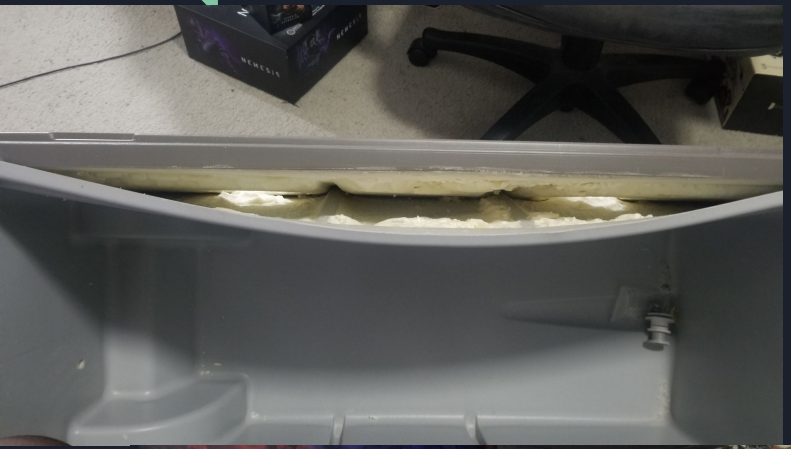
Senior Design Smart Cooler

Week 2 Aug 31 - Sep 07

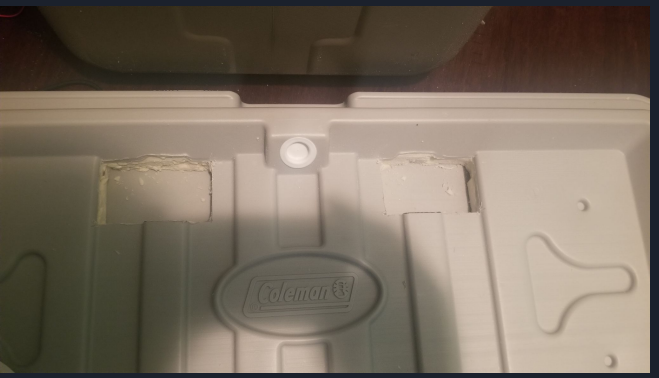
Progress made during the week

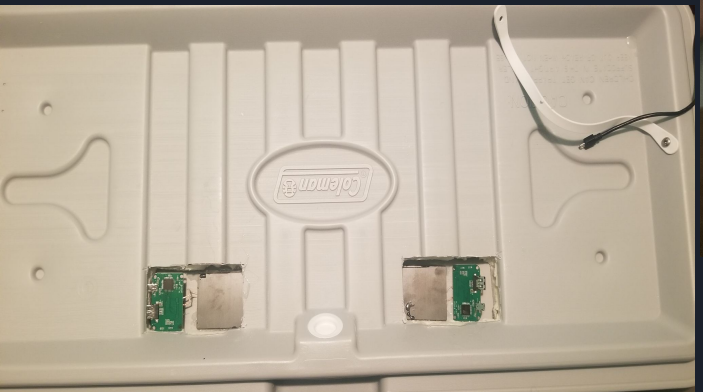
- Wired and Installed Speakers
- Wired and installed Wireless charging pads
- Received batteries and charger
- Discussed possible approaches to Fabricating locking mechanism
- Discussed mounting options for Monitor and GPS module
- iPhone Mobile App Development
- Servo Testing
- LED Light Strip Testing
- Touchscreen GUI Interface

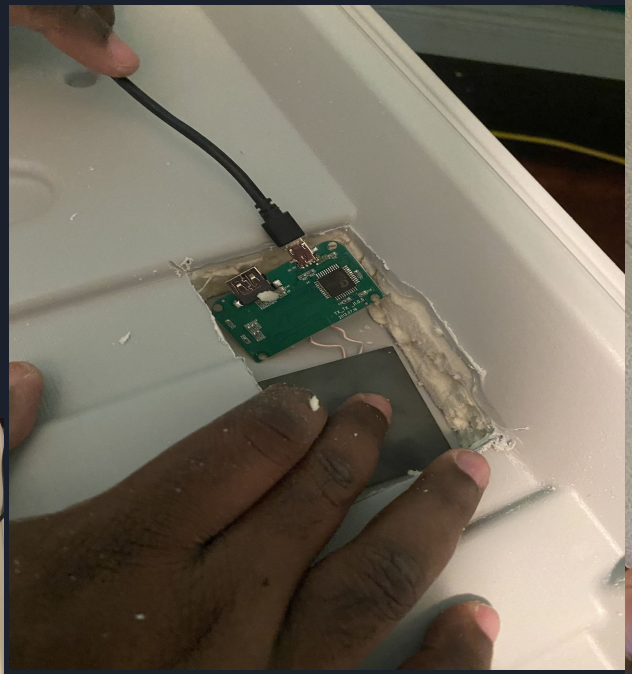
Fabrication
Speaker placement and wiring



