Final Presentation

By Team Snapdragon
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Outline

- Project Background/Motivation
- Goals for Project
- Overall Block Diagram
  - Hardware
  - Software
- Final Status
  - PCB Design
  - Firmware Algorithm
  - Housing Design
- Problems/Improvements

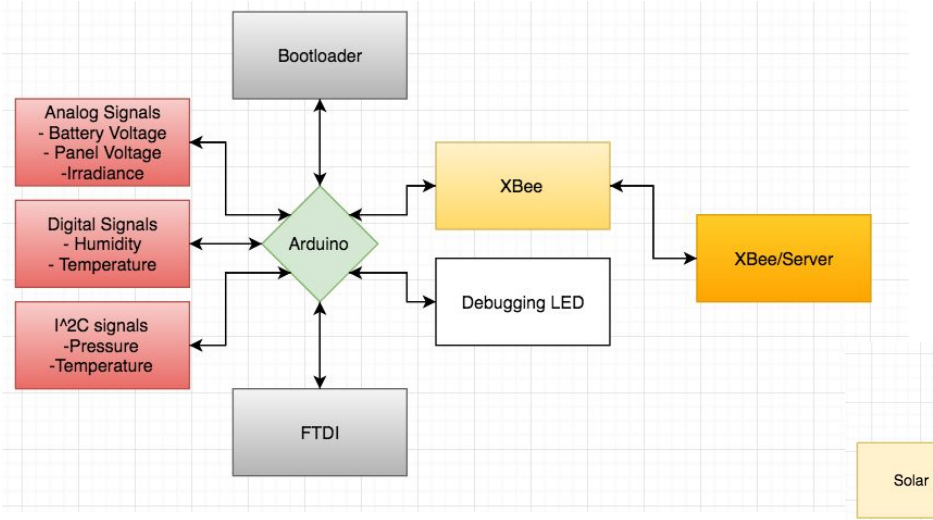
Project Background/Motivation

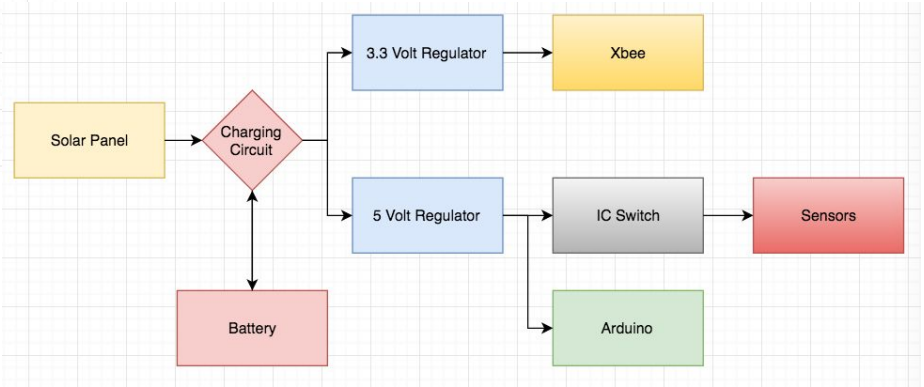
- Design and develop weatherbox
  - Low-cost
  - Accurate
  - Reliable
  - Self-sufficient
- Collects and analyze data

Goals:

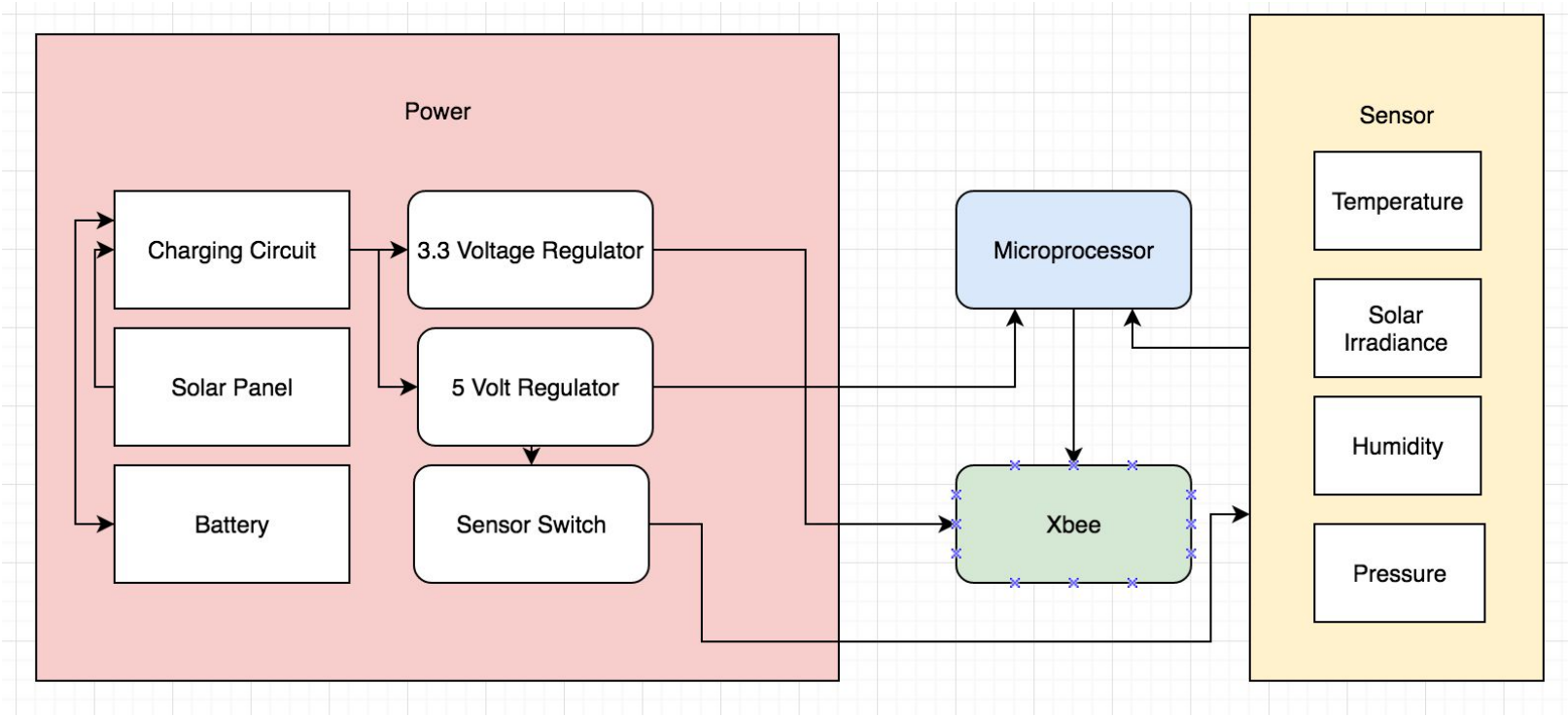
- Short-Term
  - Eagle Proficiency
  - Arduino Proficiency
  - Time management
- Long-Term
  - Complete Weatherbox
  - Compact and efficient

