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Secured Smart Healthcare Monitoring System Based on IoT

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ABSTRACT: In day to day life it is difficult to monitor a person's health status regularly. Especially for thepeople suffering from health issues it is more essential to get checked by the doctor continuouslyand update themselves about their health status and spare their life in critical situation. Health monitoring is the major problem in today's world due to the absence of proper equipment for monitoring the health. To avoid this problem a smart health care monitoring system based on IOT is used in order to provide an easy access for people to monitor their health. To monitor the health parameters of the patient various set of sensors are used. In this project a micro controller is used in order to communicate with the sensors. The microcontroller will take the data from the sensors and sends it to the cloud through IOT and share the information with the mentioned doctors. In this system we are using Blynk application in order to send the alerts to the mentioned doctor and caretaker. The data can be accessed by the doctor anytime. By using this system we can easily provide proper medication for a patient at home and if necessary at hospitals and any healthcare units.

KEYWORDS*:* Internet of things, Node MCU Wi-Fimodule, Blynk application, Sensors- body temperature sensor (DS18B20), temperature and humidity sensor (DHT11), pulse rate sensor.

I.INTRODUCTION

Internet has become one of the major aspects of our daily life. It has changed the way people learn, work or play. Internet acts as a major part in education, business, finance, entertainment, social network, shopping apps etc. The next modern way to use internet is IOT i.e. internet of things. Internet of things is nothing but the world where several objects can sense, communicate and share information over a Private Internet Protocol (IP) or Publics Networks.The interconnected objects collect the information at regular intervals, analyze the information and take the required action, providing an intelligent network for analyzing, planning and decision making.

In our day to day life it is difficult to monitor our health status regularly. Especially for the people suffering from health issues it is more essential to get checked by the doctor continuously and update themselves about their health status and spare their life in critical situation. Health monitoring is the major problem in today's world due to the absence of proper monitoring of health. To avoid this problem a smart health care monitoring system based on IOT is used in order to provide an easy access for people to monitor their health. In this system a person can get checked by sitting at home. A person can send their health data from their home to the particular doctor and record the information of the regular days.

The main idea to design this project is to give a proper health report of a person without visiting to a hospital. A person can get checked at their home and give their regular updates to their doctors. A regular monitoring of health can be done and a regular update can be given to a doctor through internet. The model consists of a temperature sensor, pulse sensor, node MCU Wi-Fi module, blood pressure sensor, etc.

In this system the microcontroller collects the data from the sensors and sends that data to cloud. We use an application called Blynk in order to transfer data and give alerts to the doctor.By using this application we can send the alerts in the form of mails and give notifications in blynk app. Hence this system helps the person to monitor his/her health at home and reduces the risk of losing their life.

II.LITERATURE SURVEY

[1]Gautam Talukdara, M Aansari,Alok Sarkar: This Paper Focuses on Development of a System Which Provides Heart Rate and Body Temperature Measurement of Patient With Microcontroller Involving of GSM Network. The Paper

Describes How The Required Statistics Of Patient Are Measured By Microcontroller In Real-Time. Further, The Alerts Are Given To The Doctor Whenever The Sensor Detects The Values.

[2]BORWORNLAK THADUANGTAPAWIT CHOOMJIT,TUUL TRIYASON:
In this paper, they propose the Smart Healthcare prototype for basic health check-ups using biomedical sensors which can measure three vales: blood pressure, heart rate and temperature. Web applications for doctors and for the elderly are part of the system as well. When a doctor logs into the website, they are able to view all measured values of their elderly patient using a status color. Therefore, a doctor can observe an abnormal case rapidly and is able to post a comment or suggestion to elderly.

