

EE/CprE/SE 491 – sdmay26-08

GridSAFE

Week 9 Report

Start date - End date: 11/18/25 – 12/02/25

Client: Nellie Leaverton

Advisor: Julie Rursch

Team Members:

Nellie Leaverton – Hardware & Architectural Design Lead

Jason Di Giovanni – Software and Security Lead

Brant Gicante – Software and Security Assistant

Evan Booze – Hardware & Architectural Design Assistant

Kyle Maloney – Testing Lead & Design Assistant

Weekly Summary:

This week, the GridSAFE team focused on setting up the prototype with its base plate and plexi-glass top. The hardware team created a custom base plate for the coin building and have started to fit a thin sheet of plexi-glass onto the base plate in order to hold the building. The software and cyber team successfully trained a prototype model using the logs from the Canadian Institute for Cybersecurity and is finalizing integrations with the other programs.

Past week accomplishments:

3D Modeling and Printing – Nellie Leaverton

- Measured and Custom Designed a 3D base plate for the prototype (Coin Building)
 - Created a base plate design schematic
 - Collaborated with team members to finalize on final measurements
 - Collaborated with team members to finalize prototype materials, 3D printed base and plexiglass top.
- Picked Up pi purchase from ETG
- Send out ETG purchases for plexiglass materials for final design.

AI Training – Jason Di Giovanni

- Continued training AI model in XGBoost
- Started integrating AI with checker program
- Started work on allowing HTTPS so RPI can send and receive data from AI

Testing & Prototype Development– Brant Gicante

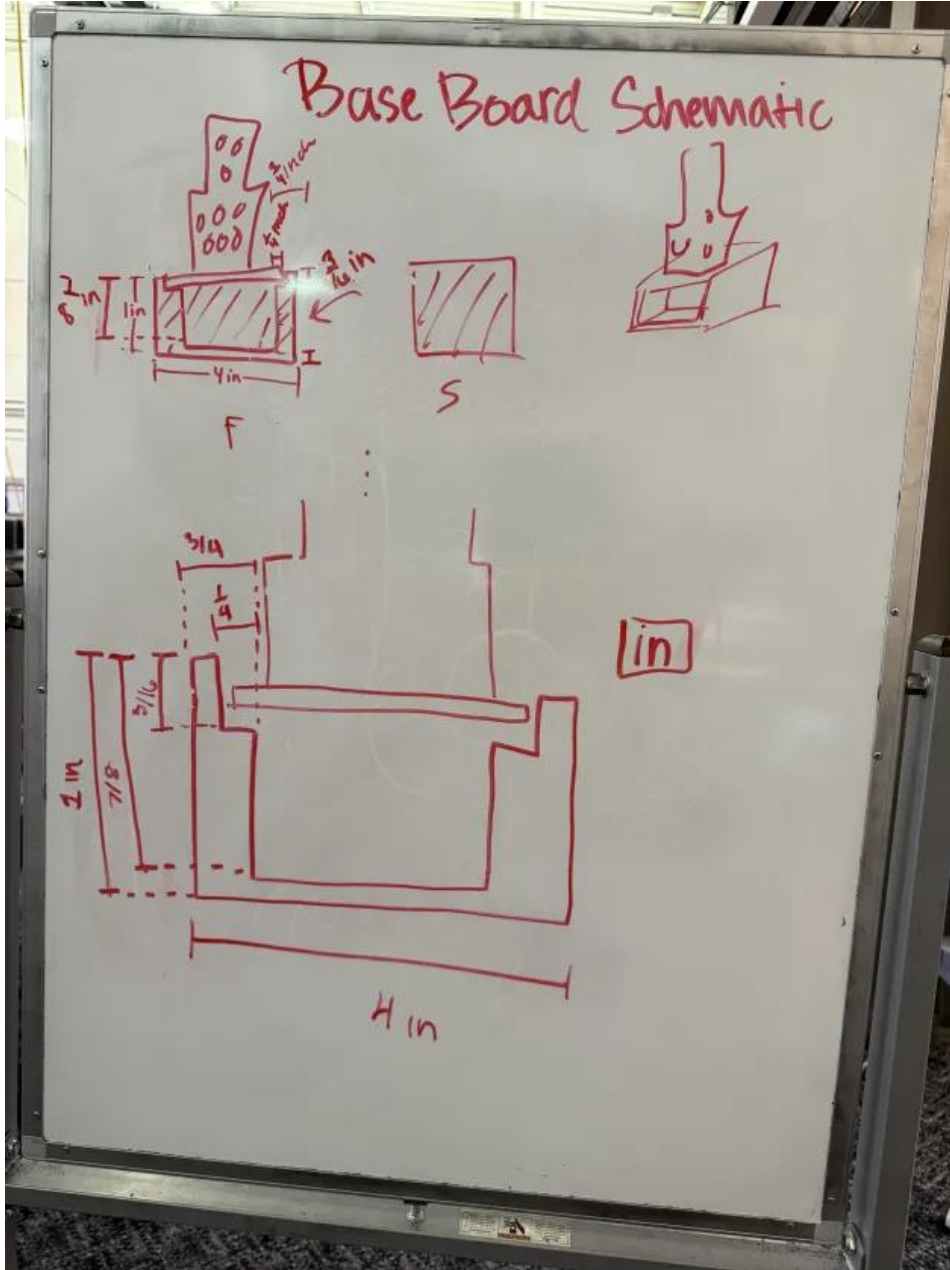
- Connected raspberry pi to hardware/circuits
 - Assisted in the testing of LED and Raspberry pi
 - Assisted and learned the connection and communication from the raspberry pi to lights
 - Got one set of lights turning on and changing color
 - Could not turn on our high-powered LED's
- Worked and assisted with the prototype to demo with this next week
- Final Presentation work
 - Worked on slides and design documents to assist in presenting
 - Worked on documenting our progress to display

