Team Guava

Proposal Presentation

S18

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Presentation Overview

- Introduction
- Motivation
- Guava Progress F17
- Project Goals
- Gantt Chart
- Learning Expectations
- Predicted Problems
- Questions

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Team Guava Introductions

Riley Cammack

Junior

3rd semester

CENG

Kenneth Lauritzen

Junior - 496

3rd semester

CENG

Sawinna Huang

Junior - 496

3rd semester

EE -Systems

SCEL Motivation

Guava is the fifth and newest weatherbox team for the Smart Campus Energy Lab. The main goal for Team Guava is to create a weatherbox with a new processor and new sensors.

With this new hardware, the new weatherbox will hopefully have better capabilities with implementing new sensors and code in the future.

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Guava Progress Spring ‘18

Implemented new processor (ATmega 1284) and new sensors

- Created schematic and breadboard
- Designed PCB; now being processed for printing

BME280, GPS V3, Apogee 215

Perks of the **ATmega1284**

- Bigger Flash Memory; (4x) 32 kB -> 128 kB
- Increased # of I/O Pins; (+9) 23 -> 32

Project Goals

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

- Make a theoretical power budget
- Implement changes to the software
  - Drop clock speed to 8MHz
- Populate printed circuit board
- Collect data for actual power budget
- Test and Deploy the completed weatherbox

	Guava															
	(Gantt Chart)															
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Date	1/8/2018	1/15/2018	1/22/2018	1/29/2018	2/5/2018	2/12/2018	2/19/2018	2/26/2018	3/5/2018	3/12/2018	3/19/2018	3/26/2018	4/2/2018	4/9/2018	4/16/2018	4/23/2018
Proposal				2/3/18												
PDR							2/24/18									
CDR											3/24/18					
Final																4/28/18
Power Budget																
Housing																
Designing																
Printing																
Parts order/Bill of Materials																
Build																
Fabrication Time																
Testing																
Final Report																

Gantt Chart

Learning Expectations

PCB Designing and Layout

- Part Integration
  - Understand new processor and sensors, further research
- Improve PCB design skills

Fabrication

- Soldering
- Weatherproofing Housing

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🕐 Predicted Problems

Entering New Territory

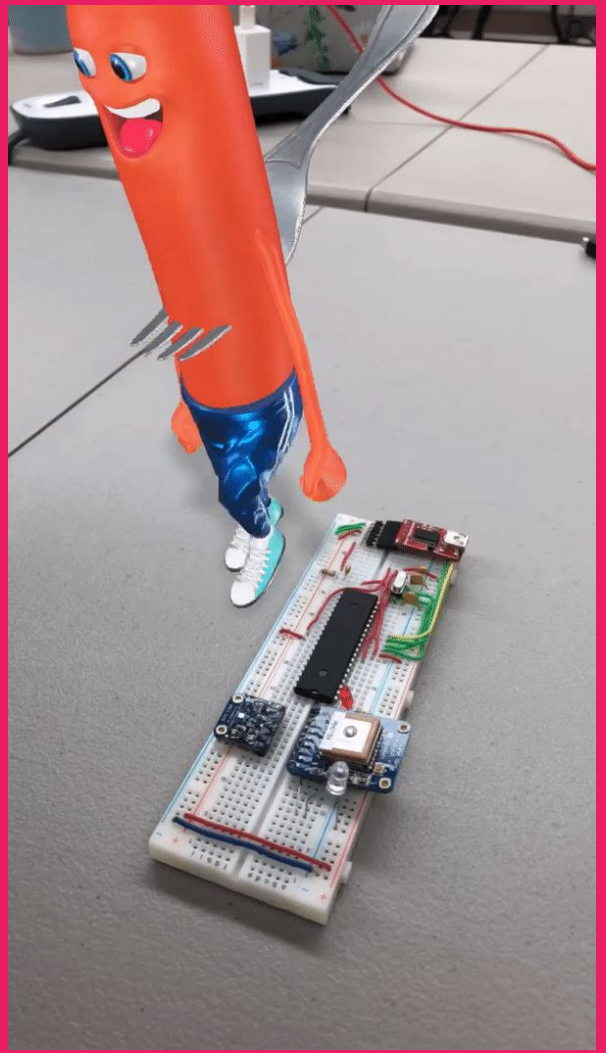
- Theoretical/Actual Power Budget
- Populating/Troubleshooting
- Changing clock speed
- Firmware

Other

- Weatherproofing
- Possible redesign

Thank you!

Any Questions?



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