

A REVIEW ON IOT BASED COVID-19 PATIENT HEALTH MONITOR IN QUARANTINE

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Abstract:- In the current covid pandemic situation the covid patients are increasing rapidly. to monitor all the covid patients it's very stressful for the doctors and needs a lot of patience. And the main problem is fear of infection to doctors and their families, to overcome this, we are making this IOT based COVID-19 Patient Health Monitor in Quarantine. This device will monitor the patient health continuously. This device will monitor the patient temperature and heart rate. as we know the coronavirus and other viruses are dangerous and harmful to society with the help of this system we can keep a track of patients health conditions if they need any medical help they can alert the respective authorities at a press of a button so let's see what are the system components of the system consists of the power adaptor, wifi module, LCD display, blood pressure and heart rate sensor, temperature sensor, and an at mega 328p microprocessor

Keywords: Active health monitoring, COVID 19 healthcare, M2M communication, Temperature Sensor, BP & Heart rate Sensor, IOT healthcare.

I. INTRODUCTION:-

In the current COVID situation we have special Covid 19 Quarantine centers set up to treat covid patients. Since covid is highly infectious it is very important to quarantine covid patients continuously but at the same time, doctors need to monitor the health of covid patients too. With the increasing number of cases, it is becoming difficult to keep track of the health conditions of many quarantined patients.

The main problems are list out here:

1. Doctors need to regularly monitor the patient health.
2. The Doctors are at risk of infection just for monitoring purposes
3. There are increasing numbers of patients for the doctors to monitor.

To solve these issues we are here to design a remote IOT based health monitor system that allows for remotely monitoring of multiple covid patients over the internet. The system monitors the patient heartbeat, temperature

and blood pressure using a heartbeat sensor, temperature sensor and BP Sensor respectively.

The system then transmits this data over the internet using wifi transmission by connecting to the wifi internet connection. The entire system is run by microcontroller-based circuitry. The data of the covid patient is transmitted and received over IOT by the IoT Gecko platform(IoT development platform) to display data of patient remotely. If any abnormal condition is detected in patient health if the patient presses the emergency help button on the IoT device, an alert is sent over IOT remotely.

II. LITERATURE SURVEY

Medical Surveillance Solutions are the In this paper, we shall design a system which will monitor the covid patient health in Quarantine. and also allow the doctors and family members to monitor the health condition remotely. Most important in the short-term developing world of people who improve care needs. Covid-19 as an infectious agent is very important to distinguish covid-19 individuals but at the same time medical examiners need to consider the suitability of covid-19 patients in addition. In the form of motivating conditions miles become difficult to keep up with the sound of health and welfare problems of several separated people. Below is a design of the recommended Wi-Fi sensor network device based on IoT technology. It is often used to collect and transmit unique sensory tracking information in relation to people in health care facilities. The software contains a Wireless network-based (Wi-Fi), with completely different sensors connected to the transmission area such as the Heartbeat sensing unit, Temperature stage sensing unit blood pressure sensor and pulse oximeter. These sensors are immediately connected to the affected man or woman and collect client issues through the use of hearing aids. The same statistics send wirelessly to the recipient's location this is available to the medical agent and with that issue, the recipient will definitely reap all the updates from their customers. And in addition, it will truly send word of word to people to pick up where the appropriate medications are. And one sharp beacon will actually be patiently available for the purpose of promoting an emergency for customers. When the

patient will press the emergency button then the buzzer will be open.

The Coronavirus (COVID-19) epidemic has exaggerated the lives of billions of people, many of whom have lost their lives. Isolation and constant vigilance are the keys to avoiding the spread and death rate. The development of the Internet of Things (IoT) is taking new opportunities in many systems, such as smart cities etc. It integrated with machine learning provides a hopeful solution for continuous patient monitoring through alertness. In this work, an IoT-based patient health monitoring system was implemented using an Arduino control. The proposed Arduino-based system consists of a heartbeat sensor, oximeter and temperature sensor. In addition, the machine learning algorithm for Support Vector Machines or SVM is used to predict or warn of patient risk situations. SVM model trained to use a set of data collected in a global health organization for patients of various ages. Implementation results prove that the proposed system achieves high phase accuracy at a very low cost.

