Real Time Embedded Systems Spring 2019
"Solo project"
Term Project Proposal Guidelines

Project Guidelines

Overview:

- Design a wearable device that can accurately and reliably detect a drowning or falling person. NOTE: robustness is a big deal, if I am drowning and it shorts that is not good. If I fall and it breaks that is not good. It only make sense to make it robust, a requirement by nature of the project. You may wear this device anywhere. Be creative.
- Don't need to make an Apple product, but don't "duct tape and bubble gum" it either.

Requirements:

- Be reliable, should not matter how I fall, meaning it should work regardless of body posture after falling or direction of fall etc. I can trip and fall forward, it should work.
- Robust, part of reliability. If I fall and it breaks what is the point.
- Visual indication of event detection,visually show me that it detected something
- Be accurate, if I trip but recovered my balance it should not trigger. If I wave my arms gently as if I am drowning it should not trigger, arms of a drowning person is not at all gentle.

Provided Materials:

- 1 Accelerometer
- 20 dollar worth of material per person, even if you buy it out of your own pocket from another vendor that is not digikey or adafruit. Include the item and price in BOM but just let us know you want to buy that item yourself on the BOM. You will submit your projects after the demo for hardware analysis, we will know if you secretly used sensors that were not accounted for in BOM. Production cost is a huge factor of the engineering world.

Restrictions:

- You may use additional sensors as long as you do not go overboard, 20 touch sensors all over the body. Be reasonable.
- One Teensy per project, no 5 Teensy chained together

Grading Criteria:

- Performance (20%)
- Creativity (20%)
- Code (20%)
- Presentability (15%)
- System robustness (25%)

BOM Guidelines

One submission per person. Please be neat and concise. Give us the shopping cart with at most 20 dollar per person worth of material from digikey and adafruit ONLY. For solo project BOM, LABEL YOUR BOM WITH SOLO in it. MatthewCampisiBOM_SOLO.pdf, so we do not mix up the solo and group project BOM and cause delays and confusion. There are a lot of students. The BOM should have the following format.

Item	**Description**	**Link**	**Amount**

BOM Due Date

Due 04/17/2019

Submission on NYU Classes