

## **Just Imagine!**

**Problem Statement :** What if you can turn on and off lights of your home just using your brain? What if you can play computer game through your mind? Or drive your vehicle? People with disabilities are the main target of our project. Other than that normal people can also use the product.

The main concept used here is that: By using different brainwaves, user will be able to perform different functionalities like the ones mentioned above. Along with that, we will also build an online data logger. This will be used to analyze user's brainwaves.

### **Components:**

- Arduino Mega 2560
- EEG Sensors
- HC-05 Bluetooth Module/ Wifi Module
- Particle Photon/Arduino UNO (Web data logger)
- LEDs, Jumper Wires, Breadboard

### **Working :**

- EEG sensors connected with the user will be able to measure the **alpha & Beta waves** coming from our brain.
- In initial stage of the project we need to analyze the data in different situations according to that we'll decide the threshold for the relay.
- Next stage is to make this device wireless. We'll use **HC-05 Bluetooth Module** or wifi module to transmit the data to Arduino mega. After receiving the signals, the board forwards data to Arduino UNO which creates the web server.
- After checking the conditions for relay switching we will control the lights or any particular device at home.

### **Workflow :**

- In the initial stage we'll complete the home automation part of the project.
- After completing that we'll try to connect video game controls with this signals and will use the waves as game controls.
- Or we will make a Radio controlled Car model and use the waves to control the car. This is the small model of wheelchair controlling with brain.

**Risks Involved :**

- We need to check the EEG sensor we have is providing what type of data. This can make some changes in the working shown above.