Senior Design Smart Cooler

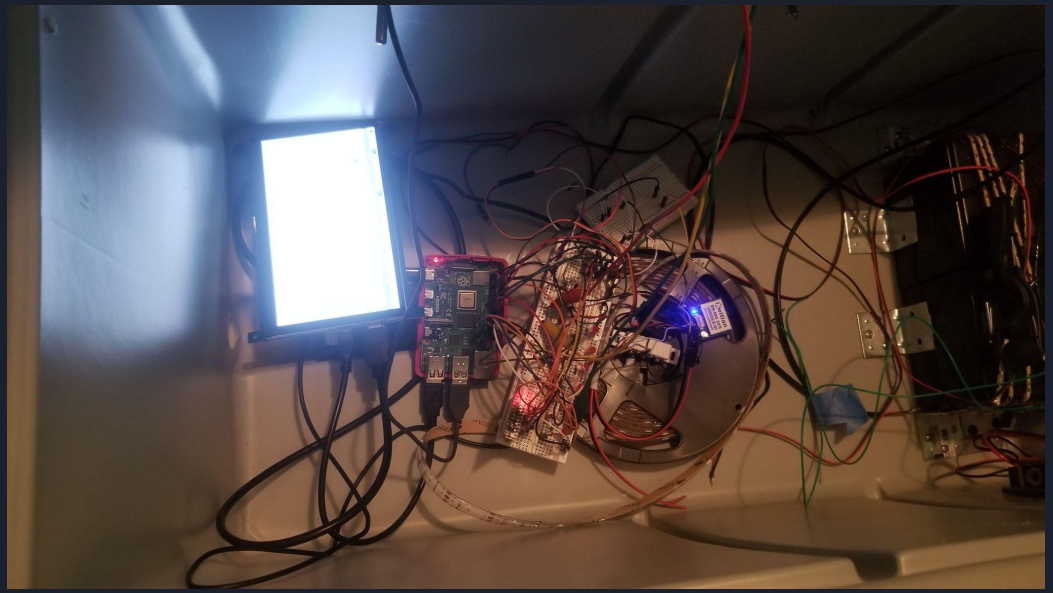
Week 8 Oct 14- Oct 20

Progress made during the week

- Tested GPS module and confirmed operation
- Final fit Temperature sensors
- Run Entire system off Batteries
- Ran wires needed for Locking mechanism
- Discussed and finalized Divider Design
- Progress on Settings Screen
- RFID controls servo

GPS Testing & Complete System Testing

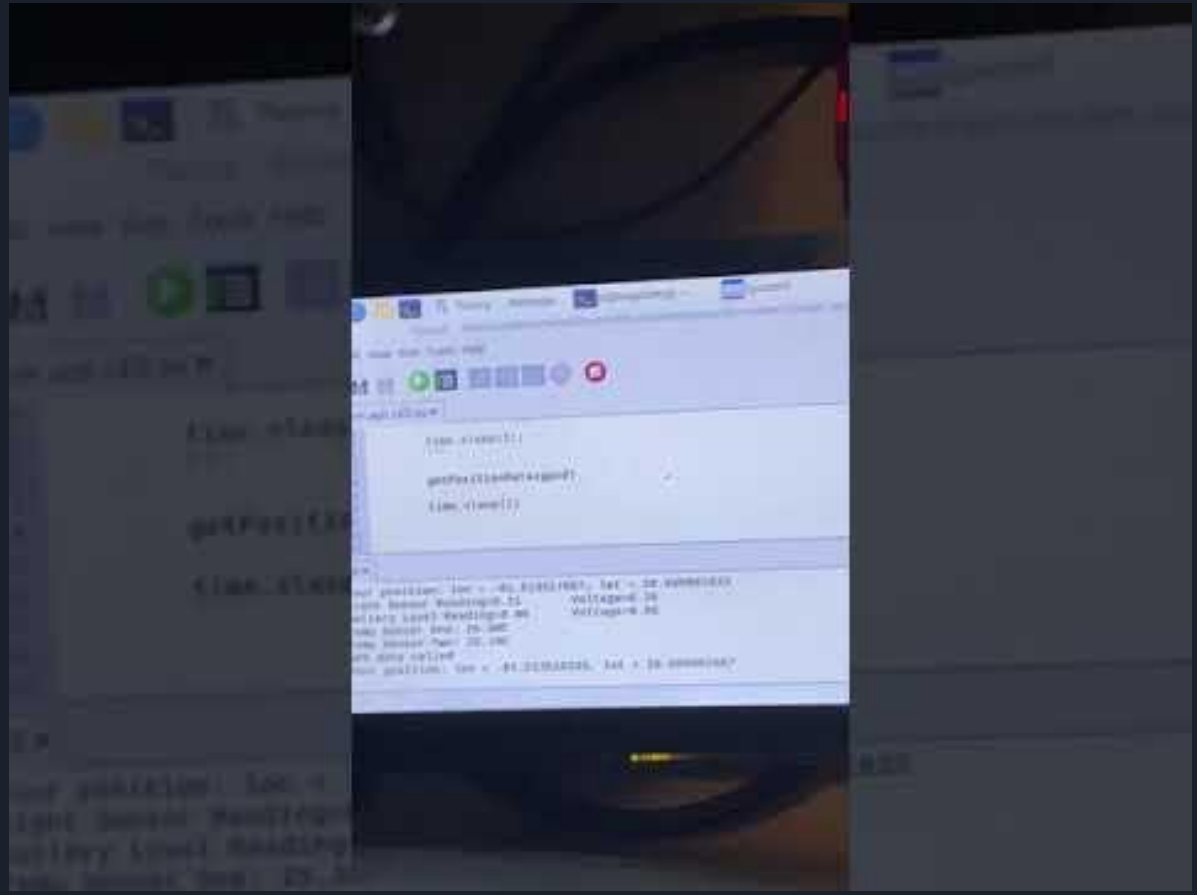
With power applied we confirmed the GPS module did in fact function with the lid down.



