EE / CprE / SE 491 – sdmay19-07

Real Estate Portfolio Optimization

Week 10 Report

Monday, November 12 – Sunday, November 25

Client: Principal

Faculty Advisor: Chinmay Hegde

Team Members

Blake Roberts - Project Manager / Backend
Colton Goode - Meeting Scribe / Backend
Kevin Johnson - Quality Control / Frontend
Leelabari Fulbel - Meeting Facilitator / Frontend
Nickolas Moeller - Report Manager / Backend

Weekly Summary

We combined two weeks into one status report as the University had Thanksgiving break.

The backend team focused on user data manipulation. To start, database interface models were created to allow easy database CRUD operations on the Portfolio and Asset models. In addition to the database interface models, HTTP CRUD methods (REST API) was formed by use of the database interface models. This resulted in a complete, persistent, user data model. The team also add endpoints to the backend flask server so that the frontend may interface with the CRUD on the backend.

The frontend team worked on the issue of securely doing data visualization Research use of Plotly offline.Kevin did more researched use of PowerBI embedded. Leelabari created an example app that showed Tabs for the use of visualizing “pages” .

Lastly, the team also focused on doing code reviews to ensure that everything is cleaned up before the first semester comes to an end..

Past Week Accomplishments

- Project Plan and Design Documents - Blake, Colton, Leelabari, Nick
    - The team continued to work on improving our Design Document V2 and Project Plan V3 for the project
- Code Reviews - Blake, Colton, Leelabari, Nick
    - We had multiple merge requests at once in our repository, some of them being dependant on one another. The team took time to review all of the changes, and provide feedback on eachothers code.
- CRUD Operations and Endpoints - Blake, Colton

    - Further tested and corrected Create, Read, Update and Delete functions with the backend and database
    - Created server endpoints so that the frontend may interact with the backend CRUD operations
- Database functionality- Blake, Nick
    - Got rid of our api and translated the functions to our database. Updated database to better suit our needs.
- Leelabari fixed some issues with a merge request for the code. He also worked on getting the ability to upload CSV files.
- Continued working on implementing/researching Power BI - Kevin
    - Need account info from Principal (they have a working account and have shown us how to use Power BI, they will be sending us this information in a report soon)
    - Real-time streaming of data will be possible within our Dash app.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Blake Roberts	Developed database interface models (Asset and portfolio models). Looked into modularization of covariance matrix calculation.	6	54
Colton Goode	Reviewed code merge requests, started work on the CRUD endpoints for the server	6	56
Kevin Johnson	Attempted to create a Power BI pro account, ran into authentication issues. Continued researching Power BI embedding methods.	5	52
Leelabari Fulbel	Fixed code errors for a merge request, researched using dash offline	5	53
Nickolas Moeller	Got rid of our API and translated everything to our Database, code review	6	54

Pending Issues

- Testing Database functions
- The frontend team still hasn't found a secure alternative to Plotly.

Plans for Coming Week

- The frontend team will create endpoint to get efficiency frontier data points for market and portfolio data.
- The final presentation in front of the panel is coming up soon. The whole team will prepare for the class presentation.
    - The slides will be created for the presentation. The team will ensure each requirement is met. They will be practiced before the presentation day.
    - Questions we think we may encounter will be brainstormed.
    - The team website is mostly done. The final Project Plan V3, Design Document V2, and final weekly status report need to be uploaded when they are completed.
- Code Reviews
    - Continue reviewing our current changes, and revise the code we have to make it cleaner before the semester ends. This is to ensure that we are at a good starting point next semester.

RASIC

R: Responsible
- The team member primarily responsible for the task's completion.

A: Approve
- The team member responsible for approving the task's completion.

S: Supporting
- The team member(s) who support the task's completion.

I: Informed
- The Principal team member(s) who are informed of decisions, progress, and completion associated with the task.

C: Consulted
- The Principal team member(s) who serve as Subject Matter Experts or key stakeholders for the task or project as a whole.

Past Week RASIC:

11/12/2018										
	Team Members					Principal Team				
Task	Blake	Cole	Kevin	Lee	Nick	Ben	Jonathan Ling	Jonathan Frank	Action	Notes
Design Document V2	R	R	R	R	R					This is an ISU class requirement due Friday, Nov. 16.
Add portfolio CRUD server endpoints		R								
Finalize decision on software we will use for data visualization			R	S		I				
Update markowitz to use new data format	R									
Create Tab Format for the showing of "pages"			S	R						
Create Table for expected returns changes			R	S						

11/19/2018								
	Team Members					Principal Team		
Task	Blake	Cole	Kevin	Lee	Nick	Ben	Jonathan Ling	Jonathan Frank
Add portfolio CRUD server endpoints	S	R			S			
Complete backend portfolio and asset model API	R				S			
delete "api.py" and make "markowitz.py" use "database.py"	S				R			
Test Dash Offline versus PowerBI (still need pro account for testing)			R	R				
Allow uploading CSV			S	R				

Next Week RASIC:

11/25/2018										
	Team Members					Principal Team				
Task	Blake	Cole	Kevin	Lee	Nick	Ben	Jonathan Ling	Jonathan Frank	Action	Notes
Create endpoint to get efficiency frontier data for a portfolio	R				S					Current efficiency frontier data returned by endpoint are market data not correlated w/ specific portfolio assets
Test and correct endpoint functionality with the server		R			S					Several merge requests are sitting in review.
Generate proof of Concept with PowerBI Embedded			R	S		I	I			
Make functionality to upload CSVs			S	R						
Create a class presentation for the following week	R	R	R	R	R					
Code reviews	R	R	R	R	R					