

Team Lotus

Final Presentation

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Mentor: Makamae

Advisor: Dr.Kuh

Overview

- Background/Motivation
- Goals
- Block Diagram
- Progress
- Problems
- Solutions
- Future Improvements
- Question

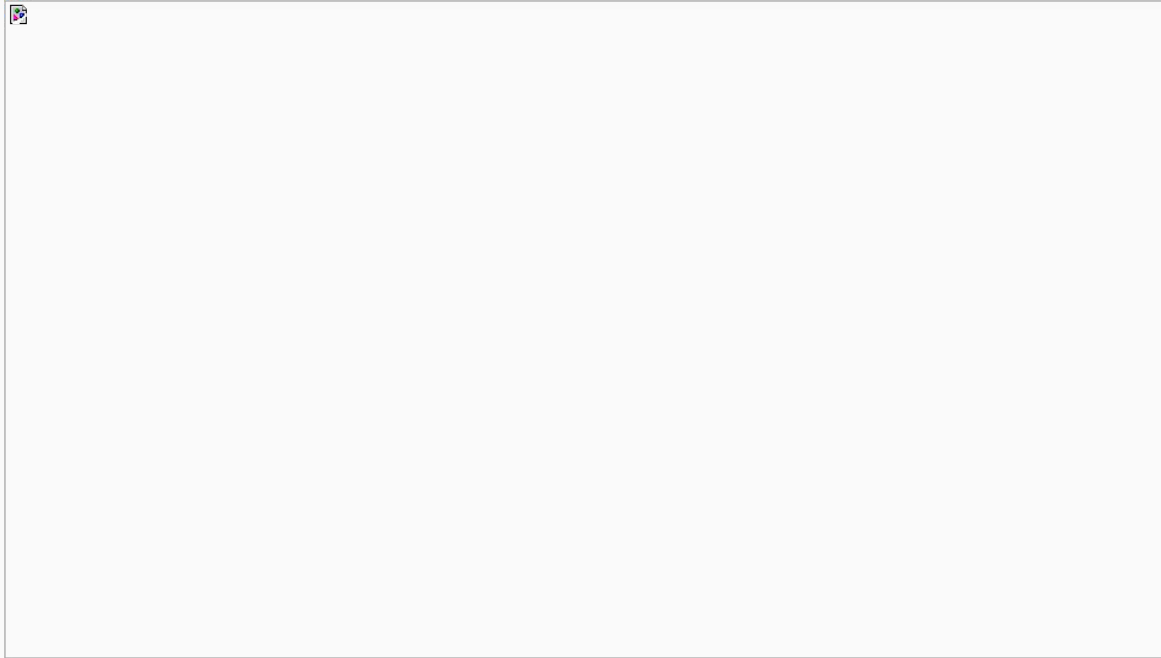
Background and Motivation

- Create Weatherbox that is
 - low-cost
 - accurate
 - reliable/efficient
 - portable
- Collect data to be analyzed for future renewable energy use

Goals

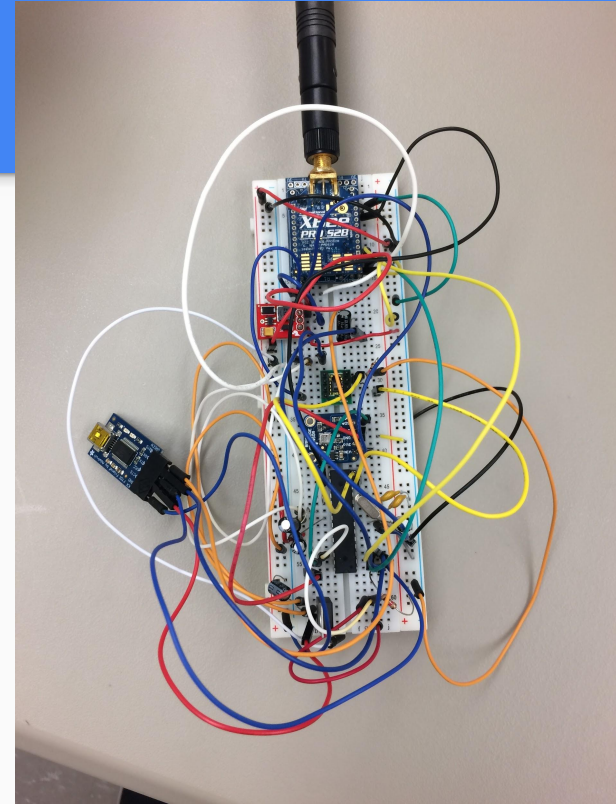
- Eagle/Arduino proficiency
- Improve hardware and software skills
- Time management
- Learn about renewable energy