Overall Block Diagram

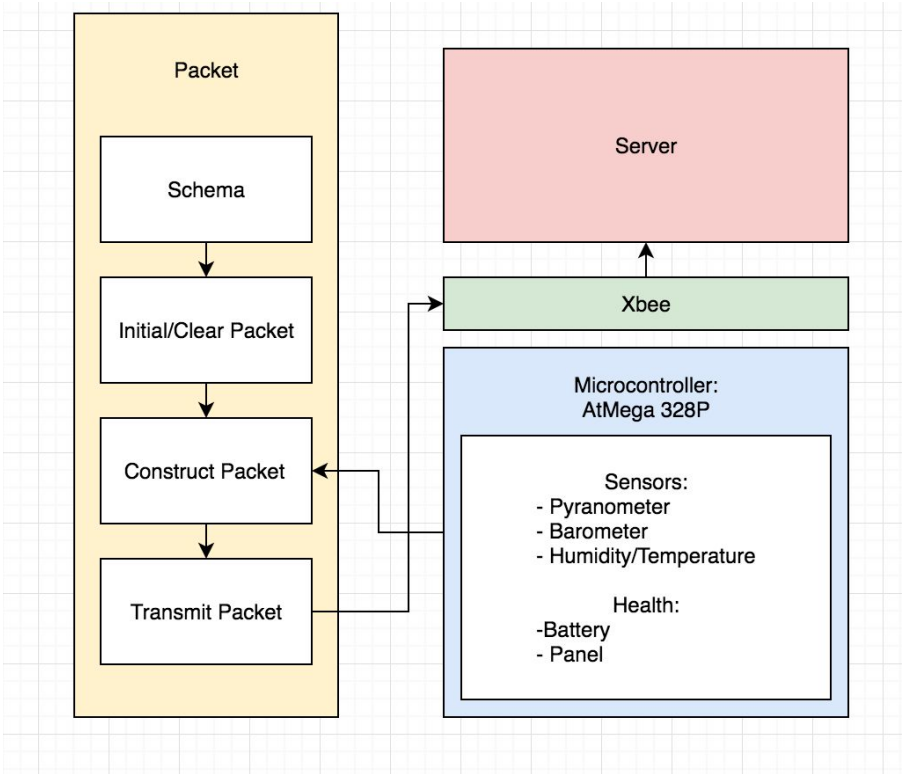




Hardware Block Diagram



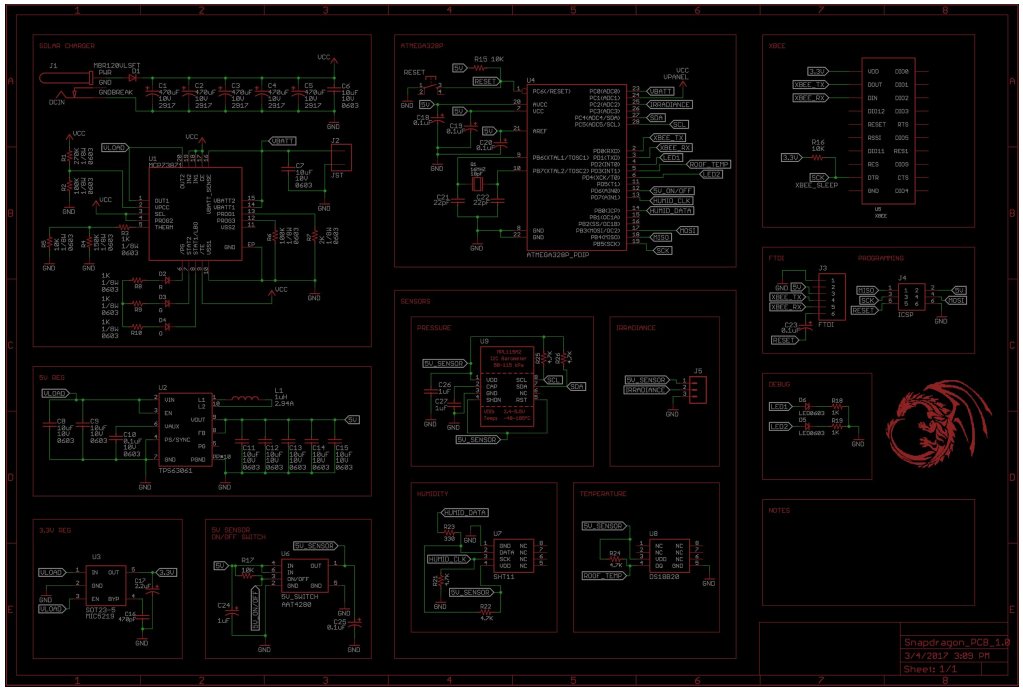
Software Block Diagram



Final Status

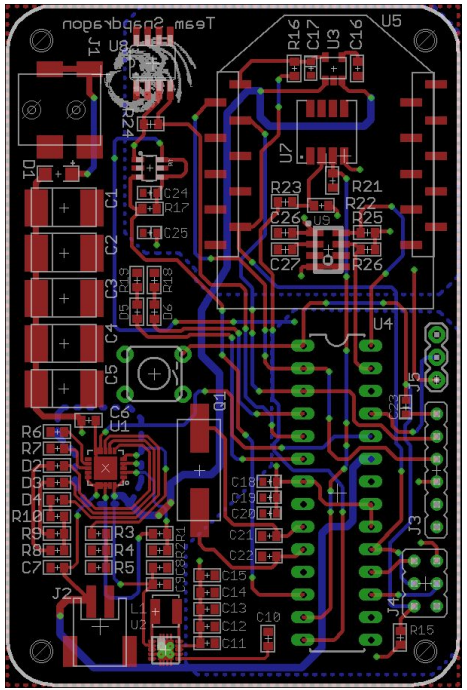
- Completed PCB Design
- Firmware Implementation
- Completed Housing Design

PCB Design (Schematic)



- 5V Step up/down converter
- Changed pressure sensor (5V)
- Header for burning bootloader
