Progress Report: Sprint 1

Kathryn Butler, Michael Mcallister, Joseph Schaab

Executive Summary

The Optimizing Research Software Codes project improves the performance of RINEX2DB, a GNSS data tool which converts RINEX observation/navigation data into .CSV outputs. Our team aims to refactor this codebase to reduce runtime while maintaining accuracy.

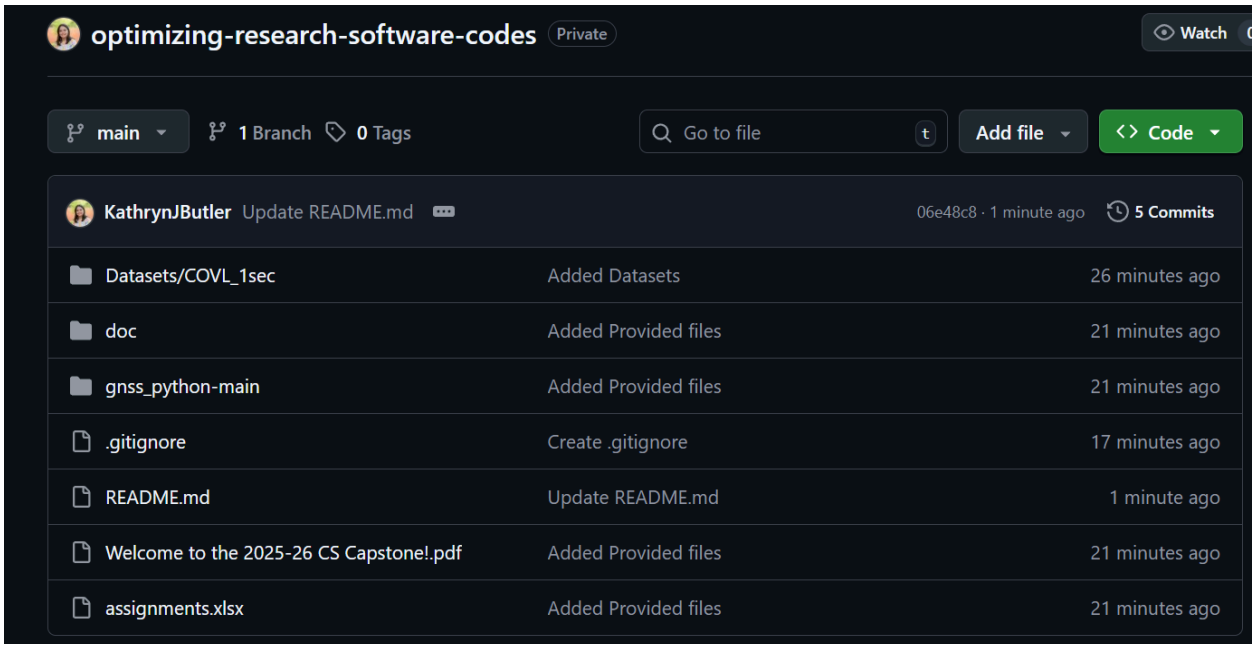
- Repository Setup: Inherited and verified the existing RINEX2DB Python project (python rinex.py → compactdb.csv).
- Communication: Discord and in-person meetings. Weekly Partner and TA meetings via Zoom/Discord.
- Project Board - Trello: Live with 8 backlog tasks, including code analysis, algorithm review, and validation testing.
- Repo Summary
    - We have confirmed access and permissions to collaborate on the repository. Python, no frameworks, default main branch, no tests yet.
    - Next steps: Analyze the code and create initial validation tests.

Communication

Channels	Usage	Owner(s)	Response Times	Recurring Meetings
Discord	Primary async channel, progress report with TA	All team members	< 4 hours during the weekdays	Thursdays 11:00-11:30am
GitHub Issues/Pull Requests	Pull requests and code review	All team members	< 4 hours during the weekdays	Reviewed during team meetings
Zoom	Progress summaries with Project Partner	All team members	N/A	Thursdays 10:00-11:00am
Email	Formal communication and professor questions	All team members	< 4 hours during the weekday	N/A

Repo Snapshot

Project Repository



README.md

Optimizing Research Software Codes Project

The Optimizing Research Software Codes project aims to improve the performance of an existing research tool used for Global Navigation Satellite System (GNSS) data analysis.

