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Patient Health Monitoring System Through IoT

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ABSTRACT: The increased use of smart devices and mobile technologies in the health section has brought an extraordinary effect on world critical care. Health specialists and doctors are using these technologies to create a critical change in medical services during clinical settings.

Here we have developed such form of system for continuous monitoring of patient's health in hospital likewise at home. We tend to present "Patient health monitoring system through IOT". In this research we are observing the pulse rate and body temperature of patient. For implementation of such system we have used Arduino Uno as Micro controller and LM35 temperature sensor for sensing the temperature of patient body and pulse sensor for detection of pulse rate. To transmit patient's collected data regarding health ESP8266 Wi-Fi module is used. These recorded values are utilized to know the patient's health condition and as an alert system in emergency condition.

KEYWORDS: Patient health monitoring, IOT, LM35 sensor, Arduino, ESP8266 Wi-fi module.

I.INTRODUCTION

In this human world health is more precious to human beings. Now a days across the world large number of people are dying due to health issues daily. One of the major reason for this large number of deaths is absence of timely and effective health assistance. Therefore the need for such effective health system is very high. Continuous observation of patient health condition can save many lives of patients during emergency situations. So it very much needed to develop the system which monitor the patients continuously, very accurately and which is very small in size, low cost. So, the patient can carry that system to anywhere very easily like smart mobile.

Here the whole system is based on wireless sensor technology and IOT. The use of IOT technology allows the integration of third party device applications. The increased advancement in IT sector and tele communication has given nativity to IOT. Now a days the effective use of IOT technologies provides easy access to physicians and as well as patients and many sectors. In health care sector body sensor network technology from Internet of Things is one of the most important technology. Here the proposed system collects the data from sensors and through Arduino and sends it to the cloud where the data processed and analysed for remote viewing. Based on the analysed data the alert can be sent to the doctor or guardian in case of emergency.

II.SYSTEM BLOCK DIAGRAM

The proposed Patient health monitoring system using IOT is developed by using Arduino Uno board. Arduino Micro controller board is main part of the project. It plays very crucial role in this project like brain in human beings.

This Micro controller collects the data from patients through sensors like body temperature and pulse rate and sends to the IOT cloud for analysis and visualization.

The standard Wi-Fi module connects the Arduino Uno, is responsible for connecting the system to the Internet and sends the patient data to the Thing speak IOT server cloud for storage and monitoring. This system can also display patient's data on LCD screen.

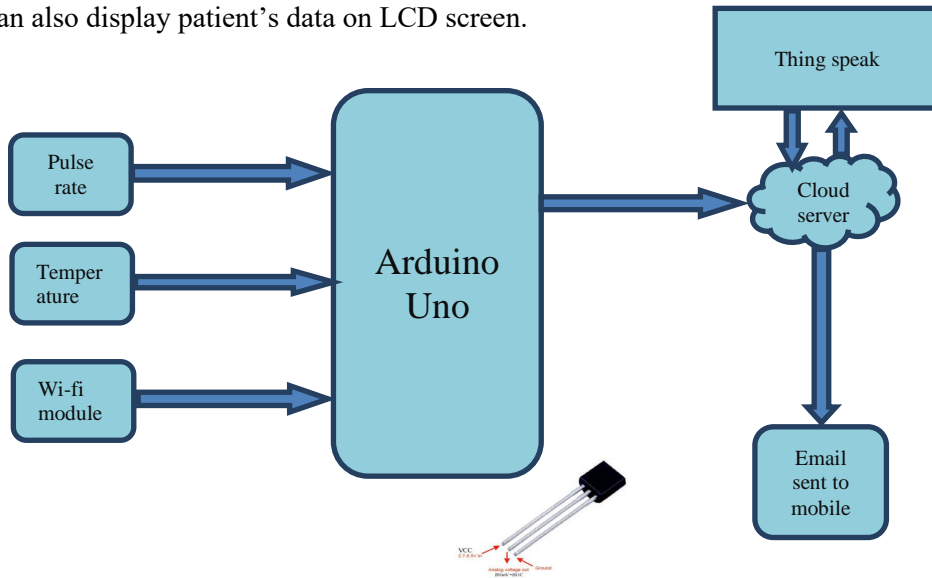


Figure 1: Block diagram of Patient health monitoring system

HARDWARE DESCRIPTION

Arduino Uno: Arduino micro controller board based on AT mega 328P. Arduino software provides easy application development on the windows platform. It has total 14 digital input and output pins, USB reset button etc. It contains everything needed to support the microcontroller. simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.



Figure 2: Arduino Uno

Temperature Sensor: The LM35 temperature sensor is a well-integrated heat-resistive sensor. It is precision IC temperature sensor with its output is proportional to the temperature (in °C).It also possess low self heating.



Figure 3: LM35 temperature sensor



V.CONCLUSION

Proposed patient health monitoring system can be used to monitor the patient's temperature and pulse rate values accurately, repeatedly and remotely. The medical staff or guardian of patients can monitor the patient's health remotely from anywhere. Based on recorded data of patient the doctor can give consultation and patient need to go for hospital. Threshold values are set for both temperature and pulse rate. The recorded data compared to threshold value range. If recorded data cross the threshold then the email will be sent to respective patient's doctor or guardian. The proposed system is also cost effective and is small in size. Easy for carrying to anywhere.

VI.FUTURE WORK

In future this project is used for sensing, monitoring and displaying other parameters like blood pressure, ECG etc. In future GPS is also used to improve this project. Using this the location of patient can also be find. This helps to take necessary preventive action to the patient.

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