3D Modeling and Prototype Testing – Evan Booze

- Made modifications to Parts Studio model and Empire State Building model for printing
 - Added additional windows
 - Created a center hole to run wiring into
- Tested New LEDs on their ability to illuminate the interior of a test building
- Worked on presentation slides for project to in preparation to present to faculty

Citations/Research:

Pictures of custom base board schematic:



Pending issues:

- A team member was absent for the week, and as a result the team was unable to access the required python scripts. And was unable to fill out their section of the document.

Individual contributions:

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Nellie Leaverton	<ul style="list-style-type: none">• Created 3D base plate• Made a Medard's run for plexiglass• Send ETG new purchase request.	4	52
Brant Gicante	<ul style="list-style-type: none">• More models finished/fixed• Prototype adjustments DONE• Wrote down usable CVE's to demo with• Sample communication between pi and lights	4	41
Evan Booze	<ul style="list-style-type: none">• Made modifications to Parts Studio• Made modifications to Empire State Building• Tested LEDs ability to light interior of test building• Worked on faculty presentation	6	36
Jason Di Giovanni	<ul style="list-style-type: none">• AI Training• AI Integration	5	41

Plans for the upcoming week:

- **Brant Gicante:**

- Complete the prototype demo with everyone
 - Get a working connection with the Software and PI
 - Connect the baseplate and a few models
 - Connect lights to a baseplate with a model or two
 - Connect PI and lights
 - Record it working
 - Use for presentation video
- Start increasing the abilities of the prototype (over break)
 - Assist in the checker and output
 - Startup the network (servers now allocated to us)
 - Create users/emails for realism

- **Evan Booze:**

- Finish making modifications to the last of our 3D models
- Finish working on faculty presentation slides
- Rehearse parts for faculty presentation
- Print more 3D models at SIC
- Acquire plexiglass/acrylic to make base plate for project prototype

- **Nellie Leaverton:**

- Start Wood Working Training, and Lazer cutting training
- Purchase through PCB.
- Continue to update the GridSafe user manual.

- **Jason Di Giovanni:**

- Fully connect AI to rest of project
- Finish allowing devices to connect over HTTPS