Phase 2: Device Software

Overview:

Your code will play a key role in driving your device and may span across several different technologies. This phase of the project expects you to build and submit a functioning suite of methods that work with each facet of this project that will be driving your device

Due April 15, 2016

Considerations:

Consider the following as you work on this phase (this all should have been included in your Project Proposal turned in on 3/14):

Input / Output

- What processing will be necessary to get from an input to an output?
  - How will this work will be broken into different modules?
  - What work should be done where?
  - (do you plan to have additional drivers communicating with your bean/arduino? such as: an iOS app / web server / some other device)

Testing

- How will you test your code's functionality independent of hardware?

Resources / Guidance

- What frameworks or technologies might you use? (eg. XCode, NodeRed, AppleScript)
- Web resources that outline or describe each component (or each system) in a functional context. E.g.,
  - "Real-life" examples of your devices. List all example project websites, tutorials, or forums where someone has actual real knowledge about using your components.
  - Where is there potential for trouble with your sensors or components? (eg: Our UltraSonic rangefinders have a bug that makes them practically unusable on a real device — do your research to find out if this might be a problem with your hardware components!)

Testing & Debugging:

We have two parts of our device that have room for failure—on the hardware side & on the software side. We would like to see you iteratively build and test your code independent of your hardware for the first week of this phase. This way if your hardware has problems, they aren't mistaken for software bugs (and vice versa).

Deliverables:

Mon, April 11 (7:00am)—Preliminary Code Submitted

We will be checking in with each team on Monday, and would like to see some body of work from your team that we can give you feedback on. This code should be functional and

encompass the bulk of the functionality of your device. If it is not functional, submit and put comments in where you believe you have a problem.

```
provide comp50wd proj3.2_prelim <your files>
```

Fri, April 15 (5:00pm)—Phase 2 Deliverables

Your final deliverables for this phase are as follows

1. Functional, Commented Code for:
   - Arduino Sketch
   - iOS application (if applicable)
   - Web Interface (if applicable)

2. Up-to-date Fritzing model (breadboard view & circuit view)

3. status_update.pdf which includes the following:
   - What work did you get done in this phase?
     - Who worked on what?
   - How does the work you got done compare to the goals you outlined in your Project Proposal for this phase
   - What is working as expected?
     - If anything is not working as you had hoped, what do you plan to do in order to fix it going forward?
   - How does your code interface with your hardware? (brief summary so that we can have a sense of your overall architecture; what is different pieces of code is driving?
   - How did you test your code independent of your hardware?
   - Directions for how we should...
     - Set up your device / code
     - Test your device / code
     - Anything we may need to set up or download

These files should be provided no later than 5:00pm on Friday

```
provide comp50wd proj3.2 status_update.pdf <your files>
```