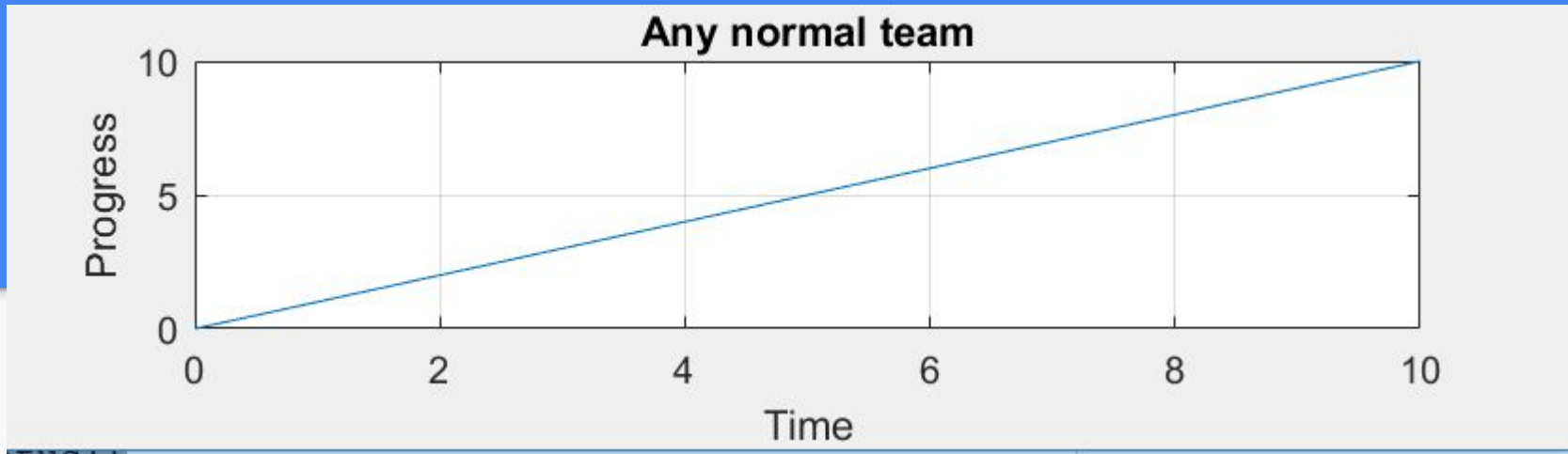
Block Diagram



Progress

- Finished PCB Design
- Finished with housing
- Got Apogee 215 Sensor working
- Started working on XBEE