[3]SUMAN DASARI, L SRINIVAS:
The system consists of smart mobile phones, with the recognition of good phones, notably the phone supported robot system is speedily developed. The system consists of various sensors like heartbeat, temperature and MEMS measuring system. Hence, we are able to simply monitor the human behaviour conditions through Bluetooth system via mobile

[4] MMM NARAVANI, SHWETA S AKSHATA G SHRUTI Y:The system is based on IOT which is used for emergency medical support. It gives efficient support to emergency medical services to the intensive care units (ICU) patients. By using blynk application the doctors can get easy access and get the patients information. The main aim is to reduce the strains of doctors to visit every time to check patient body condition

[5]DUDDELA DILEEP KUMAR & PRATTI VENKATESWARULU
In this undertaking the ATMEGA8 microcontroller is used to talk to the numerous sensors consisting of temperature sensor and pulse oximeter sensor. Microcontroller choices up the sensor information and sends it to the website and as a result presents actual time tracking of the fitness care parameters for docs and information may be accessed each time via way of means of the physician. Controller is likewise related with buzzer to alert the caretaker approximately variant in sensor output. The predominant trouble in far off affected person tracking gadget is that the information as to be securely transmitted to the vacation spot give up and provision is made to get right of entry to the information is authorized simplest for legal user. The protection trouble is been addressed via way of means of transmitting the information through the Keyword in an effort to be encrypted via way of means of widespread Msg91 and the users/physician can get right of entry to the information via way of means of logging to the html website.

[6]L CHANDRIKA, S SRINIJA, G HEMALATHA:
In this project, they used different sensors for the purpose of monitoring the patient's health. Pulse sensors to measure body pulse, and temperature sensor for measuring body temperature and humidity sensor for measuring humidity, the doctor can login from webpage with IP address allocated to patient, he need to login into the patient webpage to see the health parameters, on the same The webpage after checking patients' health parameter, he can write a medical prescription to patient for medicines, once the doctor logouts the page, patient and doctor will receive the SMS from server, Doctor will receive SMS regarding payment, patient will receive SMS regarding medical prescription for the patient..

III.SECURED SMART HEALTHCARE MONITORING SYSTEM BASED ON IOT

This project helps us in regular monitoring of our health. In this system a nodeMCU module is used and a set of various sensors are used. The nodeMCU will collect the data from the sensors and send that information to cloud i.e. through blynk application. Then the received information is send to the doctor and the caretaker in the form of alerts. The alerts are given through mail and notification in the blynk app.

BLOCK DIAGRAM:
In this model all the sensors are connected to the NodeMCU. NodeMCU will receive all the data from the sensors.The received data will be displayed on the lcd screen and will be send to cloud. And then that data will be sent to mobile in the form of alerts to the mobile.
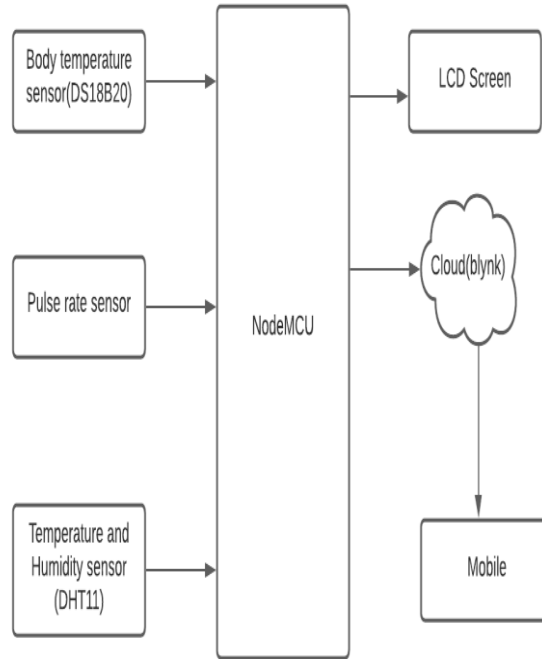
Figure 1: Block diagram of Healthcare monitoring system based on IOT
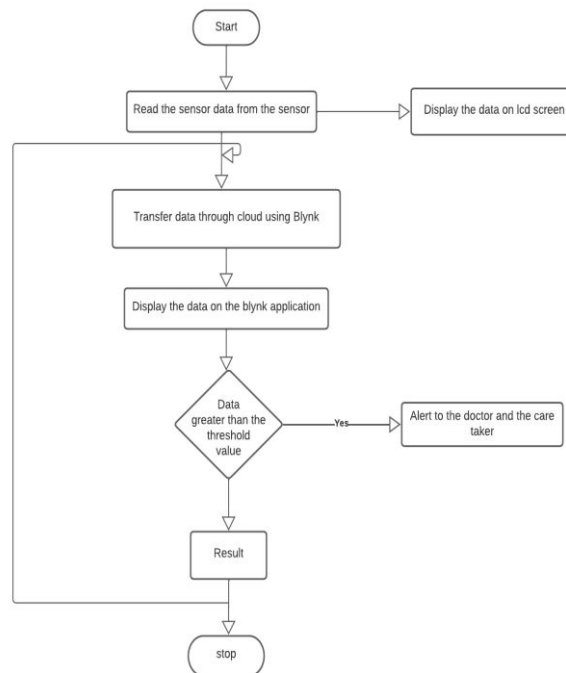
FLOW CHART: -

