

sdmay19-06: Quantitative Research Modeling Library

Week 3 Report

February 4 - February 10

Client: Joseph Byrum

Advisor: Srikanta Tirthapura

Team MembersJosiah Anderson — *Meeting Facilitator*Doh Yun Kim — *Scribe*Gabriel Klein — *Report Manager*Drake Mossman — *Communication Manager*Nathan Schaffer — *Overseer*Jacob Richards — *Quality Assurance Manager*

Summary of Progress this Report

This week each subteam continued to work on their respective parts of the pipeline as we work towards our goal of having prototypes complete by the beginning of March. The dashboards team had a meeting and worked on developing database schemas that will suit our client's needs. The modeling team worked on planning their approach and began coding some of the model training. The factor policy team also had a meeting, came up with a prototype architecture, and started working on the optimization code. In addition to all of this, we also spent some time on investigating asynchronous database queries, although no definite conclusions were reached yet.

Past Week Accomplishments

Josiah Anderson

- Created new tables in the database to store output data for the first set of dashboards
- Met with Josh to go over specifics of his dashboards and how they interact with the pipeline

Doh Yun Kim

- Got basic idea of modeling step planned out
- Worked on training portion of modeling class

Gabriel Klein

- Fixed code to use new database password
- Investigated using psycopg2 to make database queries asynchronously
- Planned out an initial roadmap for the factor aggregation/modeling portion

Drake Mossman

- Began Optimization Coding
- Discussed Factor Optimization with Fikri
- Drafted Class Architecture

Jacob Richards

- Talked with Josh and Josiah to discuss database
- Installed and looked at Microsoft Power BI
- Reviewed Inputs / Outputs for dashboards
- Connected and played with new Database Schema

Nathan Schaffer:

- Factor Optimization meeting with Fikri
 - Started coding Optimization step
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Pending Issues

The CI problems continue to prevent us from implementing tests. Jacob did not have time to work on it this week and will hopefully be able to make progress on it soon. Some time was spent on investigating asynchronous database queries, but the code testing the idea hasn't yet been completed. We hope that this could help speed up the factor portfolio aggregation stage, but we will be putting the idea aside for the time being while we focus on prototyping the whole pipeline.

Plans for Upcoming Reporting Period

Josiah Anderson

- Build out the remaining tables for the first section of the pipeline
- Play with building views on the database
- Properly populate the tables with factor portfolio data

Doh Yun Kim

- Meet with Vishnu to get feedback on modeling step
- Get inputs and outputs figured out

Gabriel Klein

- Meet with Vishnu to discuss our plans for modeling
- Solidify inputs and outputs
- Revise factor portfolio aggregation code to match our expected modeling input

Drake Mossman

- Investigate Abstract Base Classes in Python
- Code Optimization Prototype V1
- Solidify Understanding of Modeling/Optimization Interface

Jacob Richards

- Create needed tables for Database
- Ensure the Factor_Portfolios code updates the tables

Nathan Schaffer:

- Continue coding optimization step
- Look over principal documents to better understand optimization step
- Research abstract base classes in python

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Josiah Anderson	DB testing, table creation	8	102.5
Doh Yun Kim	Train Model, Planned Design	8	90.5
Gabriel Klein	DB password, Async Queries, Modeling Roadmap	7	104
Drake Mossman	Planning Optimization Prototype V1	7.25	103.25
Nathan Schaffer	Planning Optimization Prototype V1	7	80
Jacob Richards	Database Module Storage progress	7	84.5