

EE/CprE/SE 491 WEEKLY REPORT

Start Date – End Date: 10/4/2024 - 10/10/2024

Group number: sdmay25-18

Project title: Weather Triggered Wireless Telemetry System

Client &/Advisor: Daji Qiao and Sarath Babu

Team Members/Role:

1. **Alex Chambers:** Individual Component Designer
2. **Alexander Christie:** Client Interaction
3. **Adam Fields:** Data Formatting
4. **Nisha Raj:** Team Lead
5. **Aidan Gull:** Component Integration
6. **Colin Kempf:** Documentation

Weekly Summary

This week our group focused on understanding our approach to our prototype and what we needed to include as we began to work on implementation. We discussed what requirements we would need, both from a software perspective and a client perspective. We also talked about what areas would be the most important to prototype first based on difficulty to implement, client needs, and how integral it would be to the rest of the program. We then began to make very basic prototypes, creating a working prototype to request weather data from APIs.

Past week accomplishments

- **Program Requirements**
 - The group brainstormed about what requirements would be needed for the software based on our designs which would be implemented in a prototype
 - We also determined what requirements the client had of the software and how we could begin to integrate those into a prototype
- **Data Gathering Prototype - Alex Chambers:**
 - Created a python script to request Weather data every hour from select APIs
 - Gathers, formats, and stores the response into json files. These files hold 12 hours of forecasts leading into the prediction time
 - We will use this data to determine accuracy of Weather APIs and to determine ideal lead time for prediction
 - Data can be used as historical data set to test system performance/accuracy later on

Pending issues

- **Server**
 - We need server or some computation devices to run the python script and gather large enough set of historical forecasting data
- **ARA Framework Data**

- Gathered live weather data from the ARA framework does not match the actual current weather

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Nisha Raj	-Worked on deriving requirements for the software -Defined what the requirements were needed to satisfy the need of the client -Experimented with running some weather APIs -Helped research python threading for software prototype	6	28
Alexander Christie	-Worked with team to develop requirements for project -Reviewed Data Gathering Prototype	6	26
Aidan Gull	- Helped formulate requirements for the project. - Ran the data gathering prototype to ensure its features met the defined requirements.	6	28
Colin Kempf	- Worked to define the requirements needed for the program both from the client and from the software. - Discussed with the group about what to prototype and made plans for doing so. - Tested the Data Gathering Prototype	6	28
Alex Chambers	- Created Data Gathering Prototype with the goal of analyzing weather forecasting accuracy with comparison to both ARA Weather data and Ames Weather data - Helped further define project requirements with the team	8	30
Adam Fields	- Requested and Received a Virtual Machine we can run our code on. - Helped further define project requirements with the team	6	25

Plans for the upcoming week

- **Further Prototyping**
 - Prototype our prediction cycle, using lead-in time variables to determine when to begin collecting data for upcoming events
 - Continue to build the Data Gathering Prototype out and integrate it with future prototypes

- **API Research**

- Continue to find more forecast APIs to use when gathering prediction data

Summary of weekly advisor meeting

We did not have a meeting with our advisor this week due to scheduling conflicts. We still updated them and discussed scheduling future meetings.