IOT Based Health Monitoring System

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Abstract:- So we propose an innovative system that automated this task with ease. Our system puts forward a smart patient health tracking system that uses Sensors to track patient health and uses internet to inform their loved ones in case of any issues. Our system uses temperature as well as heartbeat sensing to keep track of patient health. The sensors are connected to a microcontroller to track the status which is in turn interfaced to an LCD display as well as wifi connection in order to transmit alerts. If system detects any abrupt changes in patient heartbeat or body temperature. Also system gives graphical representation of Patient's "ECG". The system automatically alerts the user about the patient's status over IOT and also shows details of heartbeat and temperature of patient live over the internet.

Keywords:- IOT Wi-Fi, Microcontroller, LCD, Voltage Booster.

I. INTRODUCTION

Health is always a major concern in every growth the human race is advancing in terms of technology. Like the recent corona virus attack that has ruined the economy of China to an extent is an example how health care has become of major importance. In such areas where the epidemic is spread, it is always a better idea to monitor these patients using remote health monitoring technology. So Internet of Things (IoT) based health monitoring system is the current solution for it.. The core objective of this project is the design and implementation of a smart patient health tracking system that uses Sensors to track patient health and uses internet to inform their loved ones in case of any issues.While, in GSM based patient viewing, the flourishing parameters are sent utilizing GSM by strategies for SMS.

II. THEORY

A. Working Principle of ESP12E

We used the ESP12E as the microcontroller embedded with Wi-Fi, and the sensors are MAX30100 (pulse rate and SPo2 measurement sensor) and DS18b20 digital sensor (body temperature measurement sensor). And there are more components we are using, such as mobile application, serial display/plotter and LCD display. All the needed components for the health monitoring system are described in Figure 2 is the circuit diagram for the system. An ESP12E microcontroller, two sensors (MAX30100 and DS18b20), a 16×2 I2C LCD display make up the circuit whole system is powered by 3.3V & 5V. Microcontroller is connected to the

computer using a USB (Universal Serial Bus) that sends data to the device. Circuit was designed on an online circuit designing app called PCB creator.

B. Proposed of System

The core objective of this project is the design and implementation of a smart patient health tracking system. Fig.1 shows the overview of the proposed system. The sensors are embedded on the patient body to sense the temperature and heartbeat of the patient. Two more sensors are place at home to sense the humidity and the temperature of the room where the patient is staying. These sensors are connected to a control unit, which calculates the values of all the four sensors. These calculated values are then transmitted/ugh a IoT cloud to the base station. From the base station the values are then accessed by the doctor at any other location. Thus based on the temperature and heart beat values and the room sensor values, the doctor can decide the state of the patient and appropriate measures can be taken. Sensors The temperature sensor connected to the analog pin of the arduino controller is converted into digital value with the help of ADC.

III. WORKING PRINCIPLE OF SYSTEM

The body temperature, humidity and pulse rate sensors are monitored and initially displayed on LCD. The values from the sensors especially the body temperature sensor and the pulse rate sensor is stored in the database.
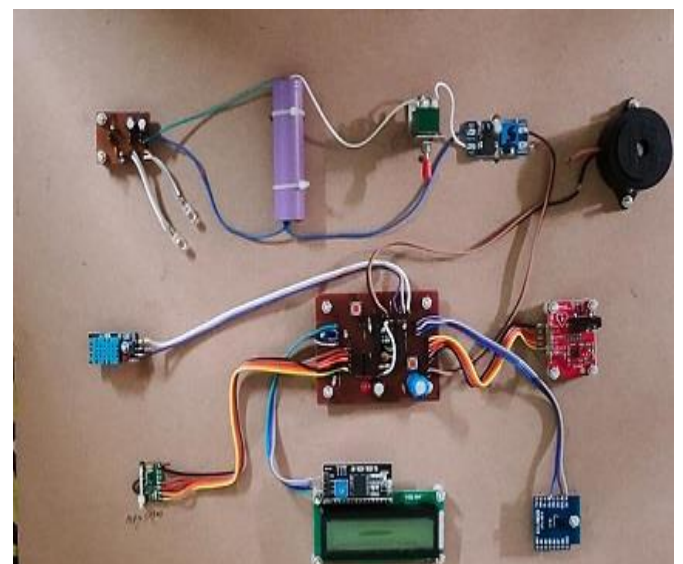

