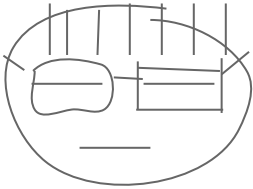# Team Guava

Proposal Presentation

Spring '20

Presentation Overview

- Introduction
- Motivation
- Block Diagram
- Guava Progress Fall '19
- REV C and CIV
- Project Goals
- Learning Expectations
- Progress So Far
- Predicted Problems
- Gantt Chart
- Questions

Team Guava **Introductions**

Diwen Lin

Junior - 496

3rd semester

EE-System

Max Mochizuki

Junior - 396

2nd semester

EE - EP

Riley Sodetani

Junior - 396

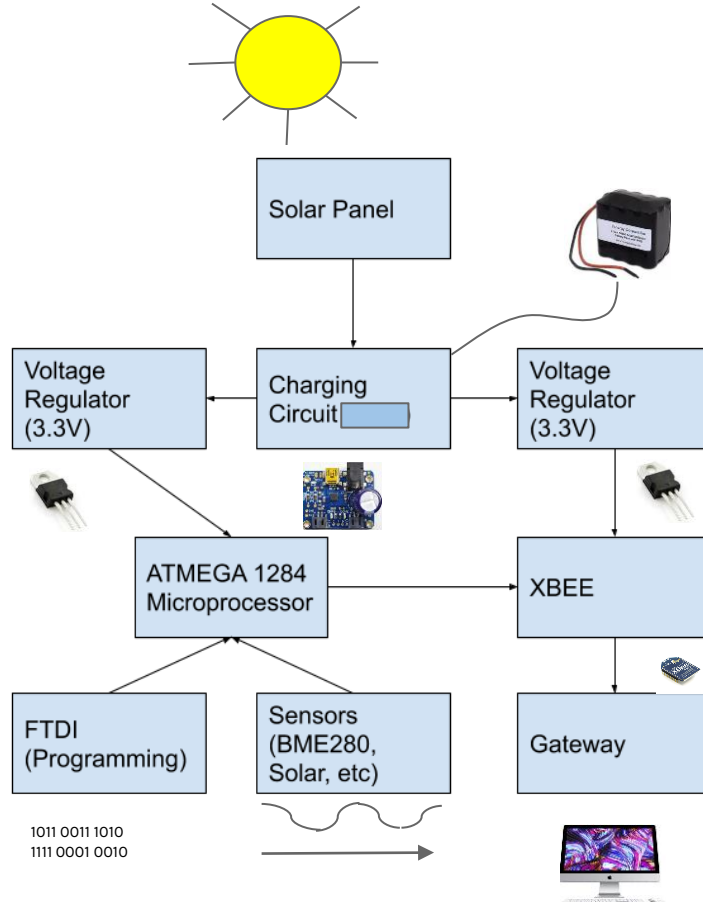1st Semester

CENG

SCEL **Motivation**

Guava is the fifth generation weatherbox team for the Smart Campus Energy Lab.

Team Guava specializes in integrating sensor modules into the board, which will take up less real estate and be better optimized to handle weather data.

We want to allocate the best places to implement renewable energy for the future

Block Diagram

Guava **Progress Fall 19'**

REV C

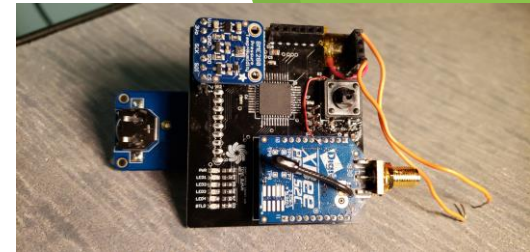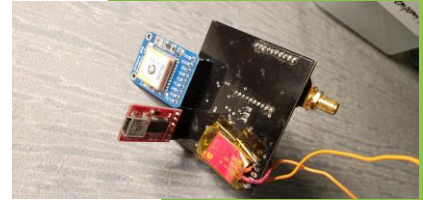- Boot-loaded and Programmed
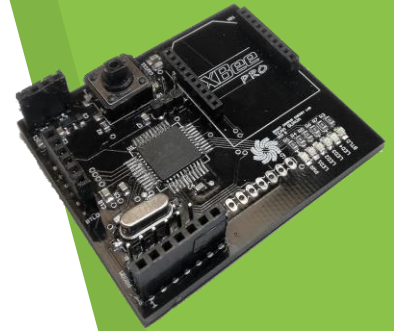- Issue with Xbee communication

