

sdmay19-06: Quantitative Research Modeling Library

Week 6 Report

February 25 - March 3

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 was a success for our team as we completed reasonable prototypes for each of the four sections of the pipeline individually on schedule. The factor portfolio aggregation has been completed for all but one case and should function correctly for most use cases. The modeling code has also been completed and should work for the two models our client is currently using. The optimization code has been completed, although we are still working on making it more intuitive and optimal for our use cases. Finally, the dashboards team finalized our first iteration of tables and schemas, as well as views for the dashboards to use. We also put together a midpoint presentation for our client which resulted in several useful diagrams for describing various aspects of the project. We'll be giving the presentation verbally over an online meeting very shortly.

Past Week Accomplishments

Josiah Anderson

- Communicated with Gabe and Drake about refactoring the factor portfolios tables
- Worked with Jacob to build views for the database to consume
- Assembled our midpoint presentation for Principal

Doh Yun Kim

- Finished first iteration of modeling
- Uploaded midpoint presentation slides
- Met with Vishnu to discuss modeling

Gabriel Klein

- Worked on database schema designs with Drake
- Finished implementing the first factor portfolio aggregation prototype
 - Interpreted parameters to query the correct data from the database
 - Performed input feature engineering and aggregation
 - Performed output response aggregation
 - Implemented thorough error checking to catch and report invalid arguments or configurations
- Prepared slides and diagrams for the midpoint presentation

Drake Mossman

- Factor statistics table aggregation prototype
- Stock scoring prototype planning
- Assistance with stock scoring prototype
- Midpoint presentation Prep

Jacob Richards

- Met with Josiah to discuss database schema
- Corrected Database Views
- Connected with Josh about Power BI input clarifications
- Prepared slides for midpoint presentation

Nathan Schaffer:

- Met with Fikri to further discuss scoring stocks
 - Implemented multi factor data aggregation for scoring stocks
 - Troubleshooting of Jupyter Notebook with Vishnu
 - Finished working on package import problem
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Pending Issues

As of now, there are no new pending issues. However, we are still waiting for someone to have the time to work on the testing aspect of the project.

Plans for Upcoming Reporting Period

Josiah Anderson

- Work with DK to implement modeling table
- Update views to match new schema
- Update queries to database

Doh Yun Kim

- Integrate modeling with factor portfolio aggregation and optimization
- Decide on a concrete way to store predicted values

Gabriel Klein

- Integrate work with the modeling stage
- Get feedback on this version of the prototype
- Work on adding features missed in this first attempt and fixing anything else wrong as identified by our client

Drake Mossman

- Begin integration with modeling stage
- Create stock scoring diagnostic table interface

Jacob Richards

- Help connect Database to other steps in the pipeline
- Integrate new Database schema into next iteration
- Fix and issues with current iteration

Nathan Schaffer:

- Implement stock scorer class
 - Finish fixing Jupyter Notebook
 - Get feedback on prototype
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Josiah Anderson	FP Tables, views, presentation	14	136.5
Doh Yun Kim	Prototyping Modeling	6	112
Gabriel Klein	DB Schemas, Factor Portfolio Aggregation prototype, presentation prep	13	135
Drake Mossman	Prototyping FST Aggregator and Stock Scorer	12	130.75
Nathan Schaffer	Meeting with Fikri, Factor aggregation, Package imports	7	101
Jacob Richards	Database views and Schema implementation	7	107.25