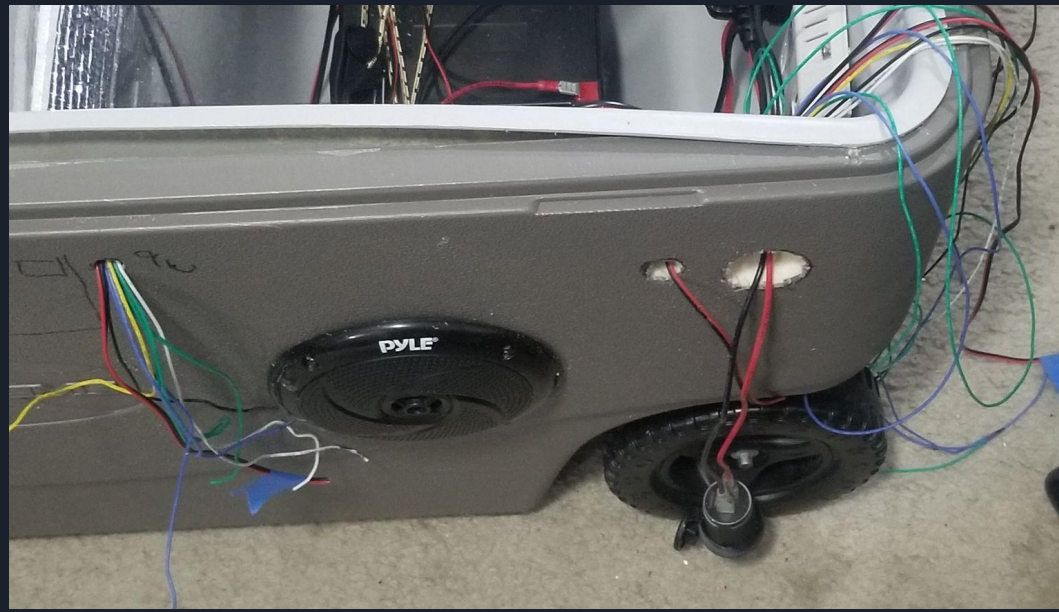
The GPS module and raspberry pi are inside the cooler.

The video shows the Raspberry pi receiving GPS data while the GPS module and Pi are inside the cooler.

Operation was confirmed with the lid closed.



Wiring



Dividers

We each had different ideas on how to implement the dividers.

We settled on using a styrofoam core wrapped in a thermal insulation shield wedged between two acrylic sheets.

Placement

This design is slightly different from our initial idea and will require more acrylic which will be cut this week.