III. WORKING PROCEDURE SYSTEM:-

The hardware components are

1. Atmega Microcontroller,
2. Temperature Sensor
3. Blood Pressure Sensor
4. Wifi Module
5. Resistors
6. Diodes
7. PCB
8. Heartbeat Sensor
9. LCD Display
10. Switches
11. Capacitors
12. Transistors

Software Specifications

1. Programming Language: C

2. Arduino Compiler

3. IOT Gecko platform

The system is connected to the temperature sensor and blood pressure & heartbeat sensor. Then all we need is to attach the blood pressure and heart rate monitor sensor to the patient's wrist. the click power on it shows the patient's blood pressure after displaying blood pressure it's uploaded on the IoT screen. to check the temperature we are going to use to temperature sensor connected to the system . to showcase the temperature rise we are going to light the lighter in front of the temperature sensor. as soon as the frame comes closer to the temperature sensor display shows the rise of temperature and it is uploaded on the IoT.

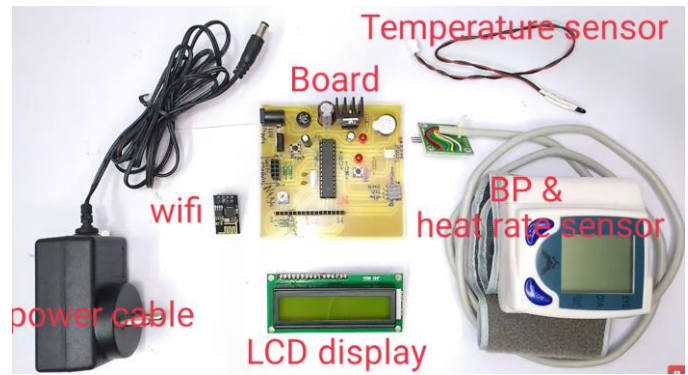


Fig 1: Sensor's image

If the patient needs any medical help we can assist the patient by pressing the help button attached to the system. if we press the help button an emergency medical assistance is sent to the respective authorities and hence with this system we can provide proper treatment as soon as possible. so with the help of this system, we can keep track of patient's body conditions and if they need any medical help we can alert the respective authorities on a press of a help button so this working of iot covid patient health monitoring in quarantine.

