# Health Companion Device using Bluetooth & Alerting System

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*Abstract*— To take care of critically ill patient one requires accurate decisions so that we can protect as well as save the life. The major function of this paper is to deal with pulse/heart rate and temperature of body. This paper mainly Focus on pulse rate and temperature of the body. The sensors are used sense the Parameters and Microcontroller is used to receive the data from the sensor using Bluetooth module. Using sensor senses the pulse rate and temperature and enables early detection of the emergency .If the person's temperature or pulse rate exceed given limit it will alert to patient's or patient's relative by using alarm also it displays that parameters on LCD display ,and it will be shows/displays on mobile also using Bluetooth module. if the pulse rate and temperature exceeds beyond limits it displays message on mobile .The main advantage of this final proposed system is that it detects processes and sends patients data like pulse rate and temperature of body over a wireless. The major advantage of this system to reduce the cost for monitoring patient health using different types of sensor which is harmless to patient's body.

***Key words:*** Temperature Sensor, Pulse Sensor, Bluetooth

## I. INTRODUCTION

In today's life extensive interest in using wireless technologies in patient monitoring in various environments .This project is more useful for elderly people as they are more prone to chronic dieses and need continuous health monitoring . Health is something that changes on daily basis. Any action that we take impacts our body in some or the other way. it takes Consideration the current changes in environment, regular health monitoring is of more important. To ensure that we are healthy, we need to monitor our health on regular basis. Now a day there are different products are developed which supports the wireless health monitoring system. These wireless products are able to diagnose this issue before they become critical there are good chances to prevent these emergency issues. Thus even serious diseases can be avoided if the symptoms are tracked sooner rather than later. We aim that this propose system consist of a wearable device for regular health monitoring. This device will sense the temperature and pulse rate of the user, If the user's temperature or pulse rate crosses the set threshold, the device will notify the user using buzzer. In situations when the critical level is crossed, the user's relatives will be alerted about his/her deteriorating condition. these results also displays on mobile using Bluetooth Temperature and pulse rate also displays on also display on liquid crystal display this will health to avoid critical condition of user.

## II. OBJECTIVE

1) To implement embedded system using bluetooth and sensors.
2) To implement model using microcontroller programming.
3) To implement serial communication between microcontroller and mobile using Bluetooth.
4) To detect disease symptoms using pulse rate and heart rate displays on mobile.
5) Compare it with set parameters and real time parameters.
6) To alert patient using buzzer and displays that parameters on mobile.

## III. METHODOLOGY

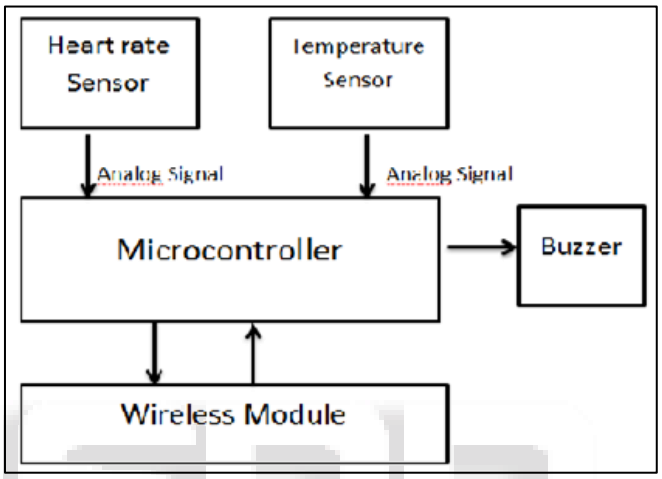


Fig. 1Block Diagram of the work

In this system basically we focus on pulse/heart rate and temperature of body.LM35 is used to sense temperature of body and pulse rate will measure by using pulse rate sensor .as we keep finger on pulse rate sensor it will senses the pulse rate, also as like pulse sensor temperature sensor also senses temperature of body as we keep it body. This data stored in microcontroller compares with given threshold limits and then send message on LCD display on mobile using Bluetooth module. After comparing this parameters if measured parameters are exceed threshold it will alert by alarming using buzzer. And also these parameters are displays on mobile with alerting message "PATIENT CRITICAL" if it exceeds limit.

## IV. MICROCONTROLLER AND SENSORS

we use ARM7 2138 microcontroller to stored data. These temperature and pulse rate of user is sensed by the sensors that are embedded in the device.The sensor to be used for sensing the pulse rate. It measures the variation in blood movement in the vessel. and LM35 is used to measure body temperature. These sensors are very suitable for wearable device. It is suitable for both finger and wrist.

## V. BUZZER

Buzzer is an electronic device which is mainly use to give an indication it is an electronic signaling device generally used for doorbell, alerting device which makes buzzing sound. Buzzer is the handy sound generator used in electronics to give audio indication

