

# IOT BASED PARALYSIS PATIENT HEALTH CARE MONITORING SYSTEM

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**Abstract-** We all know that the paralysis condition is a loss of muscle function in the body parts. It can affect any part of your body at any time, then probably you may won't feel the pain the affected area. Technical and Therapeutic innovations are there to improve the quality of life. Our goal is to develop a device which should be easy to use and should be affordable which consists of basic health care monitoring system with nursing care. We know that these people can't able to convey their messages or needs. To overcome this, we come up with the system that helps these patients to display messages by very simple motion. This device can be designed to be mounted on the finger or to be inbuilt in their clothes.

**KEYWORDS:**datapre-

processing, mapping technique, classification using KNN algorithm, Arduino UNO micro controller, hand gestures, SVM classifier, accelerometer, dynamic time warping (DTW).

## 1Introduction

The paralysis patients are unable to move their muscles for their purposes. There are so many symptoms and causes for this condition, especially spinal cord injury which affects the nervous system. There are some existing systems for individual comforts. But this system will help to monitor the overall need of the patients. Their messages will be displayed on the LCD screen. In this, we are also having some sensors. The aim is to purpose a novel device which helps disabled people. It will help them to interact with other people with minimum efforts. This device may one day improve the lives of the people with paralysis. Even though, there are so many innovative approaches for curing these people, but here this will help them to adapt with paralysis by making them as independent as possible. Fortunately, the last decade has seen promising technology advances to address these concerns. In addition, the accelerometer will also give a buzzer sound when patients fall on the floor.

## 2. HardwareImplementation

There are several existing systems available for patients with paralysis but this system helps to constantly monitor and understand the patient's needs. The sensor in the system aids to transmit the patient's message, and the message is displayed on the LCD display. The message will

change according to the position of the accelerometer. We must then know their needs and assist them on the basis of their needs. The temperature sensor, humidity sensor and pulse meter were used in this system. These sensors should be for patients with issues, orgloves; they can feel the temperature of the patient, moisture and pulses. If the patient is in a critical situation, it will sound alert with a buzzer when the patient is on the floor or when the pulse speed is above normal levels. This system can help treating patients suffering from paralysis, and it's also very cheap and easy to buy without debts.

### 3 Proposed System:

#### 3.1 Block Diagram:

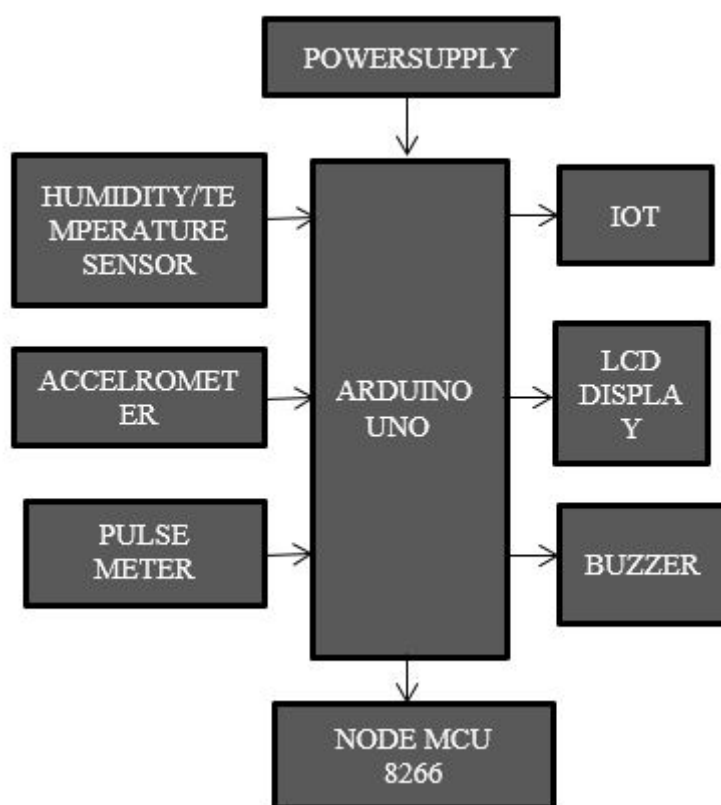


Figure 1. Block Diagram

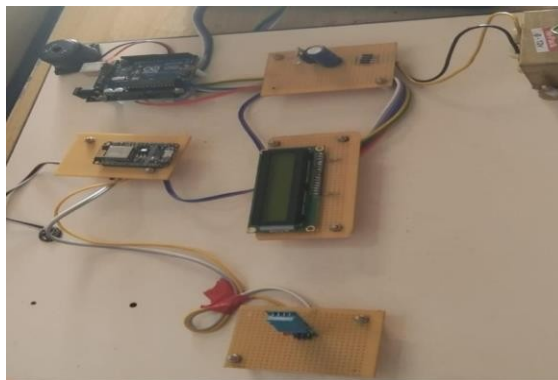
#### 3.2 Procedure

The IOT just is the web of stuff. Independent technologies can collect and transmit data without human intervention via a wireless network. There are endless personal or business opportunities. In the health care industry, remote monitoring has been possible with IOT-enabled devices that release the possibility of keeping patients safe and healthy and that enable doctors to provide superlative health care. Respond to and enable physical objects to collect information and respond to instructions. To collect, store, handle, manipulate, and manipulate data.

