Hannah and Selina Li

SE 101 Project Proposal

Goal: Create a simulation of the scream canisters from the movie “Monsters Inc.”. In other words, create a game that “collects and stores” screams. The purpose of the game is to fill as many canisters as possible within a time limit.

Hardware:

- Arduino
- Mike
- LEDs
- Arduino LCD display

Software:

- Process sound input from the mike; volume, pitch and/or duration of input
- Convert sound level to a meter on the screen and have a light turn on to indicate a “full” canister
- Track the number of canisters filled
- Compute leaderboards for best “scarer”
- Design a UI that has basic interactions with the user
    - Start game, highscores, in-game results, and other features

Prototype plan:

1. Output a message to the screen
2. Detect audio with the mike
3. Turn on a LED light when audio input of a certain condition is detected
4. Design and present a progress bar that has 10 levels (10 bars) on the LCD display
5. Program the bar to display the appropriate level based on some input (ex: integer)
6. Output the progress bar that matches the corresponding sound input
7. Create a UI that starts then ends the game
8. Integrate the progress bar into the UI design
9. Store leaderboard info
10. Display simple leaderboard on the LCD screen

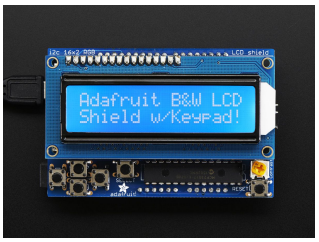
Extra stuff:

- Create a container for the LCD that resembles a scream canister

Challenges:

- Displaying a progress bar on the LCD screen
- Processing data from a mike (we have no prior experience with this)
    - Ex: varying speed by which the progress bar increases with the volume of sound recorded

- Arduino and LCD screen recommend
- LCD shield >>>



Proposal

- Point is to mitigate risk
- Identify unknowns and challenges in the
- List all hardware and software elements
- Need a prototype plan (**Experimental and Vertical prototype**)
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Make lots of commits that are non-trivial (legit)