Smart Vibes Project Log

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Starting on January 23, 2017

1   Monday, January 23, 2017

- Worked on first presentation and report on Google Drive.

- Converted the Google Doc into a Latex doc

2   Tuesday, January 24, 2017

- I was chosen as team leader by Joshua due to his busy schedule impeding him from leading.

- Performed presentation 1.

- Jordan bought a Feather for about $40 in order to start programming it. The reason he bought it on his own is because we don't know when the parts will get ordered.

- Submitted first presentation and report to Git repo. Also submitted two peer assessments of Positive Resonance and Intellisense teams.

To do list:

- ~~Fix system level design overview.~~ (Completed on 1/27/2017)

- ~~Create a Github private repo to host Design 2 group work.~~ (Completed on 1/27/2017)

3   Thursday, January 26, 2017

- Submitted peer assessments for Poly Builders, Team Concrete, and Phoenix Designs.

4   Friday, January 27, 2017

- Created a private Githup repo named Design 2 for our group to host code and other work.

- Begin working with Adafruit Feather that Jordan ordered and received

- Learning objectives for Adafruit Feather:
    - Write up a simple LED program
    - Use SPI
    - Connect using the built-in Wifi module

- Setup procedure for Adafruit Feather:
    1. Insert the header pins on a breadboard and place the Feather on top of the pins. No soldering required.

2. Went to the following website: https://learn.adafruit.com/adafruit-feather-m0-wifi-atwinc1500/.

3. Download and install Arduino IDE v1.6.4+.

4. Go to `File` → `Preferences`. Type in https://adafruit.github.io/arduino-board-index/package_adafruit_index.json into the **Additional Boards Manager URLs** box.

5. Navigate to `Tools` → `Boards` → `Boards Manager`. Install **Arduino SAMD Boards** version 1.6.8

6. Install the **Adafruit SAMD** package.

7. Quit and reopen Arduino IDE. After restart, new boards will be listed on `Tools` → `Boards`. Select the appropriate board.

8. Install drivers (Windows only). Link: https://github.com/adafruit/Adafruit_Windows_Drivers/releases/download/1.0.0.0/adafruit_drivers.exe.

5 Friday, February 3, 2017

Revised the functional diagram and bill of materials.

6 Monday, February 6, 2017

- Worked on presentation 2.

- Worked on report 2.

7 Thursday, February 9, 2017

- Met together with team during class time, even though it was cancelled, to work on programming.

- Josh began designing the casing in SolidWorks.

- Marc was given the task of learning the cloud access aspect of this project.

- Jordan and I will program the sensor.

- Can SPI communicate with parallel devices at the same time like I2C? `SPI devices communicate in full duplex mode using a master-slave architecture with a single master. The master device originates the frame for reading and writing. Multiple slave devices are supported through selection with individual slave select (SS) lines.`

- Does the wifi chip not allow other communication to happen simultaneously? .

8 Friday, February 17, 2017

- Go together with Marc and Jordan. Jordan and I looked how to get the wifi working. Marc took charge of learning how to push stuff to Azure cloud.

- I managed to scan for networks and connect to an access point set up by Marc with the Feather microcontroller.

- We are left with the question of how to connect the Feather to MS Azure and push data to it.

9 Friday, February 24, 2017

- Met together with my team at 11am to work on the presentation due on Monday.

10 Friday, March 3, 2017

- Began programming the other Feather that we received.

- Follow the wifi tutorial on this Adafruit page.

- Go to **Sketch → Include Library → Manage Libraries** and search for **wifi101**. Install the latest version.

- Go to the Adafruit page for the LSM303DLHC to learn how to wire it up and write code for it.

- Installed the LSM303DLHC throgh the Library Manager and the Adafruit Sensor library from the git repo.