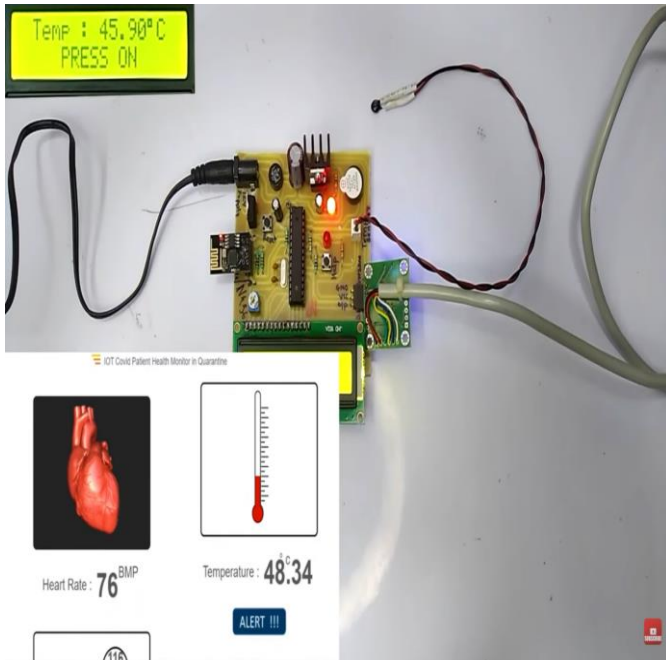


Fig 2: Temperature Alert

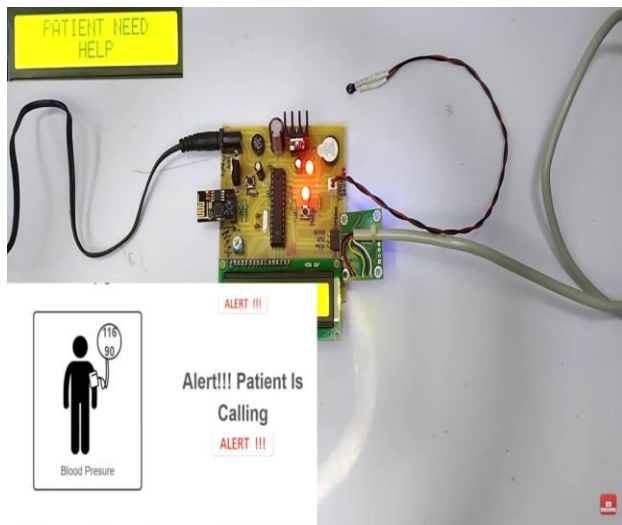


Fig 3: Emergency Alert

IV RESULTS

We have successfully done IOT Based COVID-19 Patient Health Monitor in a Quarantine experiment. After completion of this project, we can easily monitor the patient health from any ware. This will help a lot of doctors from physical Stress and also will keep the doctors safely .This project outcomes:

1. Our main purpose in doing this project is to help the doctors and their lives
2. Easy monitoring of patients health
3. This will reduce a lot of physical strain to the nurses and the doctors



Fig 4: COVID Patient under quarantine using the system



Fig 5: Getting COVID patient health information

V CONCLUSION:-

With the help of this we are saving doctors life and also we are saving our lives from covid infection

This System allows:

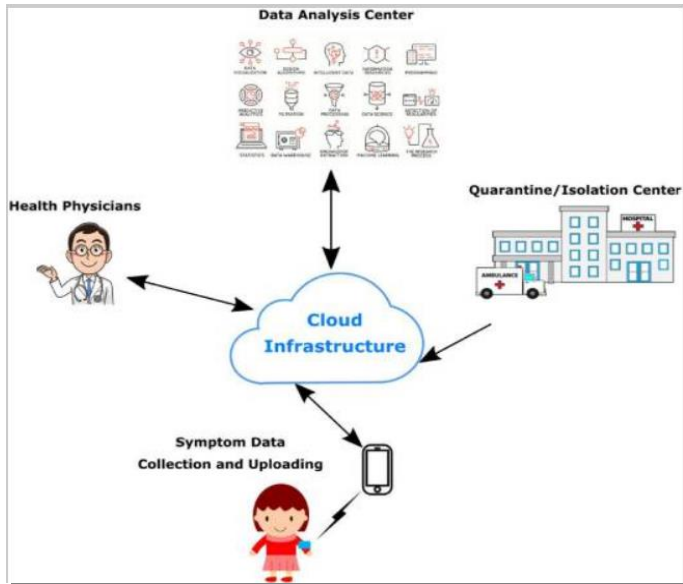


Fig 6: Process of data Transmission

- To monitor patients remotely without risk of infection by the doctors.
- One doctor can monitor 500 patients at a time.
- Instant alert in case of health fluctuations of emergency to the doctors. The system is setup at covid patient bedside and constantly transmits patient health data over the active internet so that doctors can monitor multiple patients remotely and attend the desired patient urgently when an emergency is required.

This project fulfils the aim to significantly reduce the risk of infection in healthcare workers. It is also expected to reduce the increasing demand for PPE (personnel protection equipment) kits and other needs. The health can be monitored and disease diagnosed by any doctor at any distance. An IoT based health monitoring system was developed. The system monitors body temperature, pulse rate and saline level, which are also displayed on a LCD. These sensor values are then sent to a medical server and to patient relatives using wireless communication. These data are received in an authorized persons smart phone with IoT platform. With the values received the doctor then diagnose the disease by checking the severity and the state of health of the patient is known.

VI. REFERENCES

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