

GSM based Paralysis Patient Monitoring System

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Abstract - We come across hospitals and NGO's serving paralytic patients who have their whole or partial body disabled by the Paralysis attack. These people in most cases are not able to convey their needs as they are neither able to speak properly nor do they convey through sign language due to loss in motor control by their brain. In this way the Automated Paralysis Patient Care System truly automates the care taking ability of the patient which ensures a timely attention to the patient and thus for a good health of the patient.

Key Words: Microcontroller, GSM, Accelerometer and LCD display

1. INTRODUCTION

The paralysis patient cannot convey their need properly in such a situation we propose a system that helps disabled person in displaying a message over the LCD by just simple motion of any part of his body which has motion abilities. This system also takes care of the situation wherein no one is present to attend the patient and thus sending a message through GSM of what he wants to convey in SMS. Our proposed system works by reading the tilt direction of the user part. The working of the device here is shown by holding in the fingers of the mobile hand. The user now just needs to tilt the device in a particular angle to convey a message. Tilting the device in different directions conveys a different message. Here we use accelerometer in order to measure the statistics of motion. It then passes on this data to the microcontroller. The microcontroller processes the data and displays the particular message as per input obtained. The microcontroller now displays the associated message on the LCD screen. It also sounds a buzzer along with message as soon as it receives motion signal from the accelerometer. If there was no one to attend to the message displayed on the LCD, the patient can choose to tilt the device for some more amount of time which will trigger an SMS to be sent through a GSM modem to the registered care taker of the patient with the message that the patient wants to convey.

2. RELATED WORK\LITERATURE REVIEW

The system describes a wireless patient monitoring system that could allow patients to be mobile in their environment. The developed system includes a heartbeat sensor to measure the patient's pulse, as well as a temperature sensor to keep track of the room temperature in case of emergency.

The proof of concept was successful, and allowed for multiple patients at the same time on the same network the ability to add many more patient's data transmission within the system and network related issues. An early system that uses a cell phone application for remote monitoring that uses a GPS, an accelerometer and a light sensor. But in this this can be replaced by GSM, Gyroscope and temperature sensor.

3. PROPOSED METHODOLOGY

Existing problem:

paralytic patients who have their whole or partial body disabled by the Paralysis attack. These people in most cases are not able to convey their needs as they are neither able to speak properly nor do they convey through sign language due to loss in motor control by their brain.

Proposed solution:

The proposed solution of our system is to help a person adapt to life with paralysis by making them as independent as possible. Where we see a problem with these types of devices that are being developed is that they are very large and expensive machines. They seem to be only available in hospitals and not able to be used at the patient's home or at their convenience.

3.1 BLCOK DIAGRAM

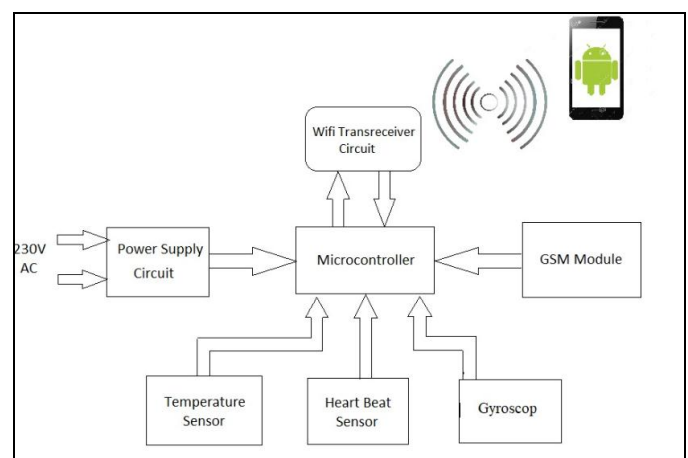


Fig 1: Block diagram

To overcome all the above drawbacks and meet the requirements of the system, we propose a system which

mainly consists of a transmitter and a receiver section. In the transmitter section (at the patient side), a gyroscope will be placed on the finger of the patient. This gyroscope is capable of measuring the static acceleration due to gravity and thus finding the angle at which the device is tilted with respect to the earth. Whenever patient needs any help, he tilts the gyroscope in different directions. This acts as an input to the gyroscope while output of it is in volts that is connected to the controller board which acts as the processing unit. Wi-Fi transceiver used for transmit and receive the signal to GSM module for knowing the condition of patient. The heart beat sensor and temperature sensor are used to indicate the patient's heart beat and temperature