REV CIV

- Assembled one board
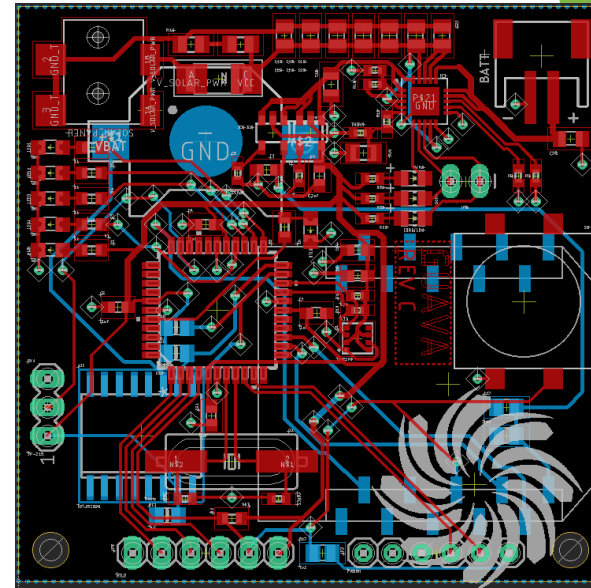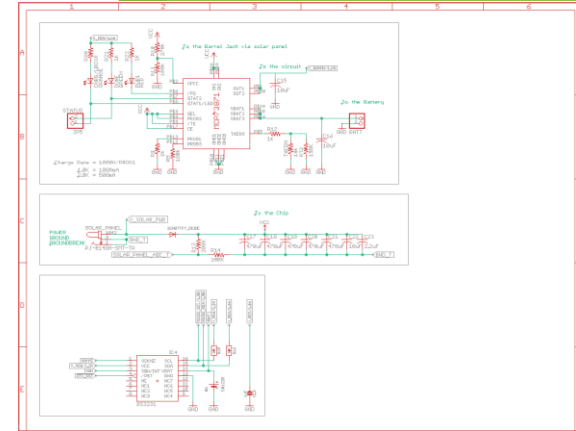- Needs to be boot-load and program

Bare Guava

REV B

- Senpai's work still isolated

REV C Schematic

- L x W 2"x2"
- Implemented Charging chip, BME 280, RTC.
- Headers for Bootloading and programming only
- 3.3V throughout the board @16MgHz

☺ REV C IV

- 2.15" x 2.15"

- Runs on 3.3V (but actually has to use 5V)

