**Eye tracker**

Design of glasses:

1. Use of normal glasses and attaching an arm for the sensor support.
2. Designing or choosing a 3d model and printing the whole glasses with an arm support.

Methods for eye tracking:

1. Using 4 QTR-1A Reflectance Sensor placed at both sides, top and bottom of eye, we can determine the position of eyeball. But this would result in lack of visibility for the user.
   * <https://create.arduino.cc/projecthub/H0meMadeGarbage/eye-motion-tracking-using-infrared-sensor-227467>
2. Use of IR filter removed camera module to record eye movement. A pre trained model can be used to identify the position of the eye. But to do so we need to find a way to remove the pc requirement for running the model.

Finalization:

Method 2 is selected since it allows the user to see his surroundings much clearly.

Updates:

Base of eye tracking software is developed and looking forward for improvements. Refer the provided video for understanding the code:

<https://www.youtube.com/watch?v=-jFobb6ARc4&list=PLJ958Ls6nowUwRXHUcFwZy2CT0naMULR3>

Improvements needed:

Tracker need to detect up and down movement of iris. Currently it detects only left right and blink.

**Home Automation**

**Micro Controller:**

1. Arduino UNO
2. Raspberry Pi 4

Finalization: Raspberry Pi 4 have been selected as the microcontroller since it have better computational power and support complex models.

**Wheelchair**

**Node MCU**

**Simulations:**

Simulation can be done using protheus in raspberry pi 4.  
Refer the below video for more understanding on how to simulate camera detection using raspberry pi 4 in protheus:

<https://youtu.be/5uptP78_LAw>