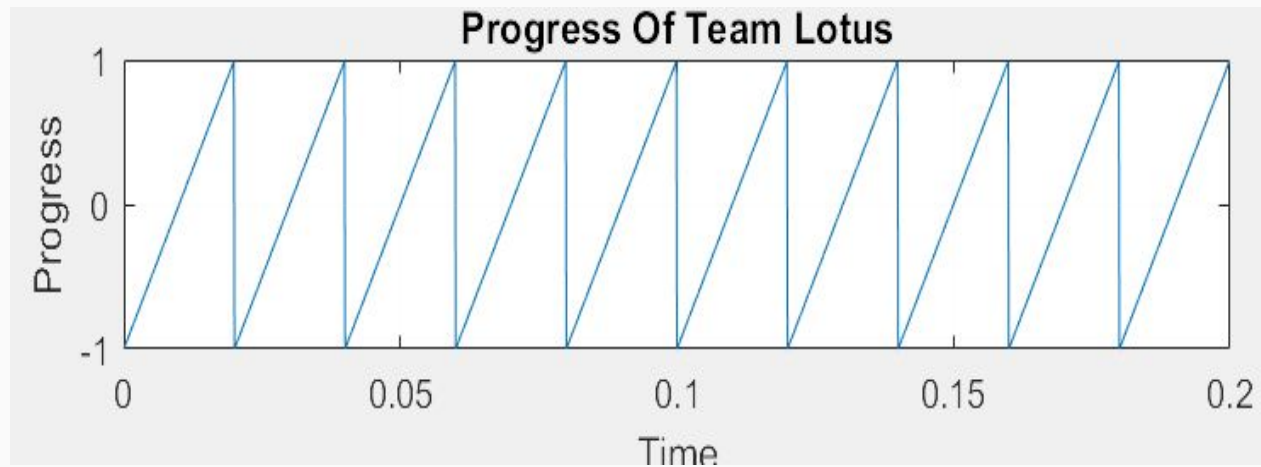




pls help

```
T = 10*(1/50);  
Fs = 10000;  
dt = 1/Fs;  
t = 0:dt:T-dt;  
x = sawtooth(2*pi*50*t);
```

```
plot(t,x)  
title('Progress Of Team Lotus')  
xlabel('Time')  
ylabel('Progress')  
grid on
```



