

Group number: 19

Project title: Portable Nutrient Data Collection System - Phase II

Client &/Advisor: Dr. Qiao & Dr. Qeu

Team Members/Role:

Ben Theisen - Group Leader

Michael Rupert - Webmaster

Zakk Belloma - Key Concept Holder

Ben Engebrecht - Communication Leader

Logan Boas - Communication Leader #2

Ryan Young - Key Concept Holder #2

**o Weekly Summary (Short summary about what you did this week)**

- ◆ We demoed with the existing project, came to the conclusions to use the voltage booster method of gaining data to the spectrometer and connect the raspberry pi to the spectrometer using the GPIO pins. Started creating a concept sketch diagram.

**o Past week accomplishments (please describe as what was done, by whom, when)**

- Contacted Yang Tian about meeting to get an insight into the previous group's contributions to the project - Rupert
- Attempted serial communication with spectrometer as well as USB communication - Many
- Began researching how to effectively use bluetooth in an Android application - Zakk Ben
- Found parts for the voltage booster portion of the design that should allow for a better design - Logan
- Met with faculty mentor to test spectrometer and get some hands-on experience with how it works - All

**o Pending issues (if applicable)**

- Ordering the microcontrollers and voltage step up converter that we will use for testing
- Get a breakout board for the GPIO pins of the spectrometer

**o Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
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Michael Rupert	Contacted Yang Tian about meeting, will have met with him by our weekly meeting time on Thursday. Attempted serial communication with Spectrometer, tested USB commands with Windows and Linux.	3	14
Ben Theisen	Reviewed Literature, Communicated with advisor.	4	13
Zakk Belloma	Researched bluetooth on android. created a sample app to test bluetooth connections	3	11
Ben Engebrecht	Reviewed Datasheet, began planning hardware design	3	11
Logan Boas	Researched Step up voltage boosters for 3 V - 400 V, worked on creating a concept sketch diagram	4	13
Ryan Young	Looked into RS-232 commands for spectrometer we will be working with. briefly looked into pixel data and how it's used.	4.5	14.5

**o Comments and extended discussion**

Discussion about learning USB commands, basic functionality of our device and the drawing up of a concept diagram.

**o Plan for coming week (please describe as what, who, when)**

- Meet with advisor on Thursday -All
- Meeting with Yang Tian, group member of last phase of project. - Michael
- Start creating app and looking into bluetooth communications -Zakk, Ben T
- Work on extracting data from the spectrometer - Ben E, Ryan

**o Summary of weekly advisor meeting (if applicable/optional)**

Discussed getting data out of the spectrometer. Had a demo meeting with Shenmin (grad student working with the project) to see how to work the spectrometer. Attempted to get serial data out through USB with no success. Made decisions in the advisor meeting to get serial data out from the spectrometer through GPIO pins. Started to form sub-groups to work on different aspects of the project. Those different groups include, app development (bluetooth

communication included), data extraction from the spectrometer, and working on the voltage booster and circuitry of the system.