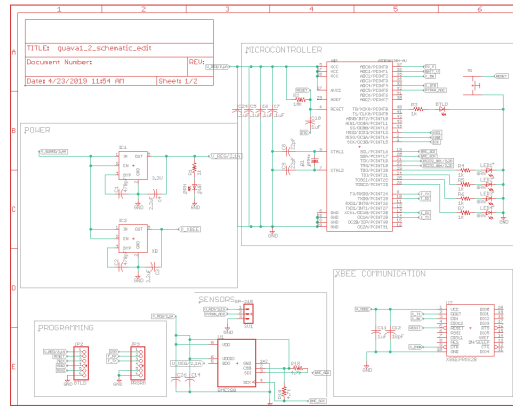- 16MHz MCU speed

- QFP Package for MCU

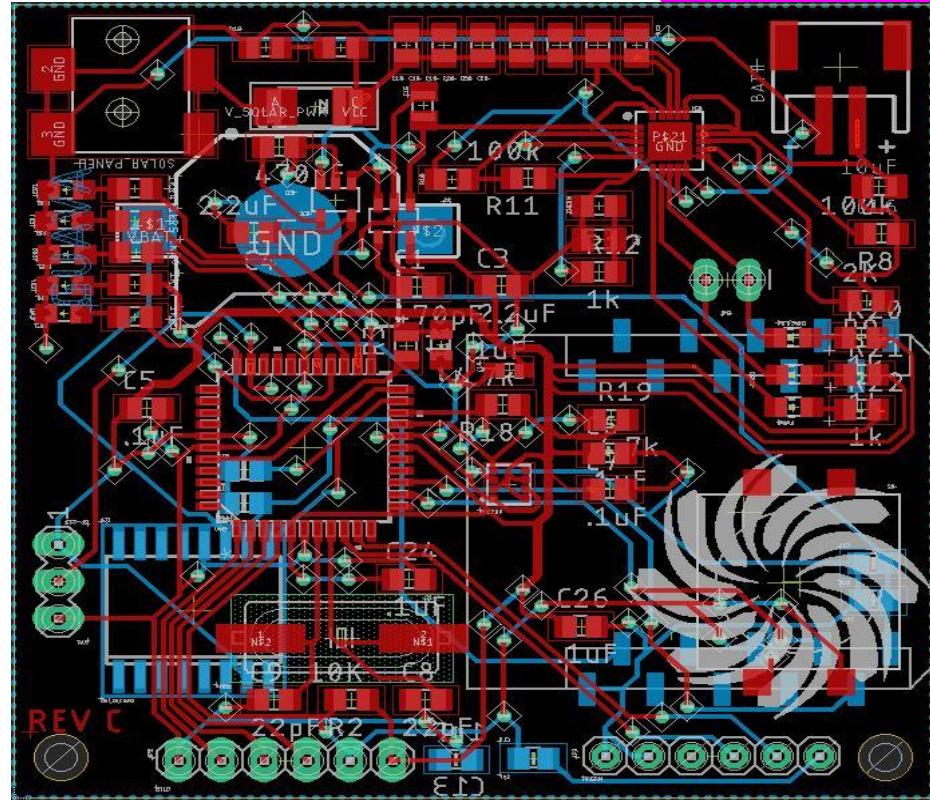- Increased Capacitor and Resistor sizes

REV CIV Schematic

- L x W 2.15"x2.15"

- Implemented Charging chip, BME 280, RTC

- Headers for Bootloading and programming only

- 3.3V throughout the board

9
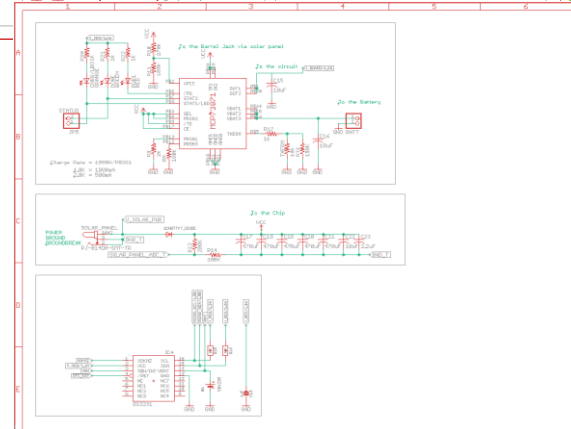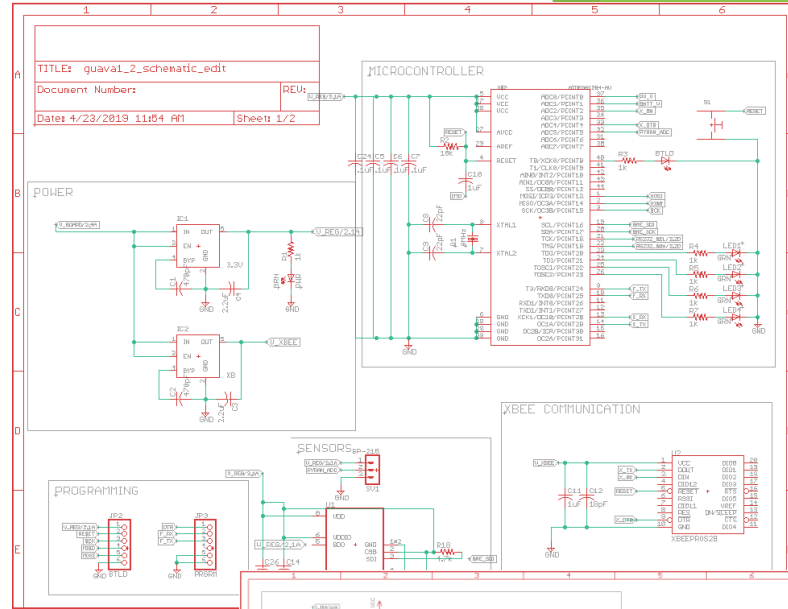
Project **Goals**

