

# EE/CprE/SE 491 WEEKLY REPORT 1

08/17/2020 – 08/31/2020

**Group number:**

29

**Project title:**

Microbiology Lab Information Management and Visualization System

**Client &/Advisor:**

Karrie Daniels & Thomas Daniels

**Team Members/Role:**

Brittany McPeck — Report/Documentation Manager

Benjamin Vogel — Team Manager

Rob Reinhard — Meeting facilitator

Kyle Gansen — Meeting Scribe

Ben Alexander — Progress Manager

Samuel Jungman — Chief Engineer

## Weekly Summary

The overall goal this week was to reacquaint ourselves with the project and start working on our project's next tasks. These tasks included: researching and implementing a way for our user to upload graphs to their Google Drive, setting up CI/CD for our project, researching ways to display the created graphs in the GUI, developing a UI prototype file to show our client, and changing our previous code to use the full Plotly library.

## Past week accomplishments

*Brittany McPeck — Report/Documentation Manager*

- Began researching Google's API so that our client can export the graphs our application makes to Google Drive.
- Found a Python library called PyDrive that is essentially a wrapper around Google's API that allows you to upload/download files to/from Google Drive.
- Used PyDrive to create an initial test of uploading .txt, .png, and .xlsx files to Google Drive.
  - All files were successfully uploaded to my ISU account.
  - File extensions were correctly kept the same.

*Benjamin Vogel — Team Manager*

- I reached out to our client and our advisor to set up our weekly meetings for the rest of the semester, and am hoping to get that locked down within the next few days.

- For the code, I've been working on setting up CI/CD for our project. On every commit of every branch, GitLab will now run the suite of test we have set up to make sure each commit will be passing in tests. Hopefully this will continue to drive our development towards Test Driven Development rather than writing code and then developing tests.
- On our master, we also build an executable for the client on every push to master as well as nightly.
- I also added CHANGELOG.md and set up rules to standardize the CHANGELOG contributions within the README. Continued to work on maintaining our backlog on Trello.

*Rob Reinhard — Meeting facilitator*

- Examined our front-end code, started working on guidelines and documentation for how the GUI is created and generated. I also began cross-referencing this with Ben Alexander's UI prototype files.
- Started learning, like Samuel, about the different kinds of algorithms we need for this project, such as the P-Test and T-tests.

*Kyle Gansen — Meeting Scribe*

- Researched ways to display a graph within GUI. Determined that the QtWebEngine widget *QWebEngineView* would be a potential way to display the html view of a graph.
- Created a simple GUI to test use of the QWebEngineView to display a graph that had been exported to an html file and verified that it displayed properly.

*Ben Alexander — Progress Manager*

- For the project so far, we've been using Plotly Express for graphing, last semester, I made some examples with it for a demonstration. Plotly Express is a higher level and simpler version of the full Plotly library. I worked on making the same graphs but with the full Plotly library instead of Plotly Express.
- I also started making a UI prototype file on our Google Drive. This shows some of the screen designs that we would like to have in our application.

*Samuel Jungman — Chief Engineer*

- Focused on trying to learn and build algorithms for the statistical analysis needed for the project, primarily finding correlation, conducting T-tests, and conducting P-tests
- Started to workout preliminary algorithms with rough drafts soon to follow

## **Pending issues**

*Brittany McPeck — Report/Documentation Manager*

- No pending issues.

*Benjamin Vogel — Team Manager*

- Fixing issues on how the executable is being generated. The executable is generated, but so far all it does is crash (no actual functioning EXE).
- Also fetching more information from the client in order to make sure we are on the right track.

*Rob Reinhard — Meeting facilitator*

- Issues running GUI on other people's machines. Will meet with team and investigate sometime this week.

*Kyle Gansen — Meeting Scribe*

- The html view of a graph has an option to download the graph as an image. However, I need to do more research on how to handle a download with the QtWebengine if this is the method we'd like to use for exporting graphs as images.

*Ben Alexander — Progress Manager*

- The full Plotly library is more customizable than Plotly Express. Because of this, more work needs to be done when setting up the graphs in the code. Most of this customization may not be necessary so what I think we should do is use Plotly Express everywhere we can and use Plotly in places that need more customization for whatever reason. This would make development move quicker and we would run into less issues.

*Samuel Jungman — Chief Engineer*

- My statistics knowledge was rusty and out of the scope of what was needed for the project, so finding resources to learn it was tricky but solved using personal connections who have more subject matter expertise.

**Individual contributions**

Team Member	Contribution	Weekly Hours	Total Hours
Brittany McPeck	Started researching Google Drive's API and began implementing the export feature	6	6
Benjamin Vogel	Contacted client, setup CI/CD, updated documentation	6	6
Ben Alexander	Implemented full Plotly library, created UI prototypes	6	6
Rob Reinhard	Started research on stats, started writing documentation for GUI.	6	6
Kyle Gansen	Displayed graph in html format within UI	6	6
Samuel Jungman	Started research and development on stats	6	6

## **Plans for the upcoming week**

### *Brittany McPeck — Report/Documentation Manager*

- Work with the GUI team to get my export feature working with the graphs they generate
- Merge the Google Drive Interface branch
- Look into how we can save graphs to the user's local machine (and also how we might backup data)

### *Benjamin Vogel — Team Manager*

- Set up our weekly meetings
- Continue to fix CI/CD M
- Maybe look into editing data within the application
- Writing tests

### *Rob Reinhard — Meeting facilitator*

- Meet with non-gui teams to discuss their project and how it will interface with GUI
- Finish writing GUI documentation about its development lifecycle.
- Finish merging GUI code with current code that was not merged before last semester demo.

### *Kyle Gansen — Meeting Scribe*

- Create UI elements to select the y and x axis for a scatter plot graph using data from an imported excel file
- Display a scatter plot with these selected data

### *Ben Alexander — Progress Manager*

- Merge the Full Plotly Library branch
- Complete UI prototypes
- Get started on making the custom graphs in the UI with Plotly

### *Samuel Jungman — Chief Engineer*

- Writing out algorithms for Correlation, P-Test, T-test
- Building test cases and test data sets for above algorithms

## **Summary of weekly advisor meeting**

Our first meeting with our advisor is scheduled for tomorrow. At this meeting we plan on touching base with both our advisor and client, iron out their expectations for us this semester, and discuss any suggested/proposed changes/updates/additions to the project.