3.2 FLOW CHART

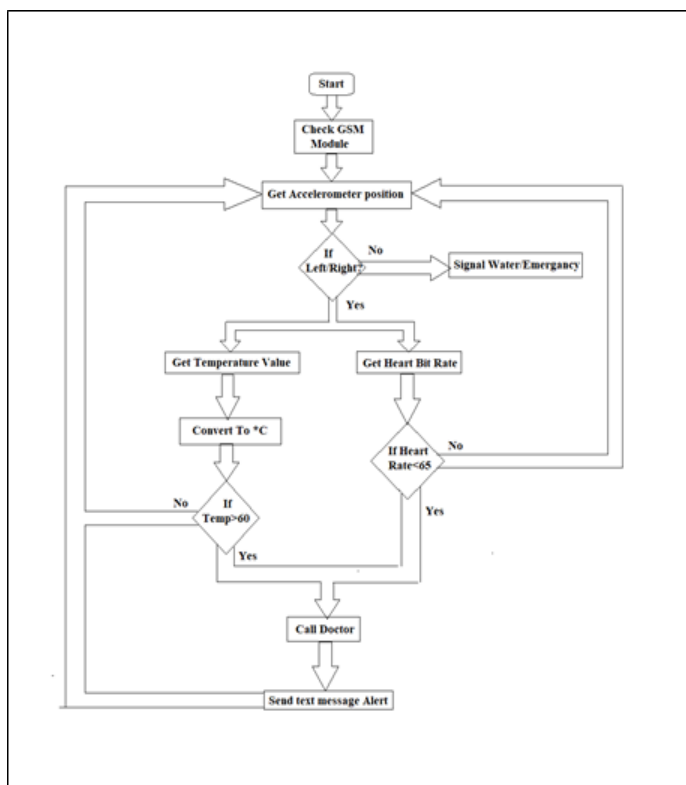


Fig 2: Flow chart

4. SYSTEM IMPLEMENTATION

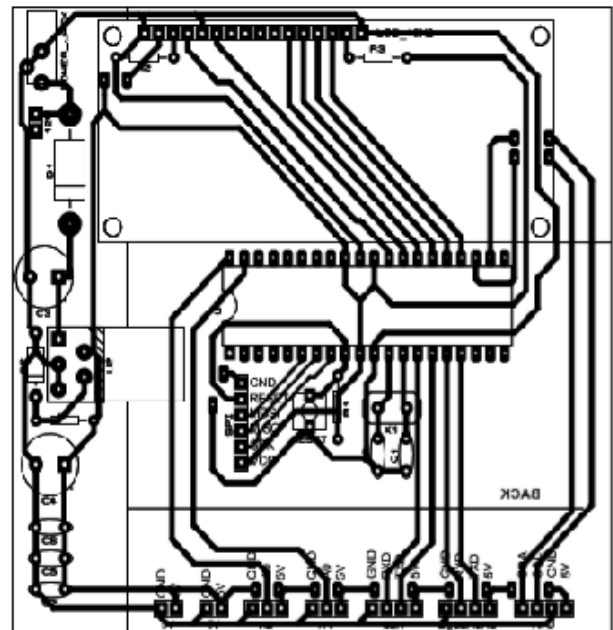


Fig 3:PCB layout

5. RESULT

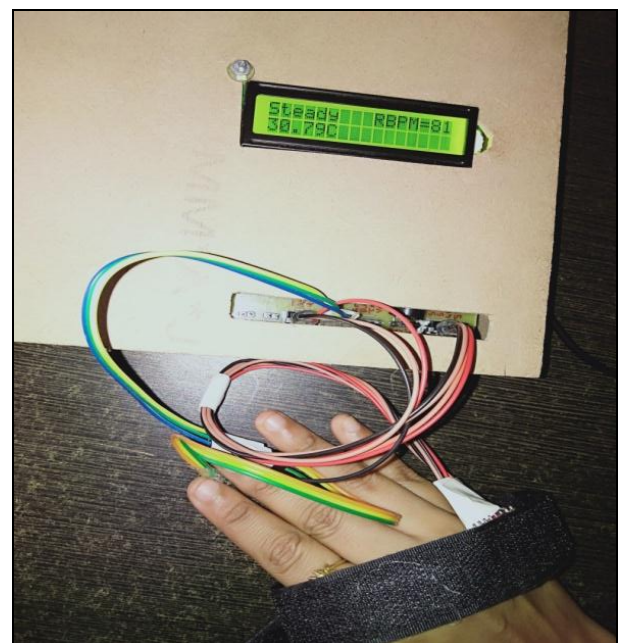


Fig 4: Project module

6. CONCLUSION

To achieve independence in mobility for people with physical disability, right mobility equipment has to be designed based on the severity and type of disability. This is not a trivial job just because the nature and type of disability varies from person to person. So different methods are essential to help those peoples and as future engineers it is

our duty to develop newer technologies to assist paralyzed patients.

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