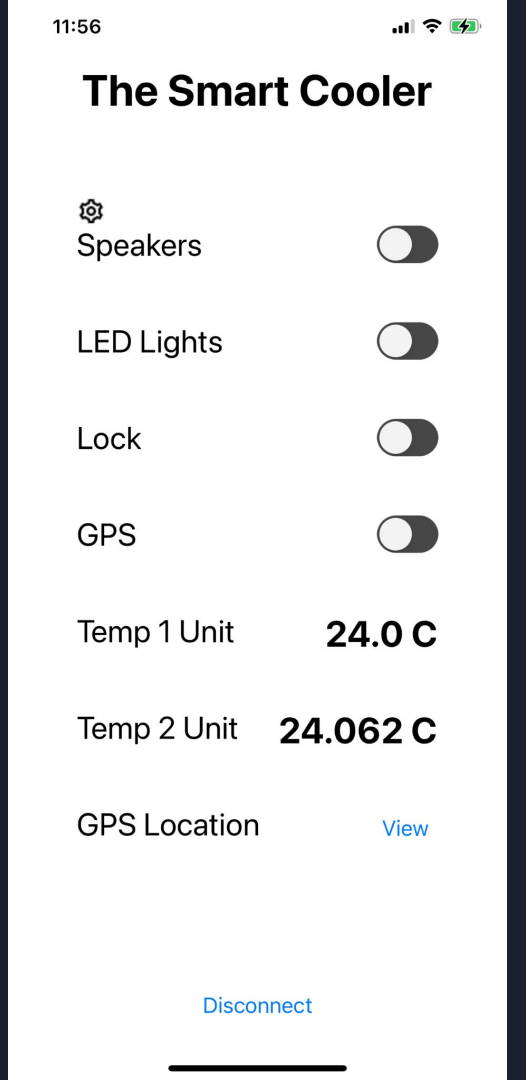
Placement

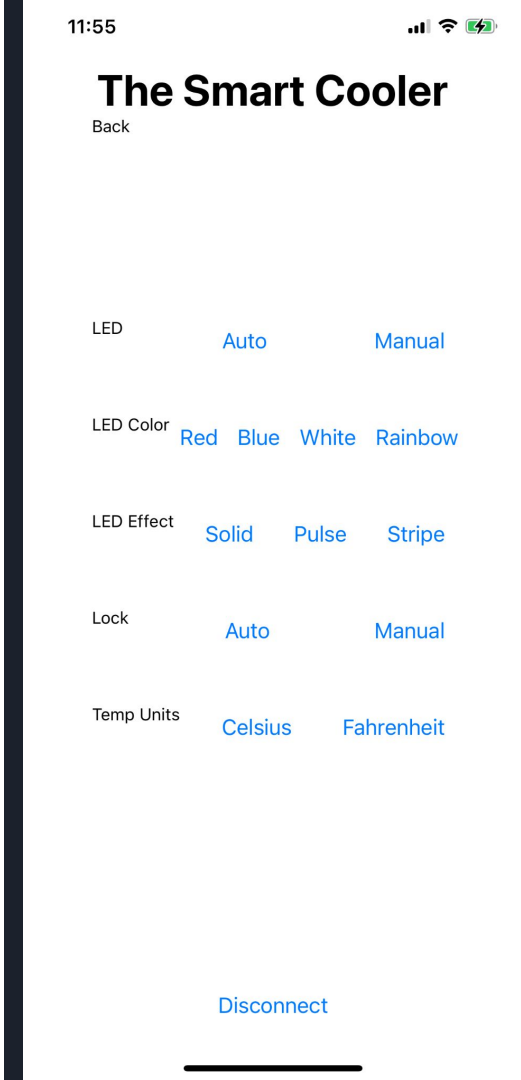
Tentative fitment of the dividers

Settings Screen Progress

Settings screen will feature:

- LED - Auto or Manual mode
- LED Color - Red, Blue, White, or Rainbow
- LED Effect - Solid, Pulse, or Stripe
- Lock - Auto or Manual mode
- Temp Units - Celsius or Fahrenheit