Team Roster & Contacts

Name	Role	Contact
Kathryn Butler	Team Member	butlekat@oregonstate.edu
Michael Mcallister	Team Member	mcallmic@oregonstate.edu
Joseph Schaab	Team Member	schaabj@oregonstate.edu
Dr. Jihye Park	Project Partner	Jihye.Park@oregonstate.edu
Birat Thapa	TA	thapabi@oregonstate.edu

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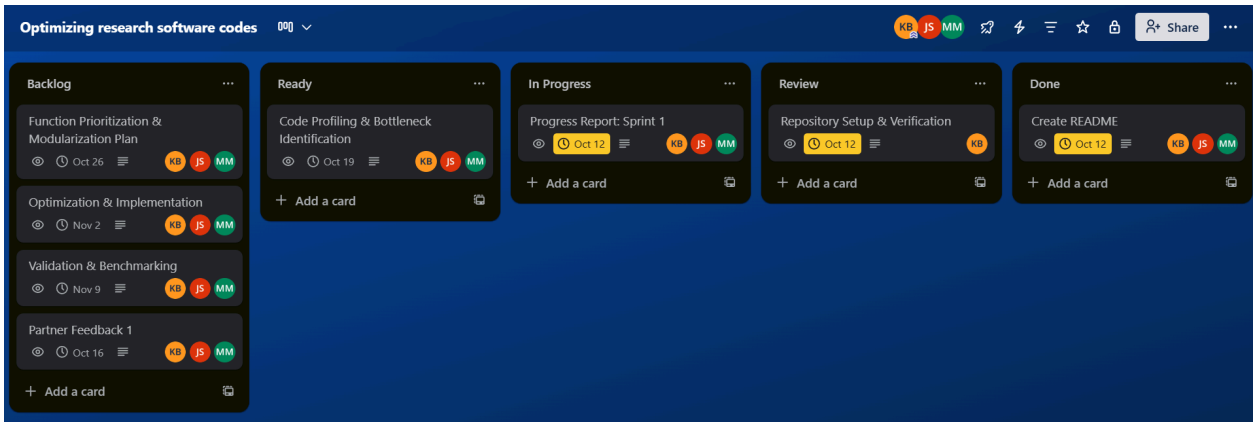
PM Rails Snapshot

