

EE / CprE / SE 491 – sdmay19-07

Real Estate Portfolio Optimization

Week 6 Report

Monday, October 15 – Sunday, October 21

Client: Principal

Faculty Advisor: Chinmay Hegde

Team Members

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

Weekly Summary

We met with Principal to show our frontend mockups and start preparing for our midpoint presentation with the stakeholders. We had an in-depth discussion on our current portfolio optimization implementation. Specifically our client (As the data science experts) helped us identify issues with our algorithm and helped us go in the right direction. We continued to revise mockups to our clients needs and wants. Lastly, the team started on the next draft of our project plan.

Past Week Accomplishments

- Meeting with client - Everyone
- Research into portfolio optimization and modern portfolio theory (MPT) - Everyone
- Made data migration and api python scripts for test data - Blake
- Finished screen flowchart based on client requirements - Kevin
- Created Mockups for the frontend - Lee and Kevin
- Team Website - Nick
- Project Plan - Everyone
- Improvement Plan - Everyone

Individual Contributions

| Team Member | Contribution | Weekly Hours | Total Hours |
|------------------|---|--------------|-------------|
| Blake Roberts | Adjust Markowitz implementation, Project Plan | 6 | 30 |
| Colton Goode | Efficient frontier generation, testing current algorithms, worked on design document, improvement plan | 7 | 30 |
| Kevin Johnson | Finished screen flowchart and UI mockups Did more research on Python and Dash Worked on improvement plan, project plan, and midpoint presentation | 7 | 29 |
| Leelabari Fulbel | Researched Dash. Reworked UI mockups. Worked on improvement plan, project plan, and midpoint presentation | 8 | 28 |
| Nickolas Moeller | Team Website, Project Plan, Improvement Plan, Test Algorithms | 7 | 30 |

Pending Issues

- Cvxpy library seems to have issues with installation on Windows
- Efficient frontier generation still a work in progress, currently now generating correct graphs
- Numbers don't seem reasonable for the optimization, in particular the covariance and weights are off

Plans for Coming Week

- Continue research into MPT (Specifically Markowitz) - Everyone
- Finalize UI requirements and constraints
- Midpoint presentation
- Dash prototype
- Revise and extend Markowitz implementation
- Architecture block diagram w/ Dash
- Make a decision on FE implementation

RASIC

Our client desires weekly RASIC tables to be submitted every Monday detailing the tasks to be completed and to keep which team members are involved in each task. It also records which member at Principal Financial is (if they are) directly involved with a particular task or not.

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.

This Weeks RASIC:

| 10/15/2018 | | | | | | | | |
|--|--------------|------|-------|-----|------|----------------|---------------|----------------|
| | Team Members | | | | | Principal Team | | |
| Task | Blake | Cole | Kevin | Lee | Nick | Ben | Jonathan Ling | Jonathan Frank |
| Gather non-functional requirements | R | | S | | | | S | |
| Mockup Creation | | | R | R | | | | |
| Correct current Markowitz implementation | | R | S | | R | | | |
| Creation of a Frontend POC | | | R | R | | | | |
| | | | | | | | | |

Next Weeks RASIC:

| 10/22/2018 | | | | | | | | |
|--|--------------|------|-------|-----|------|----------------|---------------|----------------|
| | Team Members | | | | | Principal Team | | |
| Task | Blake | Cole | Kevin | Lee | Nick | Ben | Jonathan Ling | Jonathan Frank |
| Make Dash prototype | | | S | R | | | S | |
| Revise and extend Markowitz implementation | R | | | | S | | | |
| Architecture Block Diagram w/ Dash | R | | | | | | | |
| Make a Decision on FE implementation | R | R | R | R | R | | | |