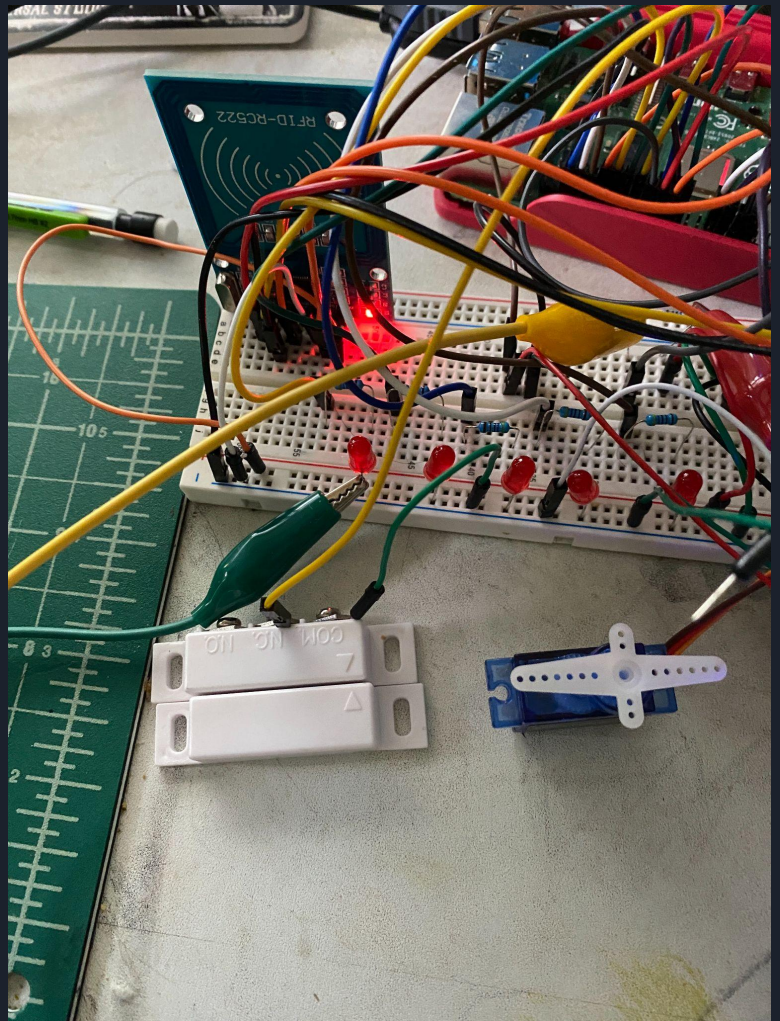




Door Locking RFID

The locking mechanism logic now checks:

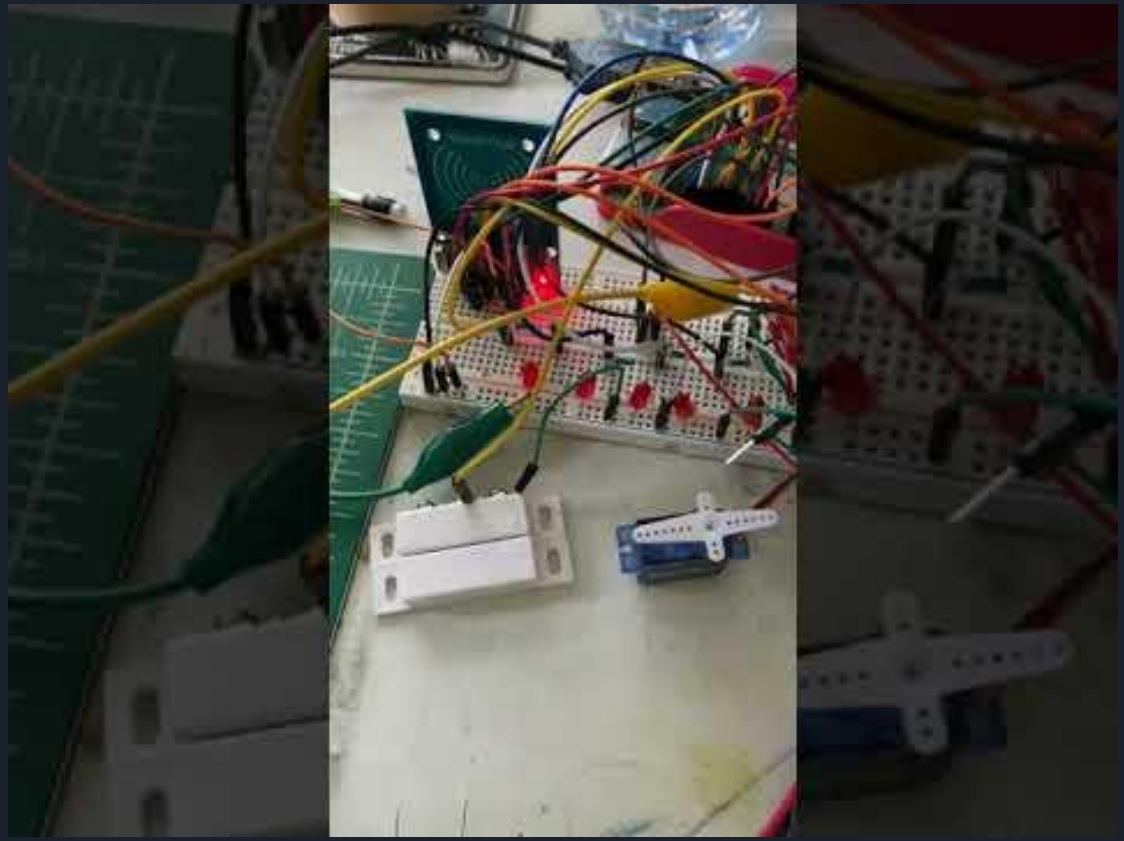
- Is the door position sensor closed?
- If yes, has an RFID object been detected?
- If yes, turn servo



