

SE 492 - sdmay20-54

## Enabling Repeatable Graph-based Experimentation and Education

### Bi-Weekly Report 4 - Semester 2

2/28-3/12

Client: Ben Holla

Faculty Advisor: Suresh Kothari/Payas

### Team Members:

Austin Gregory - Report Manager

Peter Marasco - Communication Coordinator

Blake Mulnix - Trello Manager

Kyle Ferguson - Meeting Coordinator

Matthew Schaffer - Technical Leader

### Past Week Accomplishments

- Embedded CHPG files into website - Austin
  - Graph visualization now shown in website using a container consisting of the graph visualization and embedding it into an HTML container
  - Dropdown menu with several CHPG files to test added
  - Spinning gear indicating the loading of the CHPG files added
- Developed Demo Server - Blake/Matthew
  - Began new eclipse project which holds a server for demoing our graphs independently of the jupyter kernel
  - JavaScript/Spring for frontend/backend
  - Allows user to demo project without having to go through the process of exporting graphs through atlas, into using the jupyter kernel to display graphs — now simply uses a pre-existing CHPG file and displays the graph associated with it
- Cleaned up container parsing - Kyle & Peter
  - Refactored the method for parsing for information from CHPG files to be less fragile if CHPG files change
  - Now less reliant on specific file types — now relies on keys regarding the function names rather than substrings

- Fixed bug where certain function names that didn't meet a specific format would result in incorrect container names
- Merge code/code review — All members
  - Performed a team-wide code review, resulting in several changes to design, efficiency, and overall cleanliness of code
  - Merged all changes for this semester into a single branch for demo

## Pending Issues

- Change import/output approach for graph for future scaling (Priority)
  - Change the I/O approach of the CHPG files from XML to JSON/Java Objects to allow for scalability of graphs. Currently will run into some issues with massive graphs
- Add typing to graphs (genetic graphs, statistical data, software)
  - Currently only have software control-flow graphs
- Edges in graph crossing (requires overhaul of algorithm)
  - Add taxi-like edges that avoid graph crossing to more accurately replicate Atlas
- Add further context menu options
  - Brainstorm potential additions
- Save graphs to notebook
  - Save XML files to the notebook rather than importing each time

## Individual Contributions

Team Member	Contributions	Bi-Weekly Hours	Total Hours
Austin Gregory	Embedded CHPG files into website, Merged code/code review, Status Report	13	44
Peter Marasco	Cleaned up container parsing, Merged code/code review	14	46

Blake Mulnix	Developed Demo Server, Merged code/code review	16	49
Matthew Schaffer	Developed Demo Server, Merged code/code review	13	42
Kyle Ferguson	Cleaned up container parsing, Merged code/code review	13	42

## Plans for Next Week

- Develop Video Presentation Demo - All members
  - Delegate responsibilities
  - Develop powerpoint presentation
  - Record audio describing each aspect of our project
- Embed demo server into website - Austin/Blake
  - Embed graph visualization demo server into the website
  - Research methods for achieving this
- Change import/output approach for graph for future scaling - Peter/Matthew/Kyle
  - Change the I/O approach of the CHPG files from XML to JSON/Java Objects to allow for scalability of graphs. Currently will run into some issues with massive graphs