Wireless Charging install and Test



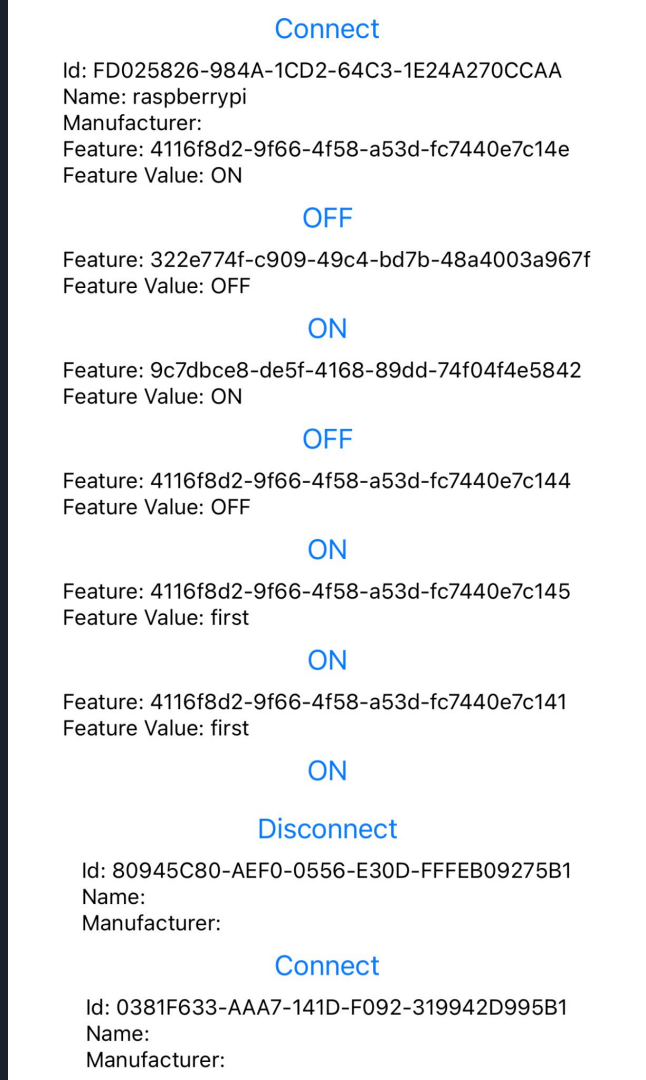




iPhone App Development

iPhone and Android phones can connect to Smart Cooler Bluetooth.

Must use macbook to publish app to iPhones.

