

sdmay19-06: Quantitative Research Modeling Library

Week 5 Report

February 18 - February 24

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 our team dived into making progress on all different areas of the project to complete our first prototype of the pipeline. We completed our prototype for the main data object being passed around within the code, which makes it much easier for all parts of the pipeline to agree on the way information is being stored. We also revised our modeling code to incorporate the new changes this object presented. The optimization team was able to begin coding their part of the pipeline, and the dashboards team worked on revising their tables and schemas to fit with our current expectations. We are still looking into views to see if they will be useful for the project. Finally we had some big picture discussions as a team for how the data in the project should be stored and transferred between parts and nailed down our choice of implementation for the prototype.

Past Week Accomplishments

Josiah Anderson

- Rebuilt the factor_portfolio table to better represent the expected data
- Worked on populating the table from the Factor_Portfolios.py

Doh Yun Kim

- Revised model class to append results to existing factor portfolios
- Meet with optimization group to check architecture
- Revised model class based on other small changes made in architecture

Gabriel Klein

- Reviewed client's aggregation examples to create a comprehensive document of factor portfolio aggregation
- Revised FactorPortfolio class to contain all necessary information for the aggregation portion of the pipeline
 - Renamed and refactored parameters for better ease of use and understanding
- Refactored aggregation test code and relevant classes to work with the new data

Drake Mossman

- Had discussions to unify architecture between subteams
- Started coding prototype for optimization step

- Planning for diagnostic table storage

Jacob Richards

- Researched DB views
- Tried creating views for factor_snapshot and factor_dataset
 - Created temporary view for testing
 - Ran into issues creating views from factor_portfolio table
- Reviewed changes to factor_portfolio.py

Nathan Schaffer:

- Reviewed optimization step documents from Principal
 - Created a package containing factor portfolio code to help with testing
 - Assisted with creation of tables
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Pending Issues

The only pending issue we have from this period is that we are getting some strange write-access errors when trying to use newly created tables from a script on our server. We will discuss this with our client during our upcoming meeting.

Plans for Upcoming Reporting Period

Josiah Anderson

- Turn Drake's mock-up schema into a table on the database
- Solve issues writing to the database
- Work with Gabe/DK to make a table to represent the modeling data

Doh Yun Kim

- Finish prototype of model class for meeting next week
- Add other test models

Gabriel Klein

- Work with other team members to continue to revise the FactorPortfolio class as needed
- Finish a working prototype for the factor portfolio aggregation portion of the pipeline from start to finish
- Write tests for the previous code

Drake Mossman

- Finish prototype of Factor Policy creation
- Meet Fikri to verify prototypes
- Finalize diagnostic table schema for factor policies

Jacob Richards

- Finish the DB views to correctly display the correct information
- Help work on filling in DB tables with factor portfolios

Nathan Schaffer:

- Continue to work on optimization prototype
- Help with packaging and testing code where needed

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Josiah Anderson	Factor_portfolio, populating the db	12	122.5
Doh Yun Kim	Revise Model class, discuss architecture, write basic test	7	106
Gabriel Klein	Factor Portfolio Aggregation documentation, FactorPortfolios revision	10	122
Drake Mossman	Optimization prototype, architectural discussions, diagnostic table considerations	9.5	118.75
Nathan Schaffer	Packaging for testing, review of optimization step docs	8	94
Jacob Richards	Database views, reviewed factor_portfolio changes	7.5	100.25