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Health Monitoring System Using IOT

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Abstract: The Internet of Things (IOT) is a new mega trend in the internet. This paper focus on developing a smart health monitoring system that uses the sensors to collects the patient health data and transfer the data to the server through Wi-Fi module. The data is stored in the database if any patients data is not in the normal range then the caretaker as well as the doctor are notified through the message service. Security is an important thing for every system to achieve this a password protected Wi-Fi module and restricted access to the database is used.

Keywords: Data Collection Unit, Data Authentication Unit, Alert Unit, Microcontroller, Temperature sensor, Motion sensor, ECG Sensor, LCD display, Heartbeat sensor.

I. INTRODUCTION

Health is most important factor to live a happy life. A research indicated that about 89% of the old people are suffering from heart diseases and other chronic diseases .For those people health should be regularly monitored and their health condition should be informed to the doctors as well as the caretaker in an critical conditions. By using IOT we can achieve it. IOT is basically a collection of the sensors, devices and embedded system that uses the internet to communicates with each other. By using the IOT technology in the health care field we can achieve a fast, efficient monitoring of health so we can increase the health care of their loved ones .By using this technology we can also keep on tracking their health parameters by storing there parameters in the database.

II. LITERATURE SURVEY

1. Paper Title- Ubiquitous Monitoring Environment for Wearable and Implantable Sensor.

Author- Jason W.P.ng, Benny P.L.Lo, Oliver wells, Morris Sloman

This paper provides architecture for gathering, collecting and continuous monitoring of the patient under their physiological status by using the sensor it mainly implemented the concept of the BSN from the basis of the wireless intelligent module for implementable and the wearable sensors.

Advantage

The advantage is continuously monitor the patient data.

Disadvantage

Issues in the development of the wearable or the implantable sensor in BSN

2. Paper Title-A Programmable Service Architecture for Mobile Medical Care

Author-R .Chakravorty

The opportunity in the point of care access capture and transmission of the patient data will continue to drive in the health industry by mobility. This will provide the greater advantage to programmable architecture, quality health care and flexible. The mobicare includes the body server security and the programmable architecture, secure code updates and upgrades.

Disadvantage

It is not reliable and secure

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3. Paper Title-Reliable Set-Up of Medical Body-Sensor Network Author-H.Baldus, K.Klabunde, G.Muschth

The article designed a protocol that enables multiple sensors connected to one patient. The clinician identification and the patient identification leads to the secure and reliability of the system. In this each network node is preconfigured with the unique address.

Disadvantage

Dynamic allocation of the address is not done.

III. PROPOSED SYSTEM

The main goal of this paper is to develop a health monitoring system .The system contains three modules.

1) Data Collecting Unit.
2) Authentication Unit.
3) Alert Unit.

The data collection unit consists of the wearable sensors. The one end of the sensor is connected to the patient body and other end is connected to the microcontroller board. The sensors used in this project are ECG, Temperature, Motion and heartbeat sensor and the health parameters collected from these sensors are transferred to the server through the Wi-Fi module.

In the data Authentication unit the user first need to register using the android app by entering the following details Name, Email-id, Username, Caretaker details and the doctor details these details are stored in the user database. After the registration user should login using the username and password. Then server will be connected to the system and it can receive the health data from the system.

In the alert unit the server will compare the data range received from the sensors with the range provided if the range is not the equal then the alert unit will send message to the caretaker as well as the doctor that the patient is in critical condition. For the communication between the server and the Wi-Fi module HTML is used. The LCD display is used for displaying the current health status. Normally the FTP protocol is used for sending the message from the remote server.

Thus an efficient health monitoring system developed

IV. HARDWARE REQUIREMENTS

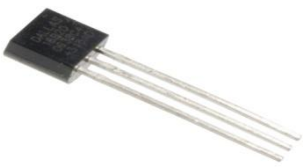
1. Heartbeat sensor

The heartbeat sensor which is used to measure the heart rate in the bpm.

Heartbeat Sensor

2. Temperature Sensor

The temperature sensor which is used to measure the patient body temperature



Temperature Sensor

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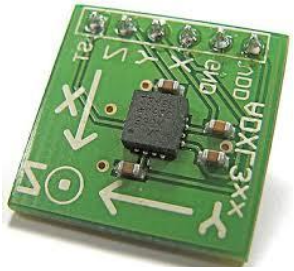
3. ECG Sensor

The ECG sensor which is used to detect the electrical activity of the heart whether it is working properly or not.

ECG sensor

4. Motion Sensor

The motion sensor which is used to detect the motion or the position of the patient body



Motion Sensor

5. WI-FI Module

The Wi-Fi module which is used to transfer the patient data to the server and to the database.

WI-FI Module

6. LCD Display

The LCD display which is used to display the current health status of the patient.

LCD display

V. ADVANTAGES

1. By using this system the doctors need not be continuously present at the patient so it saves the time to the doctor.
2. By this we can improve health care to the people in village areas.
3. Hospitals visits are minimized to the patient.
4. Patient health parameters are stored in the database so it is more secure than storing the data in the files or the hard disk.

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VI. CONCLUSION

In these paper we discussed about the use of IOT in smart hospitals in the present days and their advantages. The health care monitoring system provides an effective and secure healthcare to all people by continuously monitoring their health and notify the doctors as well as the caretaker in critical condition.so this system can improve the lifespan of the people.

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