Fig 1:- Module

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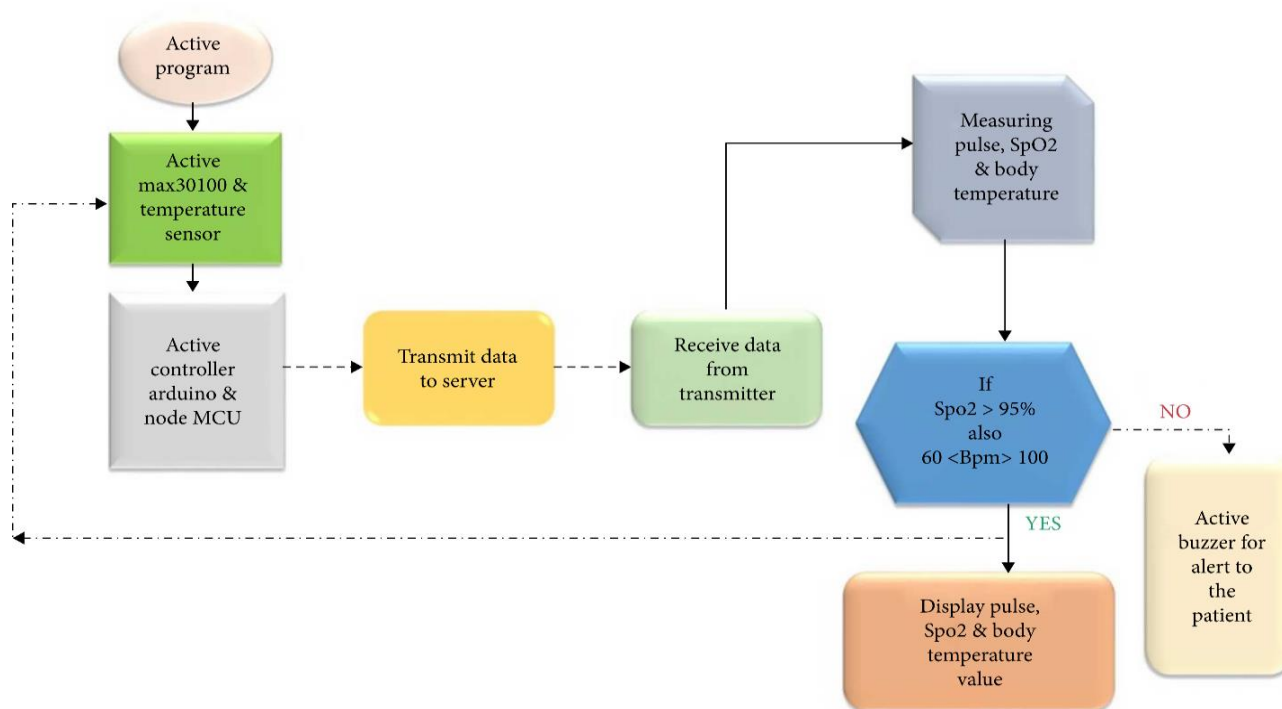

Fig 2:- Flow Chart

IV. CONCLUSION

Design and implementation of a health monitoring system using IoT are presented in this study. is IoT-based device allows users to determine their health parameters, which could help regulate their health over time. Eventually, the patients could seek medical assistance if the need arises. could easily share their health parameter data instantly within one application with the doctor. As we know, the IoT is now considered one of the most desirable solutions in health monitoring. It makes sure that the parameter data is secured inside the cloud, and the most important thing is that any doctor can monitor the health of any patient at any distance.

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