- Debug LEDs

PCB Design (Layout)



- Dimensions: 2” x 3”
- 0603, 2512 and QFN Packages
- Split planes
- Space-saving sensor placement
- No components on bottom for ease of assembly

Firmware Algorithm

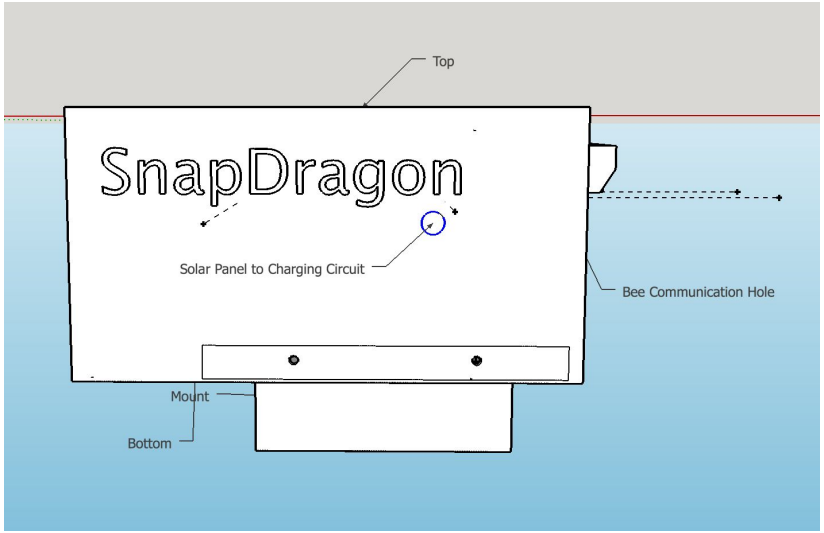
- Initialize Components

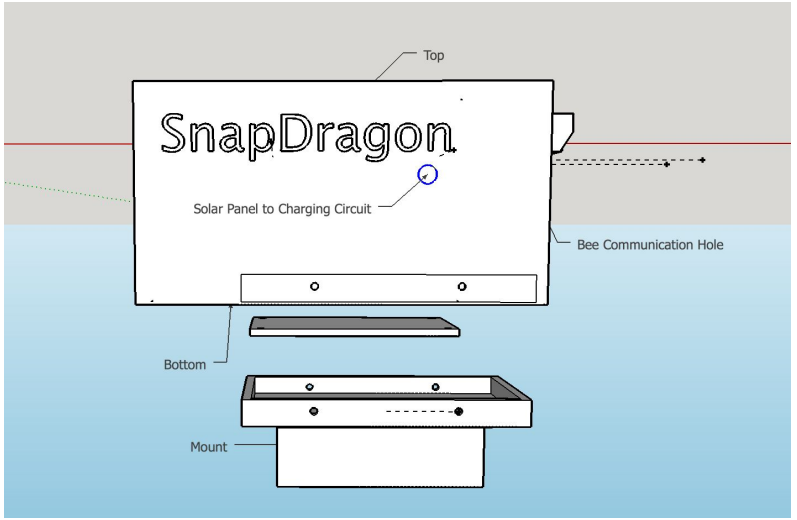
Loop:

- Gather Data
- Initialize Packet
- Put Data into Payload
- Transmit Packet
- Clear Packet