The communications infrastructure that includes protocols and technologies that permit two physical objects to exchanged at a most important. Adafruit IO is a simple and easy-to-use IOT platform for data storage, data viewing and device control. By using the adafruit web page, this project output is displayed on the mobile. Connect the respective sensors to a node MCU which gets connected to a webpage i.e. adafruit io. By using this webpage, we can monitor the data gathered by the sensors. Steps to create adafruit account. Click the sign in button in the top right corner of adafruit.com After that, type the email id, username and password. Adafruit account will be successfully created. Create the widgets as your wish. Connect the respective sensor which gets connected to a buzzer. Based on the patient needs it will give sound and the output will be displayed on the LCD display and if the patient's pulse or temperature become abnormal it will be displayed on the webpage which will be monitored continuously.

## 4 Result

### 4.1 Circuit Connection



**Figure 2 Circuit Connection**

This is our final circuit connection. There latest message has now been shown on the LCD panel by the help of micro controller

## 4.2 LCDDisplay-Nothing



**Figure 3 Lcd Display-Nothing**

The microcontroller has now displayed there later message on the LCD panel. As a consequence, if there is no movement in the patient. Nothing will be shown.

## 4.3 LCD Display-Need Food



**Figure 4LcdDisplay-NeedFood**

The performance will be shown depending on the patient's needs. If the accelerometer is set to ascertain angle, it will mean that they need food and sound an alarm.

## 4.4 LCDDisplay-NeedWater



**Figure5LcdDisplay-NeedWater**

The displayed outputs will assist patients in meeting their needs. They need water or their requirements if the angle changed based on their need it will alert the persons.

#### 4.5 LCD Display-GoingtoToilet

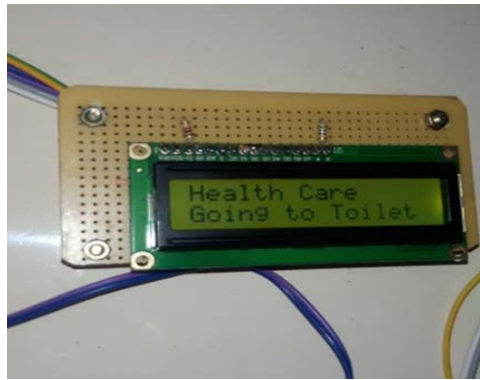


Figure6LcdDisplay-GoingtoToilet

The patient's health will be continuously monitored. If they need to go restroom then they can tilt their hand in a particular position, it will be shown on the LCD display

#### 4.6 LCDDisplay-Emergency



Figure3.6LCDDisplay-Emergency

Pulse rate and body temperature will be registered, as well as fear, so that if the patient is in an emergency, or else if they fall down on the floor the information will be shown automatically and a continuous warning sound will be produced through buzzer.

#### 4.7 Adafruit

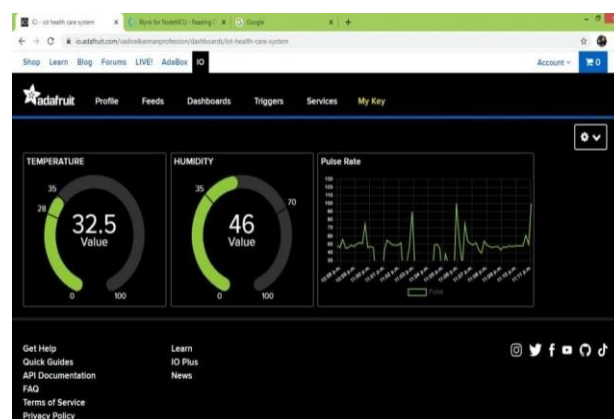


Figure 3.7AdafruitOutput

Adafruit IOT is an easy-to-use IOT platform that is useful for storing data, viewing data, and controlling devices. We can use adafruit to track and manage stuff. It will constantly monitor the patient's health and save their records. In this project pulse rate and temperature and humidity will show on mobile screen using adafruit webpage.

## 5. Conclusion

This system is really helpful for paralysed patients. When they need help then they can ask by using some movements they can also survive in this world like normal people by using this movement detection. This system is reliable and cheap and less weight, so they can buy without debt. This system will make paralysed patients to achieve an independent mobility. This is not a trivial task just because it varies from person to person in its nature and type. Therefore, different methods are essential to support these people, and it is our duty, as future engineers, to develop new technologies to help paralysed patients.

## 6 Future Scope

In future, we can use the chipset to implement this system. All parts are integrated in the chip, so that we can. This chip fits easily with the patient with paralysis. Gloves and bands avoid clothes. But there is one disadvantage that will happen increase cost but the increase.

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