs implementing some basic CSS and then I worked on most of the write-up parts in both the team projects (1 & 2). For the second project during in class, I discussed with the team different models and data types we could implement and couple ideas on the data model overview. I discussed the relationship(one-to-one, one-to-many, etc) that different models have in data model overview. I even populated the admin website with some mock data. I worked on the views and templates page and created a dynamic content page which represented basic information such as the number of stocks in our database, the number of users or the number of stocks containing "GOOG".
Percent work: **32.5%**

Monark Modi: In the first project, I designed one of the data models and its UI page. I also merged all of the pages created by different teammates to provide a consistent UI design and worked a bit on the write up of it. For the second project, I discussed the data models that our project will contain and the links between those models. Secondly, I implemented 2 of the 4 data models using Django Object Relational Mapping. Thirdly, I created the view functions and consumed them to create all the templates that rendered the UI. Percent work: **32.5%**

Yanjie Gao: For project 1, I finished some pages of the UI design with CSS and HTML. For project 2, initially, I finished the Part 0 which configures the environment and starts the Django project. Then, I designed the data model diagram and implemented most of data models using Django's Object Relational Mapping with Python. Next, I performed the database migrations and registered these data models for the sake of making them accessible in the Django admin site. Finally, I created a superuser account with username and password, and finished a few part of the write-up. Meanwhile, I also discussed with the team about the implementation of templates and views in part 2, and figured out how to display the field values in the view.
Percent work: **25%**

Wenbo Xie: For the first project, I made the the registration page and its CSS file and worked on individual write up. I also discussed the basic idea of models with teammates. For the second project, I made a little change for views.py. In the views.py. Percent work: **5%**

Bin Yu: For project 1, I did the index file of HTML with CSS file and it is to show the pictures of stock that I get from the Internet. For project 2, I feel bad because I almost did nothing for the team. The work just get started at the night before the due time, and I have a course at that night and just came back home on 10:00. The most of work has been done and I do not even know what else can I do. I will do more work for the next team project and do it early.
Percent: **5%**