

sdmay19-06: Quantitative Research Modeling Library

Week 4 Report

September 29 - October 5

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 we completed our final planned interviews with Principal. These ones were mainly with more established employees at the company including one of our main project leaders who acts as the endpoint for other employees to get their data from. From what we learned, we can now begin to solidify some of our design ideas into real plans for the project. In addition, we also spent some more time practicing with Python and R and studying the scripts we have.

Past Week Accomplishments

Josiah Anderson

- Interviewed Q Mabasa
 - Discussed Data aggregation procedure
 - Views acquiring data as the bottleneck in their process
 - Wants to see us make a data sandbox that developers can use to access data
- Researched relevant R packages and whether there were supported equivalents in Python

Doh Yun Kim

- Interviewed members of the quant team in Principal in Des Moines
 - Ryan Lam: New member at Principal, provided suggestions for what a new employee at Principal would like to see
 - Markus Sauter: Senior member at Principal. Provided insights into how the databases at Principal worked, and provide info on how teams communicate database information
- Looked into working on preprocessing/refactoring on the provided R code

Gabriel Klein

- Practiced using Python to code projects
- Interviewed Principal employees in Des Moines
 - Krisoye Smith: Primary data aggregator for data science team
 - Yaoliang He: Long-term member of related financial team

Drake Mossman

- Interviewed potential users and stakeholders to refine design approach

- Q Mabasa
 - Would like to see researchers having direct access to data
- Krisoye Smith
 - Suggested looking into other libraries / languages (Julia, caret)
- Yaoliang He
 - Does not spend much time coding and wouldn't likely benefit from our library

Jacob Richards

- Furthered Python and R knowledge
- Researched Principal scripts
 - Binary Metrics
 - ROC / AUC

Nathan Schaffer:

- Interviewed Principal employees in Des Moines
 - Q Mabasa : Data Scientist
 - Ryan Lam : Market Research team
 - Markus Sauter : Systematics Team
- Researched Python and R

Group:

- Came up with personas for our client
 - Used lotus flower method to come up with varied project ideas
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Pending Issues

At the moment there are no significant pending issues. We have the resources we need to continue our work on the project.

Plans for Upcoming Reporting Period

Josiah Anderson

- Market research into existing Data science modeling libraries
 - R
 - Python
- Communicate with Principal about specific and concrete deliverables
 - R library
 - Data aggregation
 - Data Visualization

Doh Yun Kim

- Try and refactor the code to see if places in the code can be simplified
- Try and come up with more concrete project ideas so our project has a more narrow vision

Gabriel Klein

- Investigate similar existing projects
 - Quantopian
 - Quantiacs
- Decide on scope for project
- Begin discussing concrete implementation
 - Draft up concepts for libraries

- Define interfaces to get feedback on

Drake Mossman

- Meet with advisor to help narrow/ choose scope for project
- Plan out next steps, timeline, deliverables
- Study data aggregation scripts from Krisoye
- Research caret and Julia

Jacob Richards

- Meet with advisor on project
- Research existing mode libraries
- Brainstorm implementation and design

Nathan Schaffer:

- Discuss future plan with advisor
- Run project ideas by Principal
- Look into interviewing past Principal interns at Iowa State
- Study example scripts from Principal

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Josiah Anderson	Interviews, Existing R and Python packages, meeting info	6.5	27.5
Doh Yun Kim	Interviews, script refactoring	6	26.5
Gabriel Klein	Principal interviews, persona/idea creation, Python	6	31
Drake Mossman	Interviews	6.5	26.5
Nathan Schaffer	Principal interviews, Python and R Research	6	23
Jacob Richards	Python and R, Principal script research	6	22

Gitlab Activity Summary

Nothing to report.