Figure 2: Flow chart of Healthcare monitoring system

This prototype design gives working of healthcare monitoring system based on iot.
The data is first sensed by the sensors.That data is transferred through cloud using blynk application.When it is observed that data is in risk state the doctor and a care taker will also get an alert in the form of a mail and a notification in blynk app.

IV.RESULT AND DISCUSSIONS

Figure 3: Hardware implementation for Healthcare monitoring system based on iot

The below figures show the output of the proposed system.

Figure 4: Pulse rate and body temperature display on LCD screen

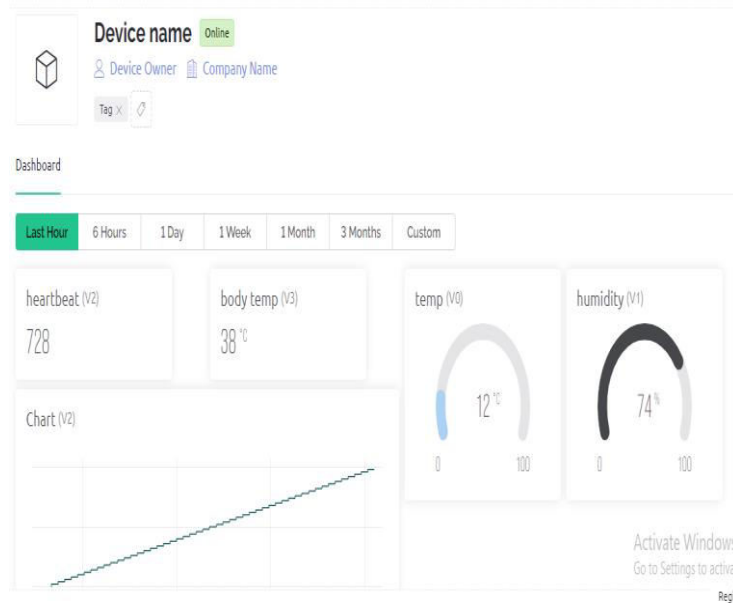Figure 5: Temperature and Hummidity display on LCD screen
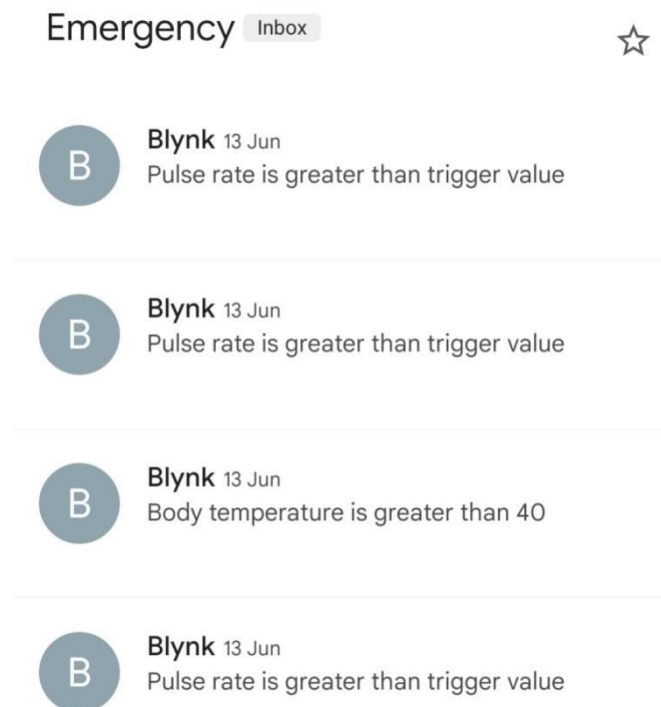
Figure 6: Dashboard steup in blynk app

