IOT Based Paralysis Patient Health Care &Monitoring System

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Abstract— **Paralysis patients often face challenges in communication, mobility, and monitoring their health status in real-time. This project aims to develop a health monitoring system using ESP32, designed to monitor critical parameters such as heart rate, body temperature, and movement detection for patients with paralysis. This system provides real-time data to caregivers and medical professionals via the Internet of Things (IoT), ensuring timely intervention in case of abnormalities.**

1 INTRODUCTION

Paralysis affects millions of individuals worldwide, leaving them dependent on others for daily care. Health monitoring is crucial for such patients to detect health emegencies like heart attacks, fever, or immobility issues. Traditional monitoring methods are often manual and inconsistent. With advancements in IoT, real-time health monitoring can be made more efficient and accurate. This project develops a realme health monitoring system based on ESP32, enabling continuous health tracking of critical parameters, providing alerts, and giving access to real-time data to caregivers remotely.This Project Will Help the Patient To Take care of them & give them emotional Support.

2 PROBLEM STATEMENT

The project aims to solve the issue of constant health monitoring for paralysis patients by developing an IoT-based system that continuously tracks vital signs and provides real-time data to caregivers. This will reduce the reliance on manual monitoring and improve response times to health emergencies.

3 OBJECTIVE

Development of a portable health monitoring device. Real-time data transmission to a remote IoT platform. Integration of alert mechanisms for abnormal readings. Compatibility with future healthcare systems for scalability.

4 WORKING PRINCIPLE

The Paralysis Patient Health Care System using IoT is designed to monitor the vital signs and environmental conditions of patients with limited mobility. The system collects real-time health data such as heart rate, body temperature, oxygen levels, and detects movement or distress conditions using sensors. It transmits the data to healthcare providers and caregivers through IoT platforms, ensuring timely assistance.

5 METHODOLOGY

Here 4 Sensors used In this Project .Though The Paper Presentation We Utilize This .1.Heart Beat Sensor 2.Accelometer Sensor .3Temprature Sensor 4.Respiratory Sensor .Using This Sensors Its Easy To Collect The Health Of The patient .Though Iot Based Applicatios.when patient move the left hand then Bulb is going to off and when patient is moving right hand and then bulb is going to the on when patient is going to bend his head at back then it says that the patient required water if the patient need the help. Respiratory sensor in which we can use the potentiometer that we can set the value of the sensor respiratory sensor indicates the respiration steam of the patient.Its A device Which Helps To Patient To take care vof them .It Also Give The Patient Emotionaaly Support .

Software requirement

Arduino IDE: For programming the ESP32. ThingSpeak / Blynk / Firebase: IoT platform for data visualization. Python / MATLAB (optional): For data analysis. Android App / Web App (optional): For caregiver monitoring.

Hardware requirement

ESP32Core microcontroller with Wi-Fi and BLE, Heart Rate Sensor To monitor the patient's heart rate in beats per minute (BPM). Temperature Sensor To track body temperature. Motion Sensor (Accelerometer) To detect any significant body movement or immobility.

6 WORKING

After power on booting then automatically switch on the hotspot We are using USB 32 because it is the inbuild Wi-Fi microcontroller .Then we switch on our mobiles Wi-Fi and then open the app which is online and we connect the Wi-Fi to the application. Then we give that power to the bridge rectifier in that first week you the power to the diode which convert AC into DC. And then the power gives to the regulator and that regulator converti DC to DC in between we using the register to limit the current, also we using the ceramic capacitor which is 104pf to noise remove at high frequency. In between the two regulator we can using the register and the power indicator7805 regulator using hair in that one of the regulator is used for sensor and one is using for the microcontroller ESP 32We can use I2c(inter integrated circuit) which is communication protocol it is connected to the eye to see converter which is convert the I2C into LCD Relay model is used to switch on or of the bulb. The final output of the project is we set the temperature sensor left hand of the paralysis patient which is set to the 35° body temperature when it's goes high then application tell us about the temperature of the patient. We said the Accelometer sensor ADXL345 at right hand of the patient which is set on the 360 degee but currently we can set in programming 45 which is ADXL345 .when patient move the left hand then Bulb is going to off and when patient is moving right hand and then bulb is going to the on when patient is going to bend his head at back then it says that the patient required water if the patient need the help. Respiratory sensor in which we can use the potentiometer that we can set the value of the sensor respiratory sensor indicates the respiration steam of the patient.

This project demonstrated the feasibility of using the ESP32 microcontroller for health monitormg of paralysis patients, providing an affordable, reliable, and real-time solution. With further development, the system has the potential to Improve patient care

significantly and reduce the workload on healthcare providers.
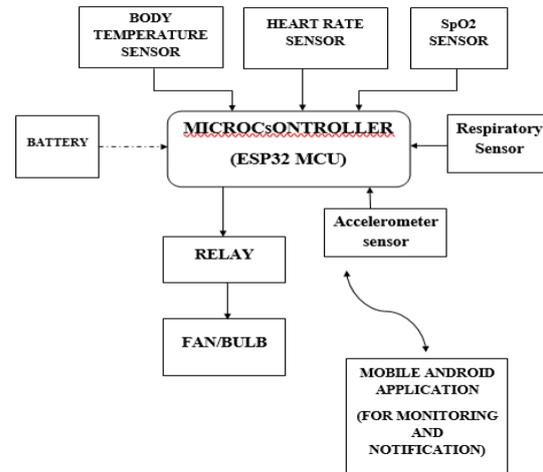
PARALYSIS PATIENT HEALTH CARE SYSTEM

Fig.1.Block Diagram of Paralysis Patient Health Care System.

7 CONCLUSION

The Health Monitoring System for Paralysis Patients using ESP32 provides a smart solution for continuous and real-time tracking of vital health parameters, ensuring that caregivers can monitor patients remotely and take timely action in case of emergencies. With advancements in IoT and low-cost sensors, the system promises to improve the quality of life for patients and reduce the burden on healthcare providers. Future upgrades can include additional health metrics and expanded functionality, such as speech recognition for communication or smart wheelchair integration.

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