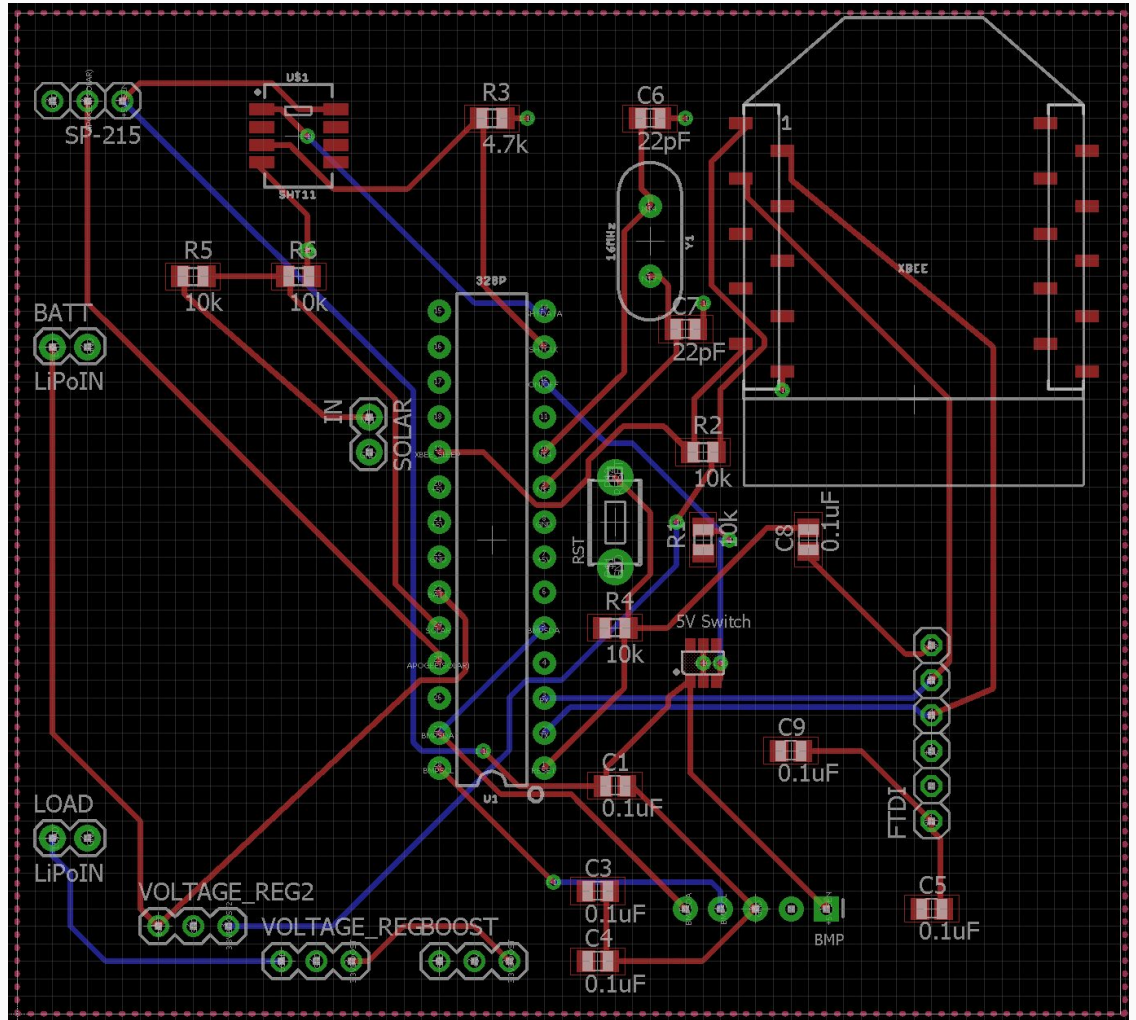
PCB Design

Final PCB Design

- Reduced the amount of vias
- No right angles
- Tested with DRC
- Tested with ERC