Produce a self-sustaining environmental sensor module that will collect meteorological data

- Deploy ASAP
  - Debug REV C
  - Boot-load and program REV CIV
  - Finish Bare Guava
- Compare collected data with accurate data(real time)
- Get design to work all in 3.3V @8MgHz
- Streamline project documentation

Learning **Expectations**

PCB Designing and Layout

- Part Integration
  - Understand sensor circuits and how to successfully pull data
- Power Consumption
  - Learn ways to reduce power consumption in the design and increase efficiency

Documentation and Workflow

- Git and GitHub

Progress So Far

Bare Guava

- Boot-load Atmega1284p
- New members learn Guava design and wiring

REV C and CIV

- Troubleshoot errors
  - Reset button
  - Programming
- Check traces/connections

Predicted **Problems**

Board Behavior

- Trace Errors (Design and/or manufacturing)
- Lower voltage than expected

Other

- Delayed shipping times
- Soldering by hand
- New members
- Both Senpai left Di
- Boot-loader is not compatible with 3.3V @ 8MHz

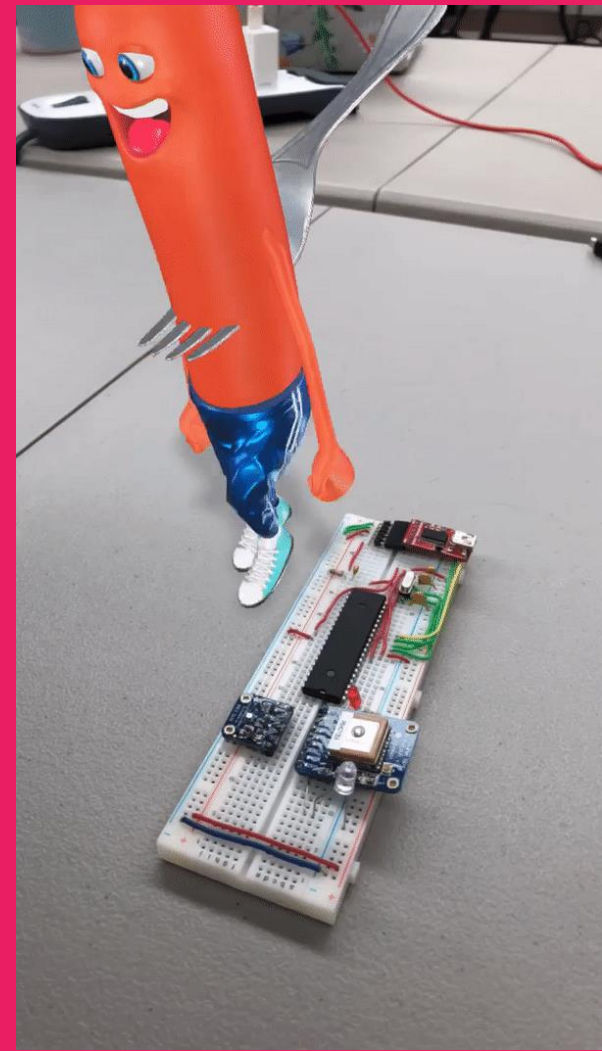| Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Date	1/12 - 1/18	1/19 - 1/25	1/26 - 2/1	2/2 - 2/8	2/9 - 2/15	2/16 - 2/22	2/23 - 2/29	3/1 - 3/7	3/8 - 3/14	3/15 - 3/21	3/22 - 3/28	3/29 - 4/4	4/5 - 4/11	4/12 - 4/18	4/19 - 4/25	4/26 - 5/2	5/3 - 5/9	5/10 - 5/16
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Deploy										r								
Test & Debug										e								
Parts Order and Billing										a								
Build										k								
Final Report										!								

📅 **Gantt Chart**
Spring 20

Thank you!
Any Questions?

CREDITS

We used the following free online resources:

- ▸ Presentation template by SlidesCarnival
- ▸ Snapchat