Brain Mapping To Control Motors

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Abstract- *The best output of this project is to give the ease technologies benefits to the physically handicapped humans.So for that the brain signals from the human mind will be accepted and the differentiate.So for specific action there will be output from motors.For EEG signal acquisition the Neurosky mindwave mobile is and is connected wirelessly to the computer through a 2.4 GHz band. Brain Signals from the user which wears neurosky mindwave will recording in computer by using EEG application. After that,these recorded signals are then passes to the arduino uno which is directly connected to PC.From Arduino to relay motor electric signals are send.Relay motor will operate the bulb and fan according to the electric signals send by arduino.And the EEg software which is self developed gives values of frequency and by studying them it can bbe set to specific command.*

Keywords- Neurosky Gear,EEG Software,EEG Signal,Arduino.

I. INTRODUCTION

Brain Mapping to control Motors: This project is based on open brain control interface project and interaction with arduino.Using Neurosky Gear, this will captures the brain electrical activity in the form of EEG signals; and convert those specific features of the signal that represents the intent of the user into computer readable commands using EEG software.This project helps to improve the quality of human beings in general,elderly and disabled person.In this paper, our main aim is to develop a thought controlled smart home system.The Electroencephalographic signals record from the brain activity using the Neurosky mindwave mobile are interfaced with help of mouse emulator to graphical user interface on the computer screen.The user GUI to control all electric motor devices in a smart home.

II. LITERATURE SURVEY

1. Brain laptop interface (BCI) systems build a communication bridge between human brain and therefore the external world eliminating the requirement for typical info delivery strategies. They manage the causing of messages from human brains and decipherment their silent thoughts. so they'll facilitate disabled folks to inform and write down their opinions and ideas via kind of strategies like in writing system applications, linguistics categorization or silent language.

2. BCIs may also facilitate hands-free applications transfer the convenience and luxury to people in general through mind-controlling of machines. They solely need incorporating brain signals so as to accomplish a collection of commands and no muscles intervention is required. BCI helpful robots offers support for disabled users in daily and calling, increasing their cooperation in building their community.

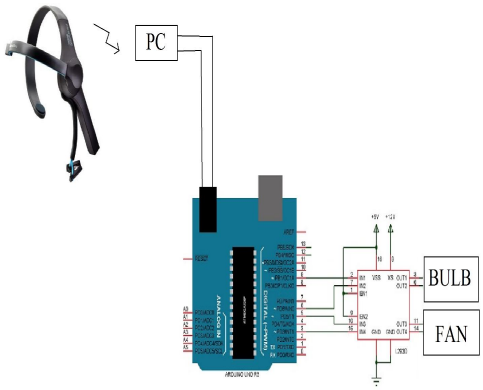
3. However, the scope of analysis has been any widened to incorporate non-medical applications. more moderen studies have targeted traditional people by exploring the utilization of BCIs as a completely unique device and investigation the generation of hands-free applications the utilization of BCI interfaces for healthy users has been subject to some doubts as mentioned. the matter of poor data transfer rate (ITR) of BCIs and its impact on reducing the commands user will provide has been self-addressed together of these problems. it's been claimed that this drawback restricts BCI utilization for locked-in persons because it won't be able to sustain with normal communication ways in which or perhaps existing human laptop interfaces.

4. Another useful employment of such data is to see the state itself and use that information for enhancing varied BCI systems. BCI User state observation operate is taken into account a useful hand in Human laptop Interfaces and adapts them in keeping with the calculable user emotional or state of mind. It participates in an exceedingly shared management atmosphere and decides the simplest form of management that may be utilized in sure things.

5. It additionally contributes within the development of good environments and feeling dominant applications. operating conditions' assessment and academic methods' analysis area unit samples of different fields that might have the benefit of activity user's brain state.

6. Hans Berger's innovation within the field of human brain analysis and its electrical activity includes a shut reference to the invention of brain pc interfaces Richard Canton's 1875's discovery of electrical signals in animal brains was an idea for Berger. jointly of the primary common use of brain pc interface technology, graph neurofeedback has been in use for many decades.

III. WORKING



a) **Scope:-** To get less human effort in surrounding in living environment and also the living in ease of life for some specified human

b) **Arduino:** Arduino is an open source electronics platform based on easy to use Hardware & Software.

c) **Relay Motor:** Relay is act as EM switch for on and off for the motors

d) **EEG Software:** This EEG software shows the values which are coming from human brain like frequency of delta, alpha, beta.

e) **Neurosky Think Gear:** The TGAM processes and outputs EEG frequency spectrums, EEG signal quality, raw EEG

Components requirements:

1. Neurosky Gear Module
2. Arduino
3. 4-Channel Relay
4. Master-Slave Bluetooth
5. PC
6. Fan & Light

SOFTWARE:

1. EEG Software

IV. CONCLUSION

We proposed a Neurosky Mind Gear for detect brain signals in real time. We show the brain signals with higher accuracy and lower latency with great efficiency. Based on these results, it shows we can define brain signals in more future technologies and research field.

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