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## VI. ALGORITHM

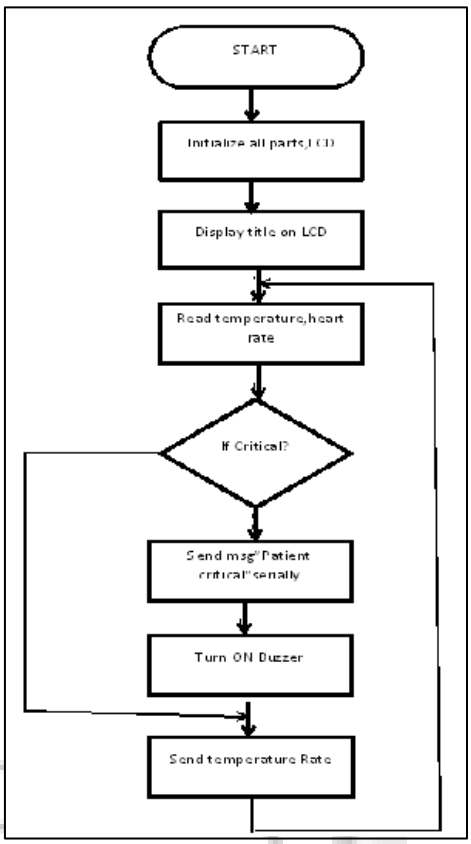
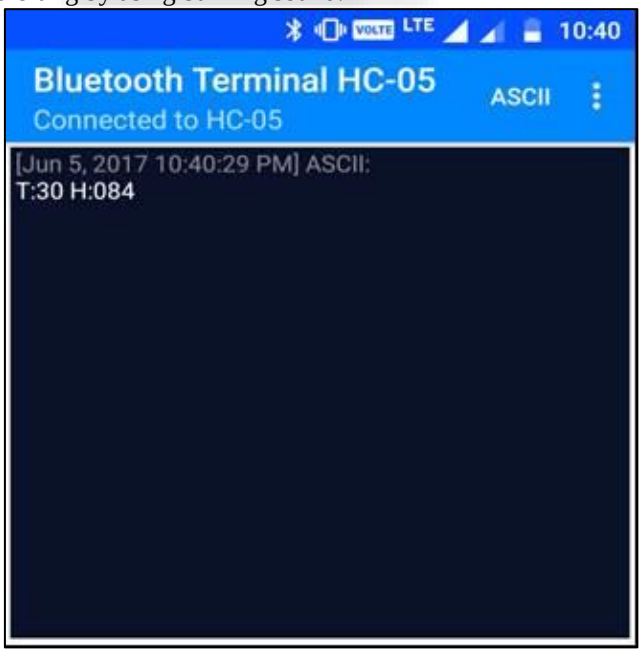
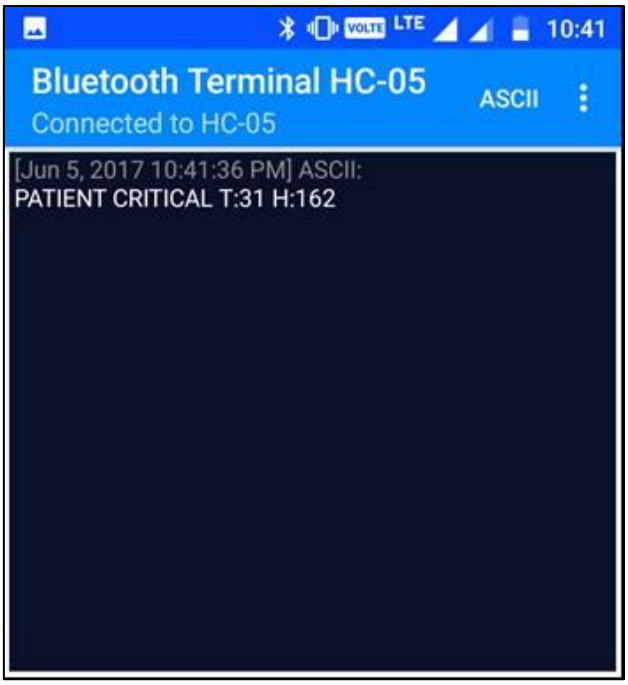


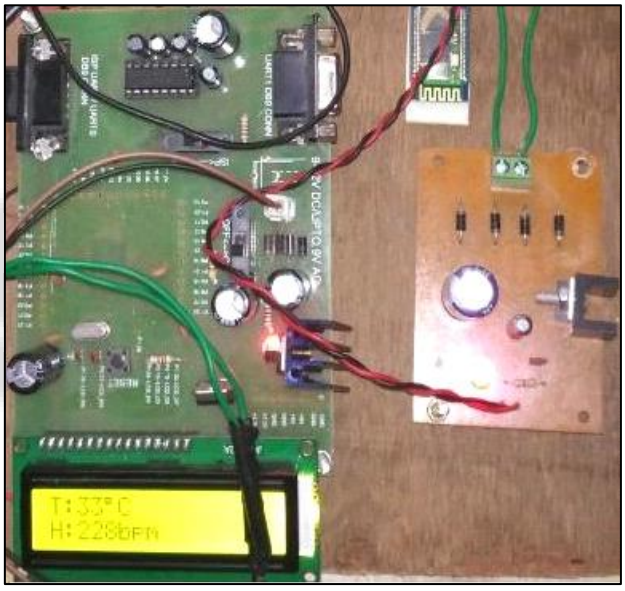

Fig. 2: Flow chart of system

## VII. RESULTS

The results obtained on mobile using Bluetooth showing pulse rate and temperature with alerting message and these results also display on LCD display on hardware .if parameters exceeds set pulse rate and temperature of body it alerting by using buzzing sound.



## VIII. CONCLUSION

The Objective of the project is to monitor people's health outside the clinical settings Our approach is to develop a wearable device that will monitor the temperature and pulse rate of the person on a regular basis and enable early detection of deterioration. If the person's temperature or pulse rate crosses the critical level, the buzzer will alert the person's relatives his/her deteriorating condition and it also shows reading on mobile with message.

## IX. FUTURE SCOPE

1) Accurate measurements of environmental parameters.
2) We can use wireless module as wifi or Zigbee which will be use for longer length.
3) We can create database to save data of previous reading which will be help for doctor to treat patient.
4) Able to correctly predict intervention based on sensor readings and historical data.
5) Interface database to keep previous records .

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