Schematic

- Accurately labeled all connections



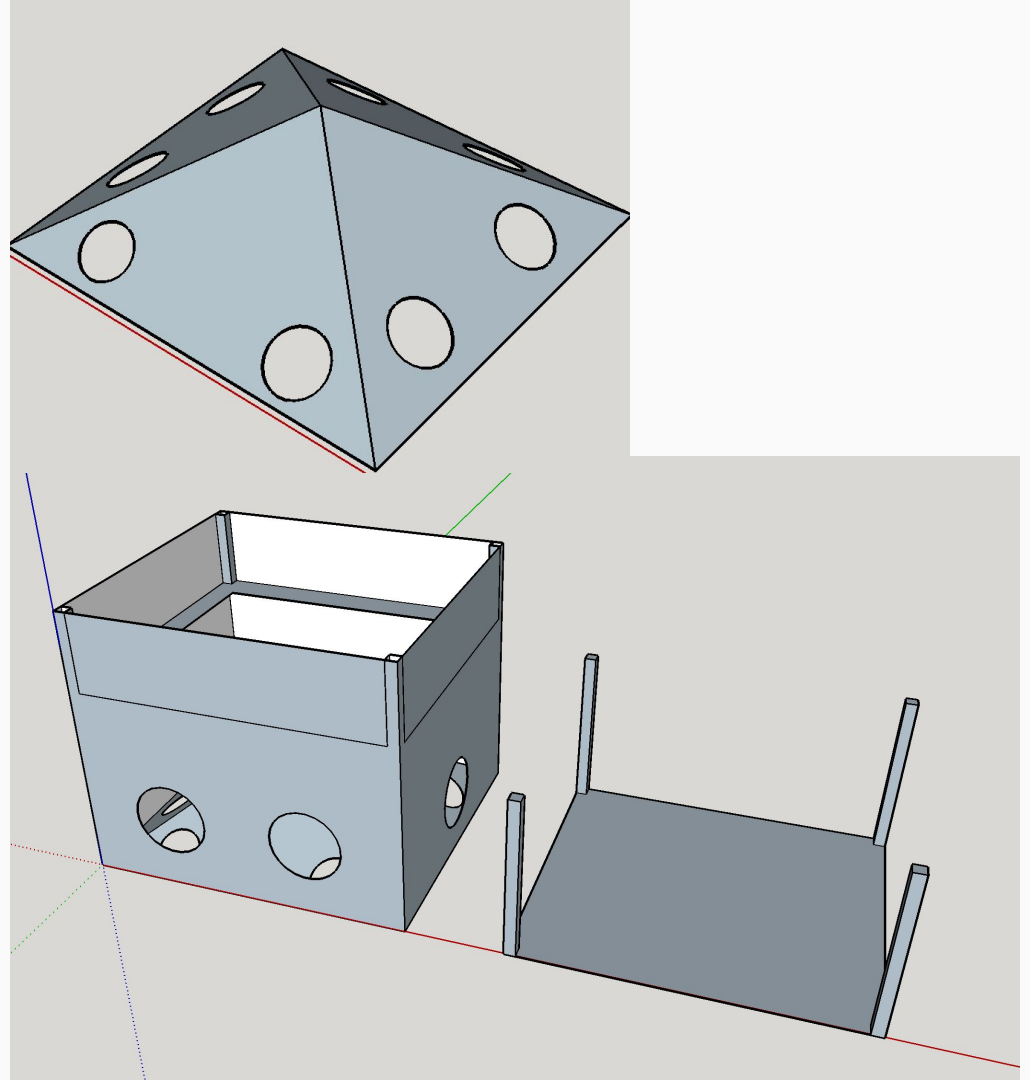
Housing

Ideas

- Minimize printing material, maximize airflow, build against water damage, easy access

Design

- Removable top
- Holding layer
- Holes on bottom and sides below holding layer

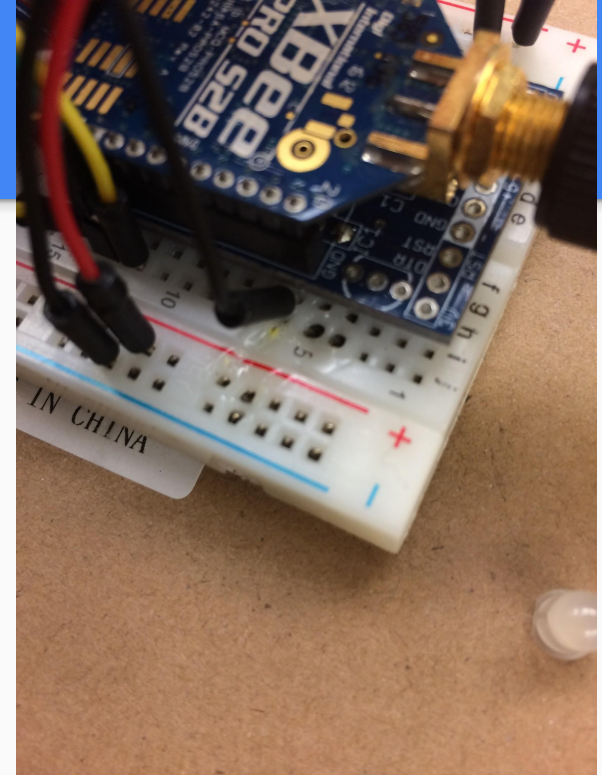


Problems



How many problems did we encounter? “All” -Anon

- SHT11 Sensor
- Loading code onto microprocessor
- Eagle schematic specs
- Housing logistics
- Breadboard melting (voltage regulator)



Solutions

- Needed to name analog pin PC3 instead of 26
- Work on a new breadboard
- Spend more time in the lab
- Ask other lab members for help
- Create multiple versions of housing/board

Future Improvements

- Get SHT11 sensor to work properly
- Send sensor data with XBEE
- Implement charging circuit and solar panel
- Be more open minded

Any Questions?

Just kill me, just kill me
**AH I WAS WONDERING WHAT
WOULD BREAK FIRST...**



**YOUR SPIRIT
OR YOUR ARDUINO**

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