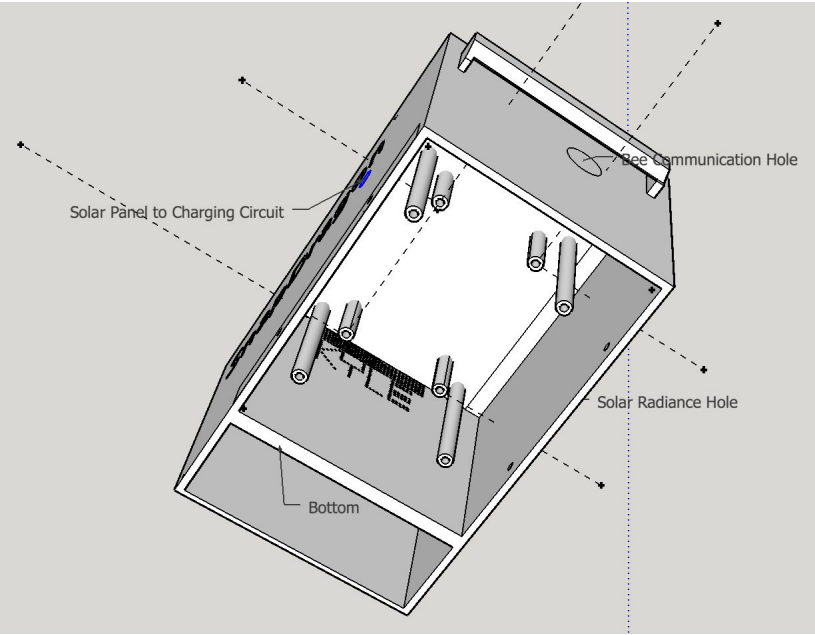
Housing Design

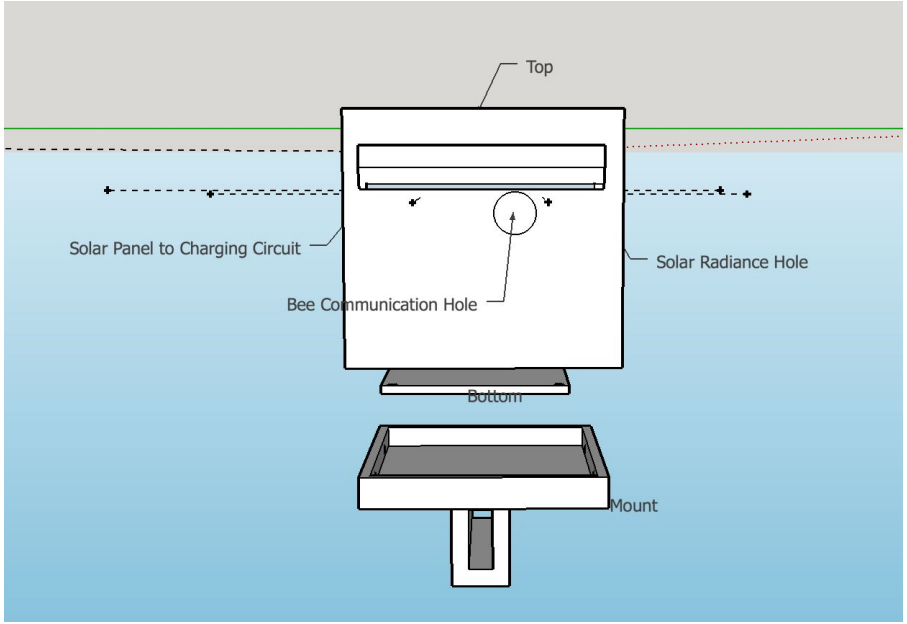
- 6.83” x 3.94” x 4.86”





Housing Design Cont.





Problems/Improvements

- Board: I^2C expansion ports for versatility
- Housing: Minimizing footprint
- No Dim Sum :(

Acknowledgements

- **Advisor:** Dr. Anthony Kuh
- **Project Manager:** Tryston Fagarang
- **Mentor:** Kyaw Hein
- **Leadership Team**
- **Other x96 Teams**

Thank you for listening!
Any Questions?