

# Proposal Presentation

Software Team

# Overview

- Software Unification Team (UST)
- High-Level Block Diagram
- Overview of Subsystems
  - Firmware
  - Gateway
  - Database
- Gantt Chart
- Challenges
- Learning Expectations

# Software Team Unification

- Previous semesters: teams were split up into different systems.
- Merging all systems to form a single system.
- System will gather, send, and store data from multiple weatherbox designs.
- Promotes collaboration and learning.

# Our Team

## Firmware

-  Allie Kim
-  Nathan Lam
-  Dylan Tokita

## Gateway

-  Tim Byers
-  Andrew Obatake

## Database

-  Tim Byers
-  Allie Kim
-  Nathan Lam
-  Andrew Obatake

# High-Level Block Diagram



# Overview of Subteams



# Firmware

- Overview:
  - Sample data through sensors in Weatherbox
  - Package and transmit data through Xbee to Gateway
  - Report status of weatherbox (i.e. Battery, Sensor cond.)
- Updates:
  - Reorganized code and made more modular
- Goals:
  - Have hardware design teams create own device drivers
  - Accommodate Cranberry and Dragonfruit generations



# Gateway

- Overview:
  - Handle incoming data from Xbee devices
  - Decodes packets sent from firmware
  - Module will be used in server.
- Updates:
  - Created Gateway this past summer
- Goals:
  - Usability in both server and client code
  - Reimplement the packet decoder



# Database

- Overview:
  - Storage base for weatherbox sensor data
  - Receives decoded data from Gateway
- Updates:
  - Configured virtual machine
- Goals:
  - Tables for each generation of the weatherbox

# Gantt Chart

	1	2	3	4	5	6	7	8	9	10	11	12	13
Week													
Date	9/10/2016	9/17/2016	9/24/2016	10/1/2016	10/8/2016	10/15/2016	10/22/2016	10/29/2016	11/5/2016	11/12/2016	11/19/2016	11/26/2016	12/3/2016
<b>Presentations</b>													
Proposal													
Design Review													
Critical Design Review													
Demonstration/Final Presentation													
<b>Research</b>													
Firmware													
Gateway													
Database													
<b>Firmware</b>													
Device drivers for different generations													
Functionality with Cranberry and Dragonfruit													
<b>Gateway</b>													
Usability in both server and client code													
Reimplement the packet decoder													
<b>Database</b>													
Multiple table functionality													



# Challenges

- Understanding existing database, firmware and server code
- Understanding libraries
- Implementing a procedure for design teams to test hardware
- Time management
- Updating and maintaining good documentation
- Planning subsystem coordination of data



# Learning Expectations

- Understand the system at a low level
- Git in a team setting
- Learn programming languages
  - Python
  - SQL
  - C/C++
- Object Oriented Programming
- Teamwork and collaboration
- Long-term goal of creating an application to interface with the data
- Establishing the UST and defining our purpose in more detail





*Questions?*