



# IOT BASED REMOTE HEALTH MONITORING SYSTEM USING ARDUINO

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**Abstract:** In India, close to regarding 2 hundredth of the whole population loses their lives because of interrupted health observance system i.e., in most of the hospitals, doctor visits patients either in morning shift or in evening shift or in each shifts. What happens if patient's health becomes important in between that interval or once a doctor isn't on the market with a patient. The solution is; a patient could lose her/his life. Thus to avoid this important situation; we tend to area unit proposing a sensible embedded system device that monitors patients health ceaselessly. This system monitors patients pulse rate, vital sign and saline liquid level (if any).if any of the on top of parameters goes on the far side the brink price, this sensible device informs doctors or care taker and kindle corrective actions to save lots of patients life. Internet of Things (IOT) visualizes a way forward for something anyplace by anyone at any time. The knowledge and communication technologies facilitate in making a revolution in digital technology. IOT area unit identified for interconnecting numerous physical devices with the networks.

Key wards: Arduino, heartbeat sensor, gsm/gaps, IoT, temperature sensor

## 1.INTRODUCTION

It is impossible to monitor the patient by doctor in remote areas during critical conditions. So, we introduced a method which continuously monitors the patient condition and automatically sends the data to server, so the doctor can access the data continuously. In previous methods, monitoring of patient can be done only by using different instruments for different parameters. So, we decided to monitor required conditions of patient by assembling different instruments in a single module. Nowadays lot of patients or dead for 30 min or less, to avoid this we establish a IoT based health monitoring system. This system is mainly for village patients. The growth of internet is tremendous and has been further extended to connecting things through internet. All devices are connected to one another with various smart technologies to create worldwide ubiquitous network called Internet of Things (IoT). We recorded the data of each sensor and uploaded the data into the server. We observed the data on many devices using internet with security login and password.

## 2. NEED OF THE STUDY

Now a days accidents are becoming a one of the major reasons to expire a peoples in villages or cities and also lot of patients are expired dure to late treatment based on this concept we establish a new project which is used to save a lot of patients. While travelling a ambulance by using our project we will calculate data like heartbeat, pulse, patient location etc. will be calculated and send to website or message to the particular hospital which is the best hospital in that particular location. This project establishes based for villages. Because of lot of accidents are occurring in villages due to rash driving and also less hospitals in villages to save.

### 2.1 PROBLEMS IN THE EXISTING SYSTEM

At present generally using temperature sensor to monitor temperature data and that will be send to the pre-registered mobile number through GSM.

#### Drawbacks:

- There are some drawbacks in the existing system which were identified in general. They are:
- But the existing system is Not accurate method
- Uploading data to server is not implemented.
- Less efficient

## 2.2 PROPOSED METHOD:

As in figure, the sensors system is used to obtain the information or readings from the patient and the reading which is read is converted into signals. These signals are provided for processing to Arduino is used to send the data to server. This information can be accessed by the doctor on his phone/computer and get the information using GSM. Here we are using Arduino as main controller for it we are interfacing the sensors. Heartbeat sensor, Temperature sensor, MEMS sensor and IR sensor these are used to monitor the heartrate, Temperature of the body, movement of the patient and saline bottle monitoring respectively. If any of the parameter increased greater than threshold then GSM will send message and buzzer will give alerts.

### Block Diagram

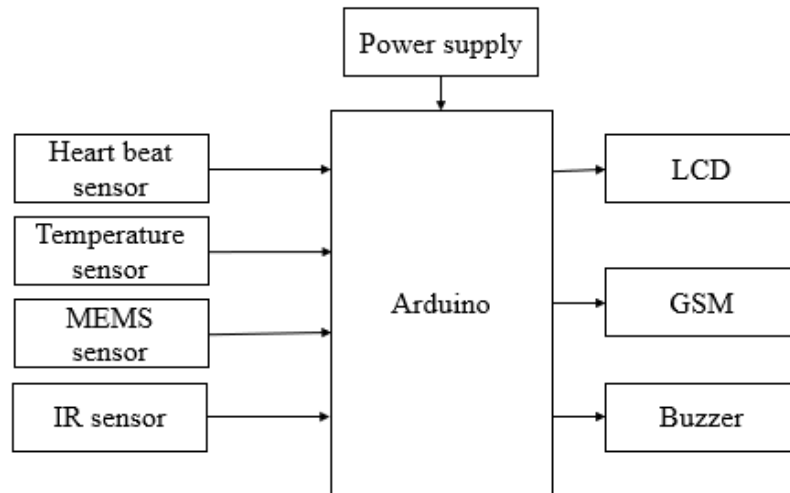


Fig: Block Diagram of Proposed system

## 2.3 ADVANTAGES & APPLICATIONS

### Applications

- Hospitals
- Home
- Offices ...etc
- In remote places

### Advantages

- Reduced Burden on Healthcare Systems.
- Improved Patient Outcomes.
- Better Quality of Care.
- Increased Education.
- Increased Patient Accountability.
- Remote accessibility

