# Final Project Proposal

Team 12

Yan Zhang, Julia Denham

This project is based on the first idea in the “Ideas for Alternative Projects” document on lms. The objective of this project is to create a sensor network that has multiple sensing units and a central control unit. The sensing unit samples data from the sensor and stores the newly collected data. The central control unit collects data from every sensing unit by polling and acts based on the data it receives with a polling rate > 0.1Hz

The project will include two sensing units (raspberry pi’s), one collecting battery level data and another collecting data from a router to see if the router has internet access. Fake data will be used. Then the CCU will poll data from the SUs.

The 3 raspberry pies will be connected to the same Wi-Fi network. The SUs will broadcast their IP address to the network while CCU listening for these broadcast messages. After knowing IP address of the SU, CCU will tries to use a socket to make a connection with a SU and polls data from it. Also, the central control unit will have a web interface to display information collected and send notification on the web interface when the battery level goes below a certain threshold and when the router’s internet access is lost.

Battery

SU1

Web Interface

WiFi

CCU

SU2

Router

For demonstration, the SU collecting battery data will be connected to a circuit with a potentiometer, the value of potential meter fakes battery level data. The SU collecting router data will be connected to a circuit with a two-way switch, the on/off of the switch fakes internet connection status. With this setup, people will be able to see the values displayed on the web interface, updating within 10 seconds after the potentiometer value changes and web notifications will show up within 10 seconds after the potentiometer value drops below a preset threshold or after the switch is turned off.