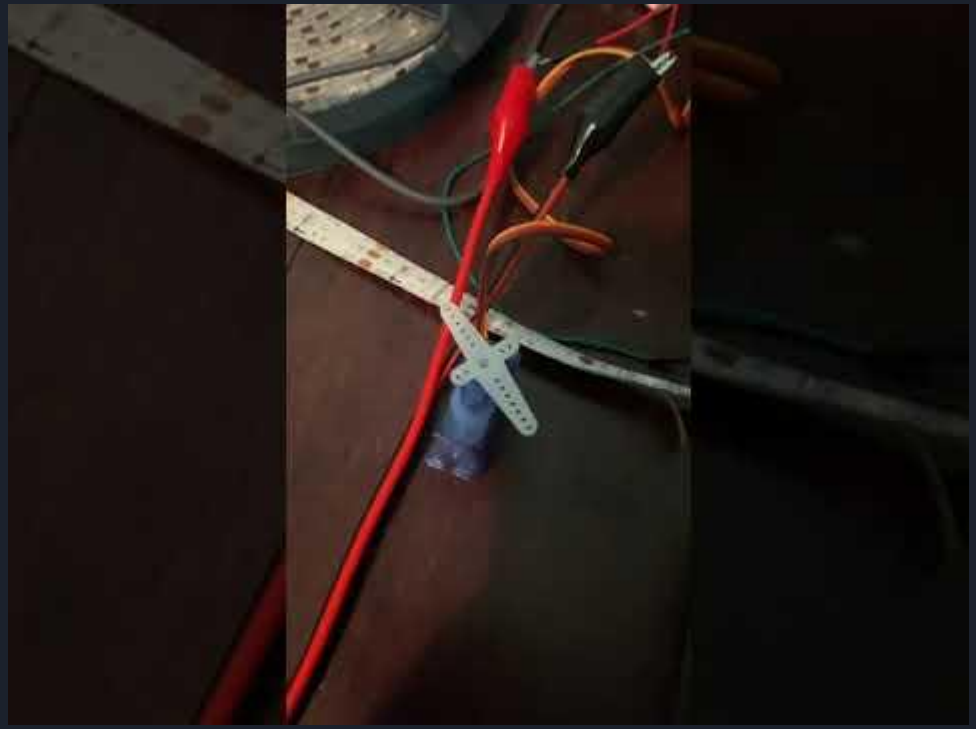


Servo Testing

The servo tested was a standard hobby servo SG90.

The servo required 5V input, and a control pin to send a signal with a duty cycle to trigger servo position.

Since the servo will only be locking and unlocking, it will be turning most like 90 to 180 degrees. Pinpoint precision is not needed.



LED Light Strip Testing

The LED light strip tested uses WS2812B RGB LEDs.

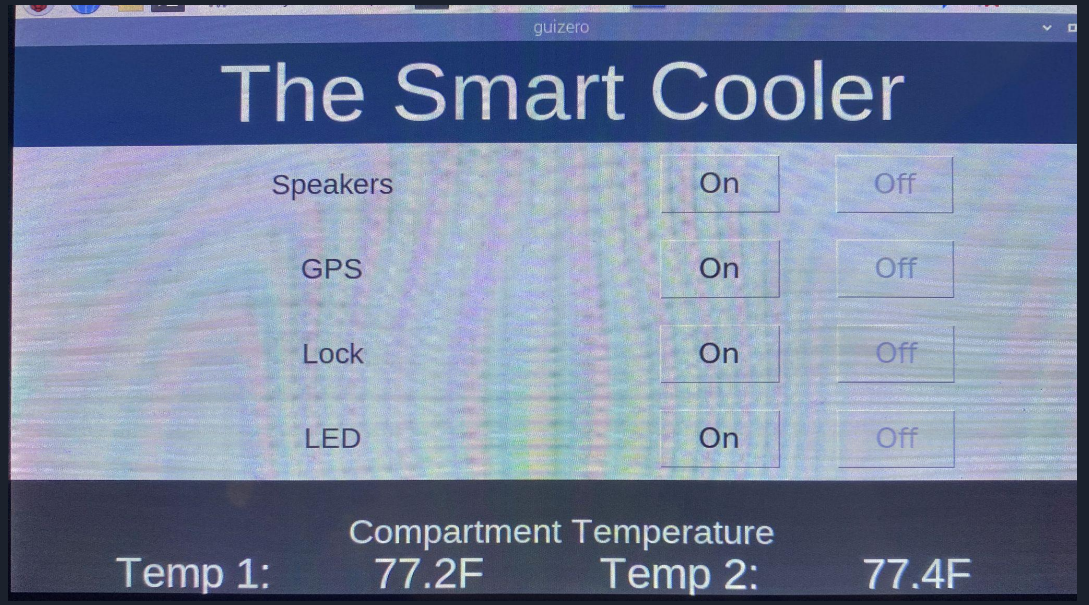
At max brightness, each LED produces 60mA. Since length needed will be 90 inches or about 2.25 meters, and each meter has 30 LEDs, the total max current will be about 4A.

However, most likely the LEDs will not be running at max brightness, so current will be much less.

Touchscreen GUI

The GUI was modified to have an easier and intuitive interface.

The design is just a prototype and still being configured.



Goals for next week

Here are the priorities for next week:

- Install required Terminal blocks
- Install battery Charger and plug solution
- Complete and Test 120V AC path
- Modify design of app
- Read sensor data to app
- Get GPS position displaying on app