EE/CprE/SE 491 WEEKLY REPORT #1 - 1/17/22 – 2/17/22

Group number: **sd-may 23 50**

Project title: **Collaborative Surveillance of Large Geographic Area by Fleet of Drones**

Client &/Advisor: **Goce Trajcevski**

Team Members/Roles:

Rowan Collins - Backend and Testing
Joseph Edeker - UI/UX, Frontend Management
Jaden Forde - Client Interaction, Frontend and Backend
Thomas Glass - Backend with Security Emphasis
Jacob Houts - Backend Developer
Marcus Jakubowsky - Team Lead, Project Management and Backend

o **Weekly Summary**

The overall objective for the past two weeks was to get started with setting up the environment and to get user authentication up and running. Our frontend team worked on getting the screens set up and the backend team created the endpoints for the functionality. We also have worked on brainstorming ways to handle the more complex features our application has to offer. Such as how we are going to save simulations locally, how we are going to handle receiving the visualization data on the frontend, etc.

o **Past week accomplishments**

Rowan Collins - Created backend endpoint paths to allow the ability to save algorithm file path data, along with the data initialization upon application start up.
Joseph Edeker - Setup project for a React component library. Worked on initial designs for frontend pages.
Jaden Forde - Added login HTTP logic to frontend to communicate with backend, other pages will be similar. Made progress on executing Python algorithm scripts from Java.
Thomas Glass - Began learning react for frontend design. Worked on initial design of front pages. Began using react libraries to be the front endpoint of the application.
Jacob Houts - Created the backend environment to allow everybody to set up and test locally on their machine. Helped create some of the endpoints for user authentication. Researched ways we can store the simulation files.
Marcus Jakubowsky - Created backend endpoint paths for User login and sign up. Added Docker container functionality for the SpringBoot & MySQL backend.

With research on Docker, I should be able to encompass frontend as well as additional backend python modules if needed.

o **Pending issues**

Rowan Collins - Unit tests are non-existent as of right now, so tests will need to be made in the future to ensure the systems work fluently together.
Joseph Edeker - None
Jaden Forde - The complex nature of the provided Python algorithms has made them difficult to implement within the Java backend. Spawning the process is doable, but getting the output correctly has been difficult.
Thomas Glass - Practicing more react to be able to better develop the web application.
Jacob Houts - The hardest thing for me so far is getting a grasp of the workflow of the entire application. And trying to figure out the technologies we will need to handle more complex parts of the application.
Marcus Jakubowsky - Organizing the team's next steps, i.e. specifying the models and endpoint that the backend is going to need to allow tasks to be distributed for work by the team.

We are also still waiting to hear back from ETG about getting a server to run our application on for the semester.

o **Individual contributions**

NAME	Individual Contributions	Hours this week	Hours cumulative
Rowan Collins	- Research within design philosophies - Research into MySQL data initialization upon application startup - Implementation of data initialization - Begun implementation of storing run data along with file path information	**4**	**12**
Joseph Edeker	- Research of Blueprint.js - Integration of Blueprint.js	**4**	**15**
Jaden Forde	- Research of JS HTTP libraries - Research of Python and Java interoperability - Implementation of Frontend logic for HTTP requests - Progress on running python algorithms from within Java backend	**4**	**13**
Thomas Glass	- Research into how the algorithms operate - Learning react to develop frontend - Learning blueprint.js - Created mockups for frontend designs - Begun developing frontend simulation setup page	**5**	**12**
Jacob Houts	- Research on how to save files locally through the backend. - Creating the boilerplate code for the backend. - Assisted with the implementation of User authentication. - Setup the initial database for the application	**3**	**9**
Marcus Jakubowsky	- Researched into Docker and how to apply that to our application. - Created a backend endpoint path for initial login and sign up. - Completed initial Docker-ization of SpringBoot & MySQL backend - Organized team standup meetings & meetings with our faculty advisor. - Delegated team task for the weeks.	**6**	**17**

o **Comments and extended discussion**

The more we talk with each other, and our advisors, the more we understand the project and the requirements. While our understanding of what needs to be done in the coming weeks is strong, there are still some holes that need to be filled. We are actively working on understanding more of the project's design through the help of one another and our advisors, and aim to fill these gaps in knowledge as we progress. For example, the algorithms we will be using to simulate drone flight paths isn't fully understood by our group members and we are aiming to further examine it in the coming weeks.

o **Plans for the upcoming week**

Rowan Collins - Continue to finalize the backend systems that will allow execution of Python algorithms and begin the process to save the data locally. This will be done alongside Jacob and Jaden.
Joseph Edeker - Connect a working Setup page to the backend, and test different designs with Thomas.
Jaden Forde - Finish up backend Python execution, work with Rowan and Jacob to ensure we can round-trip execute an algorithm via request from the web page.
Thomas Glass - Continue working to create the Setup page round trip and test different designs with Joe.
Jacob Houts - Research how to store files locally on a computer through spring boot. Create the api endpoints to allow the frontend team to send user drone algorithms, as well as an endpoint for us to receive the visualization data after the user input is processed. This will be in collaboration with Rowan.
Marcus Jakubowsky - Create the team's next steps for models & endpoints for the backend.

o **Summary of weekly advisor meeting**

In our meeting with Prof Goce Trajcevski and Prabin, his graduate student, we discussed some of the specifics with the drone algorithms that Prabin shared with us. For which our application will simulate. We got on the same page for the inputs and what they mean; how they, as the clients, want that input to be entered; and some the initial scope for how flexible the input grid should be (we will just start with a square grid for now). Also clarified how the different algorithms work and the methodologies behind them. Finally, they expressed a goal of having a static visual representation of running the algorithms within the next three weeks.

Grading criteria

Each weekly report is worth 10 points. Scores will be awarded as follows:

8 – 10: Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.

6 – 8: There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.

< 6: Please talk to instructors/TA after class hours about any difficulties that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.