Present: Dylan Rowsell, Harley McLachlan, Anika Sheikh, Riku Makita, Adham Sorour, Raman Kaur
Purpose of Meeting: Finalize on idea
Minutes:
Meeting started at 11:06 AM

A. Smart Window Hardware Implementation

- Raman shared her research on hardware implementation of smart window
    - Can have white background modified to whatever size
    - Can use flex led strips
    - Can have dimmers externally and internally
    - All materials can be found under $40
        - $40 for 16 feet UG high CRI
    - Voltage dimmer has less frequency, so it flickers more which is not what we want
    - Can use pulse width to make it more natural
        - It is expensive
    - Powering
        - AC adapter or
        - LED batteries to make it portable
    - Can connect to Arduinos for integrating with software functionalities
        - Raman owns 6 Arduinos
        - Harley suggests using Mega as a possibly better alternative
            - It has 250Hz pulse rate which might solve the flickering problem
    - Dylan suggests using thin sheet of glass in front as lens on top of LEDs
        - Name: Frensel
        - Raman will do further research on this

B. Smart Window Software Implementation

- Anika shares research on software implementation
    - App can send information in packets each time user selects different weather mode
    - Server – Over Wi-fi
        - Can possibly use python socket
    - OpenWeatherMap
        - API to get current weather data
        - Free plans include 60 calls/min

C. Joystick Implementation

- Riku shares research on joystick idea
    - Apple has a joystick that can link up to iPad
    - This can be integrated to the wheelchair
- Dylan shares research on joystick ideas
    - Joysticks are relatively cheap
    - Can electrically wire it up with micro controller (analog)
        - Need rechargeable battery
    - Micro controller can be connected via Bluetooth
        - Does not make sense to do it through charging port
    - Each wheelchair currently has built in joystick
        - So we would have to build a wheelchair with the joystick

    - Need to build joystick, micro controller, and mounting arm

D. Reminder idea implementation

- Harley shares research on the idea
    - First investigated RFID
        - It is do-able, but it would be bulky because the tags would have to big enough to measure distance properly
        - Scanners can not get through conductive materials so it would not be able to detect phones inside pocket
        - Riku asks which items will the RFID not work with? Because there are some small chips
            - Harley: smaller chips indicate smaller range detected
    - Smart mirror implementation
        - Use raspberry pie for face recognition that is built into mirror
        - Can sense who is at the door and remind them what to bring
        - Can connect to phone calendar for dynamic reminders
        - Cons
            - Not automatic
            - Relies on user's habit to look in the mirror before leaving the house
        - Pros
            - No tags so not bulky
        - Dylan worries this takes out the reminder aspect of the initial idea
- Adham shares research on idea
    - The door would only detect if phone was with user, then the phone can detect the rest
    - Bluetooth based technology that can be customized to different people
    - Cons – must remind the user even if they have all needed items
    - How would you detect the phone?
        - Use mac addresses in Bluetooth installed on door
- Dylan suggests tag on little items similar to price tag which user will remove when they need to use the item
    - Harley mentions that it relies on people remembering to remove the tags
- Dylan suggests a backpack that detects if needed items are inside it
    - Adham mentions it wont detect items not in backpack like phone or keys

E. Voting on Idea

- Adham – Reminder Idea
- Anika – Reminder Idea
- Riku – Reminder Idea
- Dylan – Smart window
- Raman – Smart window
- Harlet – Smart window
- Conslusion: Tie between 2 ideas but Riku, Dylan, Raman, and Harley does not feel strongly for any specific idea so we chose the Reminder Idea

F. Things to do before next meeting

- Each person writes 10 specifications for the reminder idea on Google doc to avoid duplicates

- Everyone research on further implementation on reminder idea

G. Next Meeting

- 2022-06-06, Monday 2:30PM-3:30PM on Discord

Meeting is adjourned by Dylan at 12:16PM