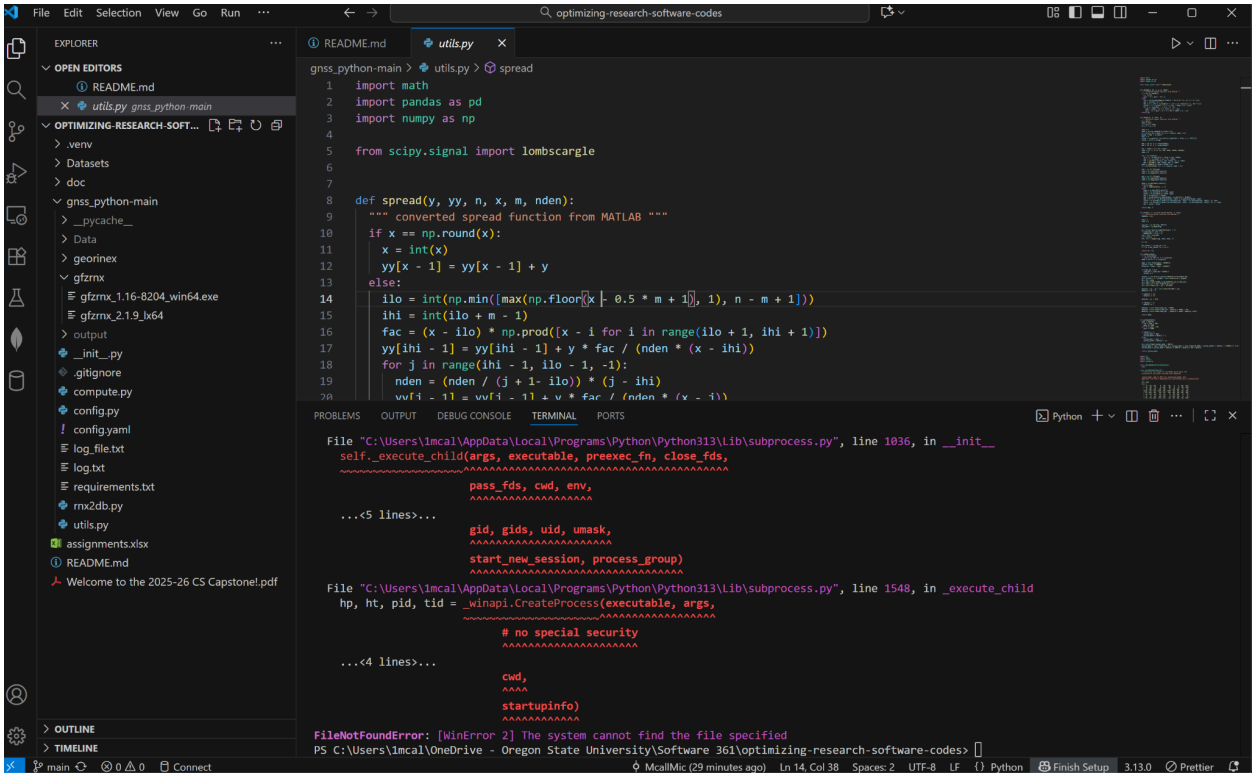
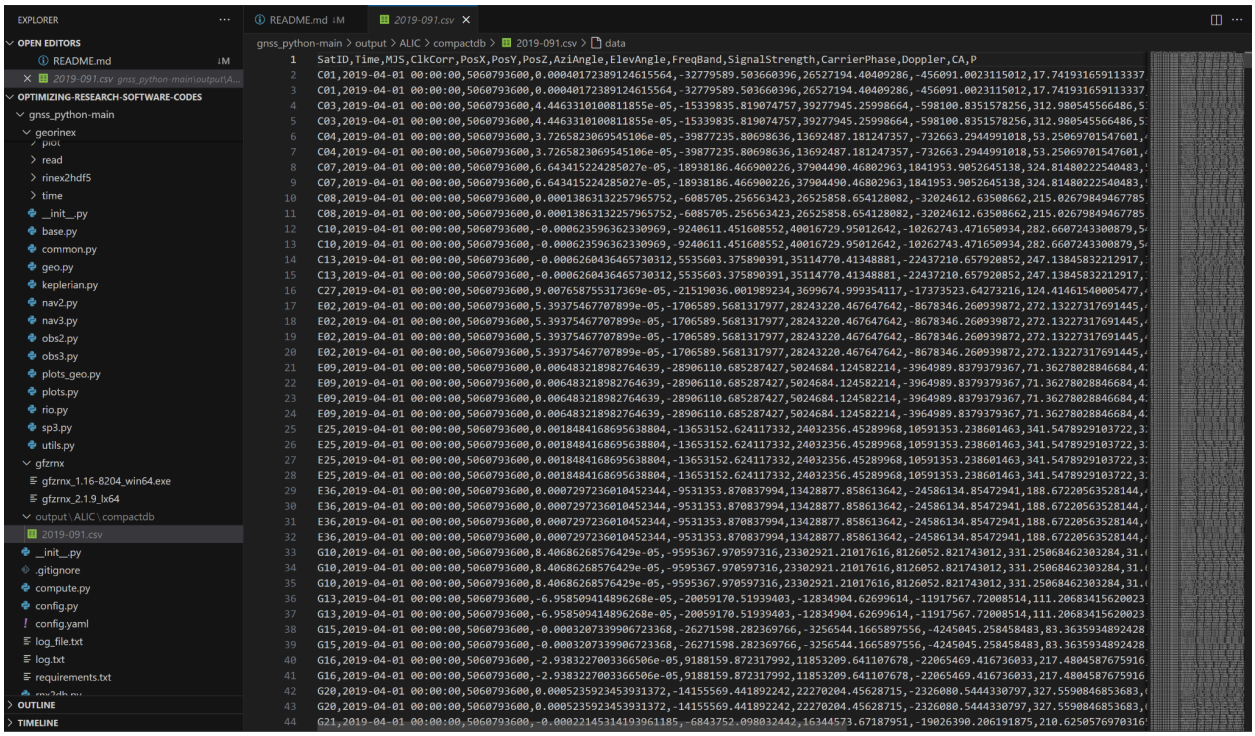
https://trello.com/invite/b/68e9470f2d50da1ae95b40f5/ATTIdf712df149b1e8a34ccdd4cbce952ac02AF3DEF8/optimizing-research-software-codes



Inherited Project Run Verification

Name	Description
Datasets/COVL_1sec	Directory of sample input datasets.
doc	Documentation directory. This includes project description, program usage and program installation manuals.
gnss_python-main	Main program directory. The main program Python file is rnx2db.py. Supporting Python files and input/output directories used by rnx2db.py are included in this directory.
.gitignore	The template Python .gitignore file.
README.md	The README file, containing information about the project and our team roles.
Welcome to the 2025-26 CS Capstone!.pdf	CS Capstone introductory pdf document.
assignments.xlsx	Assignment spreadsheet. This includes assignment titles and their respective due dates.

Our inherited project has difficulties running due to the necessity of adding additional libraries. This is currently being investigated to discover the correct libraries to add.

Our team got the project to run and output the desired CSV file after resolving many dependency issues, but there are still some recurring issues with the project retaining

access to its required libraries in our current environment. We plan on trying Anaconda in the future as the documentation provided to us by Dr. Park suggests, to avoid further problems.