Figure 7: Notification alert given in mail when the sensor value is greater than the trigger value.

Figure 8: Notification alert given in Blynk app when the sensor value is greater than the trigger value.

VI.CONCLUSION

A user friendly health monitoring system which is implemented using a NodeMCU. Here several sensors are used in order to collect the information. Then the information is transferred using the blynk application. Since we have used nodeMCU as the microcontroller it can give alerts in the form of mails. And then the alerts are given to the doctor and the caretaker

REFERENCES

1. Gautam Talukdar,Ma Ansari,Alok Sarkar "Gsm Based Patient Monitoring System"Icbeat, 2010
2. Borwornlak Thaduangtapawit Choomjit, Tuul Triyason "Smart Healthcare And Basic Health Checkup And Monitoring For Elderly" International Computer Science And Engineering Conference (Icsec) 2016
3. Suman Dasari, L Srinivas "Smart Phone Usage For Health Monitoring Using Bluetooth Technology"Ijarse Vol. No. 6 Issue No. 8 8 August 2017
4. Mmm Naravani,Shweta S Akshata G Shruti Y "Smart Healthcare Monitoring System Based On Iot"International Journal Of Engineering Applied Sciences And Technology 2017
5. Duddela Dileep Kumar & Pratti Venkateshwarulu ,"Secured Smart Healthcare Monitoring System Based On Iot", Imperial Journal Of Interdisciplinary Research (Ijir), Vol-2, Issue- 10, 2016 Issn: 2454-1362.
6. L Chandrika, S Srinija, G Hemalatha "IOT based patient monitoring system" International Journal of Innovative Research in Science, Engineering and Technology Volume 10, Issue 6, June 2021
7. VandanaMilindRohokale, NeeliRashmi Prasad, Ramjee Prasad "A Cooperative Internet of Things (IoT) for Rural Healthcare Monitoring and Control" 2011 Center for TeleInFrastuktur, Aalborg University, Denmark, P.P 978-1-4577-0787-2/11.
8. CharalamposDoukas, IliasMaglogiannis "Bringing IoT and Cloud Computing towards Pervasive Healthcare" 2012 Sixth International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing, P.P 978-0-7695-4684-1/12.
9. Junaid Mohammed, AbhinavThakral, Adrian FilipOcneanu, Colin Jones, Chung-Horng Lung, Andy Adler "Internet of Things: Remote Patient Monitoring Using Web Services and Cloud Computing" 2014 IEEE International Conference on Internet of Things (iThings 2014), Green Computing and Communications (GreenCom2014), and Cyber-Physical-Social Computing (CPSCom 2014),P.P 978-1-4799-5967-9/14.
10. Tae-Yoon Kim, SungkwanYoum, Jai-Jin Jung, Eui-Jik Kim "Multi-hop WBAN Construction for Healthcare IoT" 2015 International Conference on Platform Technology and Service, P.P 978-1-4799-1888-1/15.
11. BoyiXu, Li Da Xu, Senior Member, IEEE, HongmingCai, Cheng Xie, Jingyuan Hu, and Fenglin Bu "Ubiquitous Data Accessing Method in IoT-Based Information System for Emergency Medical Services" IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, Vol. 10, No. 2, May 2014, P.P 1551-3203.
12. Debiao He And Sheralizeadally "An Analysis Of Rfid Authentication Schemes For Internet Of Things In Healthcare Environment Using Elliptic Curve Cryptography" IEEE Internet Of Things Journal, Vol. 2, No. 1, February 2015, P.P 2327-4662

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