## 3 RESEARCH METHODOLOGY

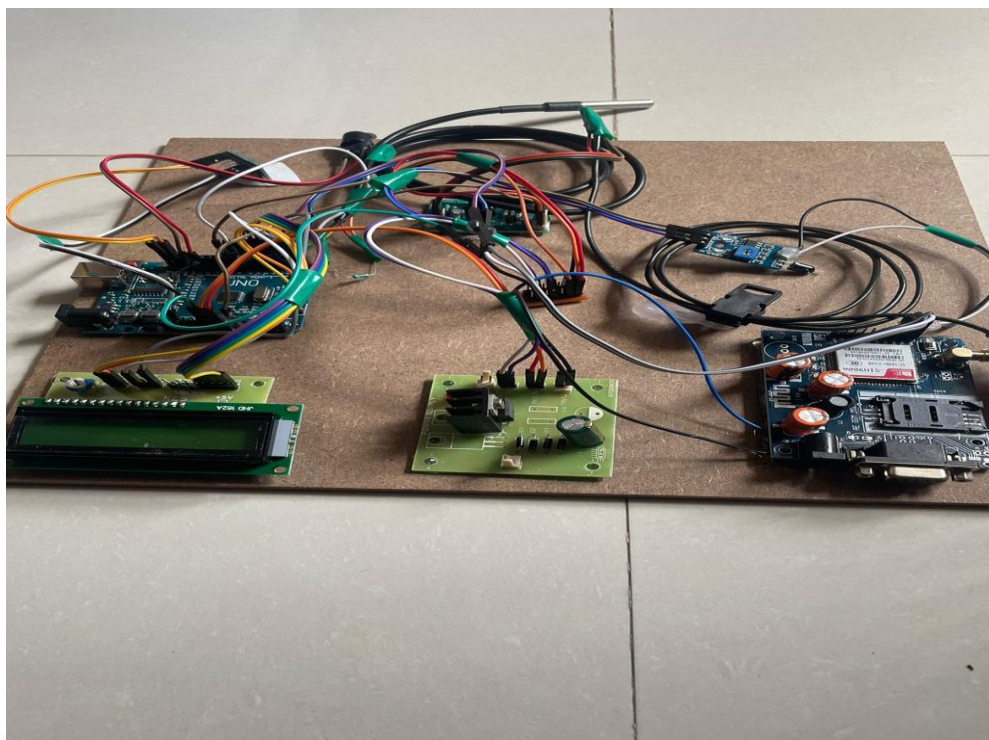
The below fig shows the how the system works in step by step by using different sensors we will calculate the patient data and sends to the web server, by using this data doctors starts treatments, It helps to recovery fast.

The below Fig a: shows the overall system architecture of the healthcare monitoring system and the Fig b represents the proposed bench setup circuit.

The temperature sensor measures the body temperature, the heart beat sensor measures the heart rate movement sensor measures the movement of the patient. when the patient is in contact with the sensors. The Arduino will process the code and display the data of the patient to LCD display. The Wi-fi module ESP8266 provides internet connectivity through which the data will be monitored on the IOT server. Thus, the doctors and relatives of the patient can access the data and monitor the health of the patient remotely.



**Fig a:** The overall system architecture of the healthcare monitoring system



**Fig b:** proposed batch setup circuit

#### 4 RESULTS AND DISCUSSION

If the patient is under coma, whenever the patient slightly moving the body on that time the sensor detect and send data to the specific doctor who are giving treatment in past it helps to give better treatment. And also it measures heartbeat, temperature, selain level of the patient.as shows the output of the system.

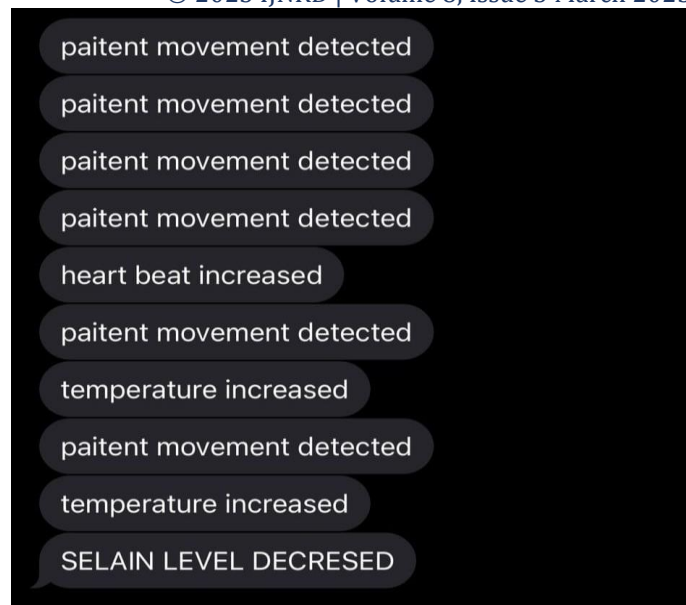


Fig: Output of the project

## 5. CONCLUSION

- A real time monitoring system is developed to provide health parameters of the home quarantine people.
- This system is displaying the parameters on the monitoring unit and also sends to the server.
- To message will be sent when sensor values cross the threshold level.

## 6. REFERENCES

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