Group Members: Tarun Veeraraghavan, Cormac Kneup, Ryder Granson, Aiden Reynolds

Contribution Table:

Name	Contribution percent	Initials
Tarun veeraraghavan	25%	TV, RG, CK, AR
Cormac Kneup	25%	TV, RG, CK, AR
Ryder Granson	25%	TV, RG, CK, AR
Aiden Reynolds	25%	TV, RG, CK, AR

Description:

Our product is a hat that's sole purpose is to help sight impaired individuals know what is in front of them when they usually would not. The hat utilizes a camera that scans the environment and connects it to openAi to help identify things that the camera sees in active time. The hat is also equipped with a speaker to tell the individual what the ai has identified. The product also comes with a wrist band. This wrist band is equipped with a button control sensor and vibrator. The button is pressed by the individual to turn on or off the equipment only when it is needed, and the virator vibrates along the skin of the individual alerting them that something is in front of them. Our product will be charged manually with a cord or other.

Functional requirements:

1. Camera should be able to process inputs properly
2. Audio feedback
3. Haptic feedback
4. Good control system
5. Power and connectivity
6. AI modal data processing

Non functional requirements

1. Should be able to feed audio within 5 - 6 seconds of camera input
2. Model must be able to identify the images with at least 80 percent accuracy
3. Should operate for at least 4 to 6 hours
4. Audio and volume should be adjustable

5. Lightweight battery so it doesn't feel too heavy
6. Safety. Should not burst or injure the head

Constraints:

1. Hardware. Since it should be portable, the devices should be lightweight which means the performance can be a bit off
2. Camera should not be irritating to the skin
3. Dependency on OpenAI to process images / camera input should be stable
4. Should cost less than 35 dollars
5. Camera data should not be stored anywhere for safety concerns
6. Hat should be cool and not overheat

Inputs:

- Camera
- Button

Outputs:

- Audio Speech via a Speaker
- Vibrator for haptic feedback

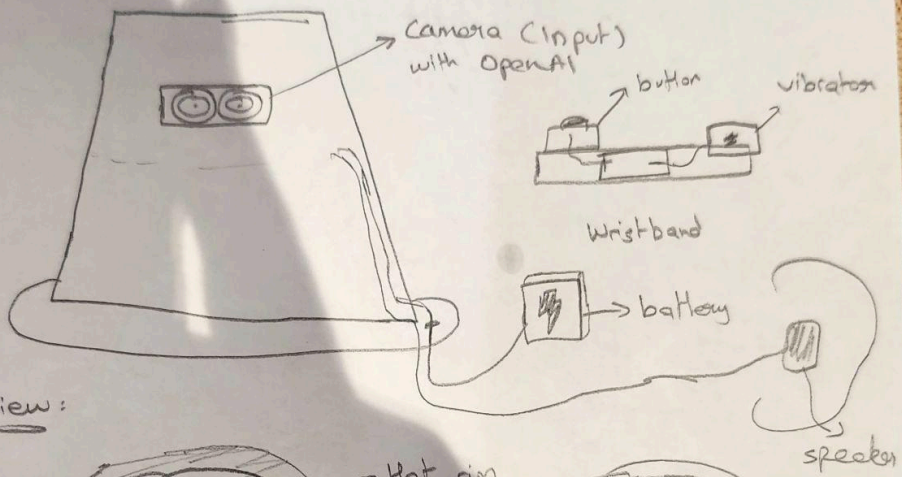
Components needed:

1. A top hat
2. Camera to process images and have real time capabilities
3. A wristband
4. A speaker
5. Multiple wires, pins
6. Aurdino
7. Bread board
8. A cardboard and scissors for stationary purposes
9. A portable battery
10. Button
11. Vibrator

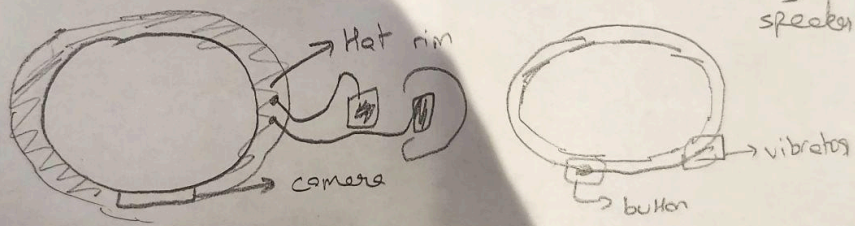
Sketch:

Final product sketch

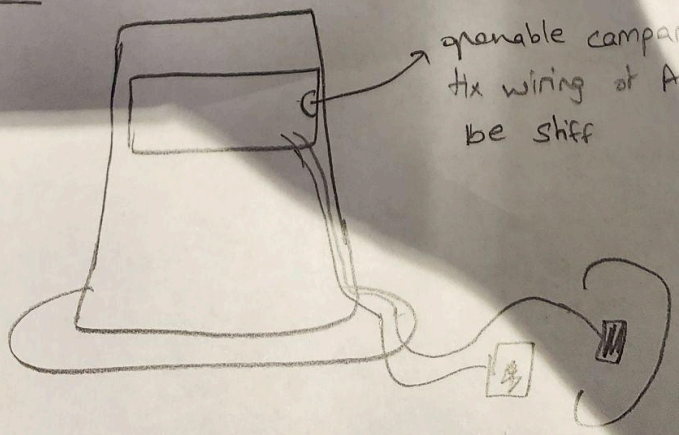
Front view:



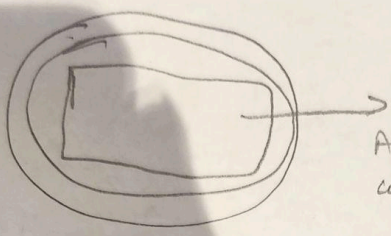
Top view:



Back view:

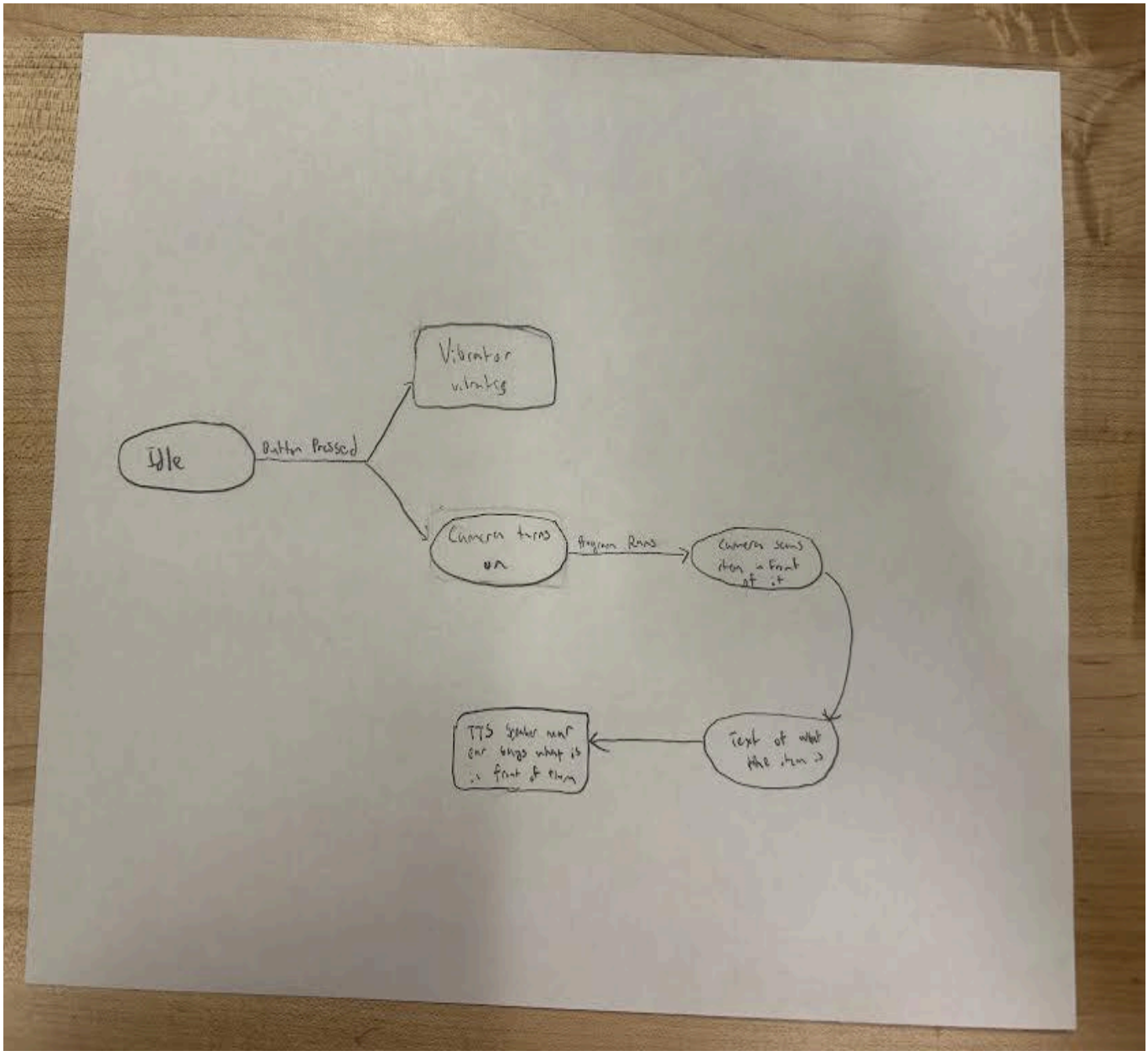


Bottom view:



compartment to hold Aurdino, bread other important connections

State Diagram:



Link to Gantt Chart:
Gantt chart