Door Position Sensor Closed

Here the door position sensor is closed.

Servo will lock lid.

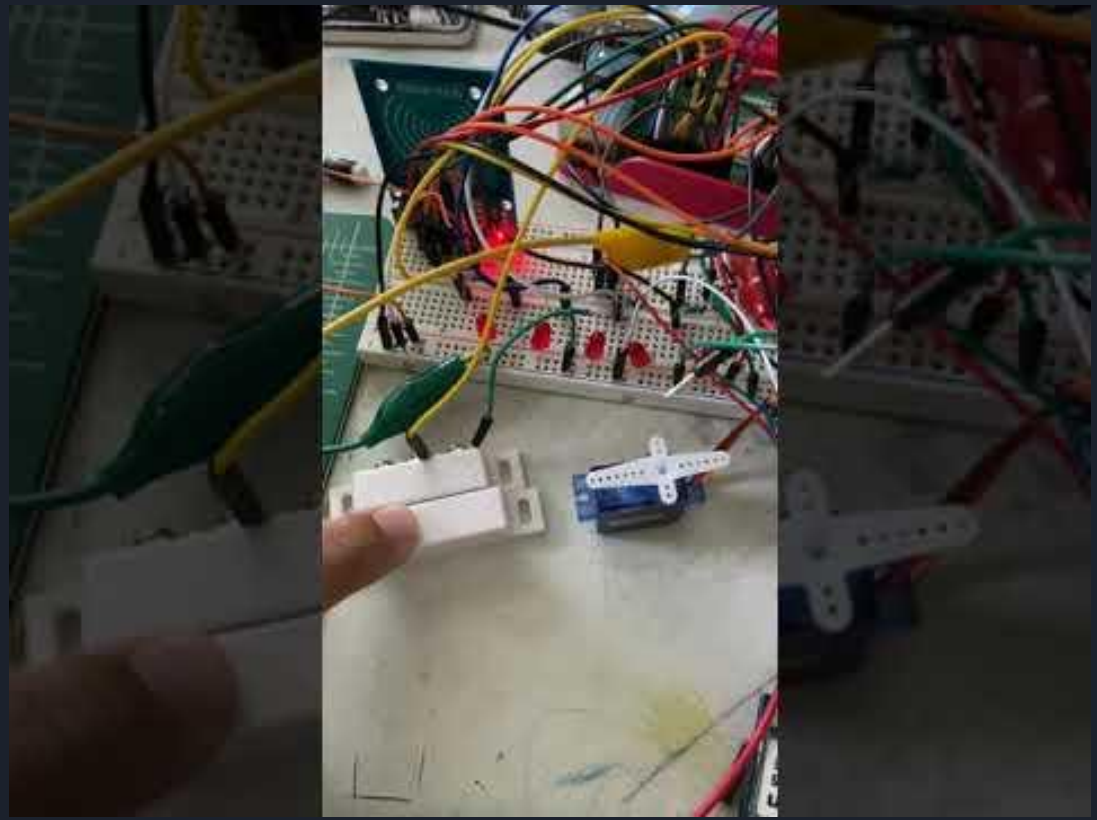


Door Position Sensor Open

Here, the door position sensor is first open.

The servo will not move when the RFID object is detected.

When the door position sensor is closed, then servo moves.



Goals for next week

Here are the priorities for next week:

- Finish Divider installation
- Cut and mount Solar Panel support
- Reattach top and complete connect Wireless chargers
- Finalize Touch screen position
- Clearly mark Charging locations in Lid
- Settings Screen