Smart Health Monitoring System

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ABSTRACT

Healthcare is given the extreme importance now a- days by each country with the advent of the novel corona virus. So in this aspect, an IoT based health monitoring system is the best solution for such an epidemic.Internet of Things (IoT) is the new revolution of internet which is the growing research area especially in the health care. conventional sensor based diagnosis in medial field requires more number of sensors and human efforts if it is processed in a large scale. It is a difficult task due to the shortage of medical professionals and system setup. To overcome this issue an IoT based health care application is proposed in the research work. The proposed system consists of the web and mobile application based on continuous wireless monitoring of patients. The objective is paper is to implement a low-cost system and transmit the patient vital signs in emergency situations. Sensors are being used for measuring the patient vital signs by using the wireless network.

INTRODUCTION

In day to day life, people are affected by various serious and complex diseases. which are highly sensitive diseases. So, people are continuously anxious about their health condition. They need to consult with doctors, according with reports and check up all of that. 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.

System Overview

In this project we designed one health care system, in which we have check temperature

,humidity, pulse rate and oxygen sense parameters of the patient and simultaeously they also displayed on LCD. This system we can use in hospital as well as in home level .we get patient all data will update on hospital web through wi-fi module.

It additionally arise even a underlying infection which include diabetes or an infection. So we revealthe covid patients frequently. In this system numerous sensors are used to monitor the numerous health parameters to realize the recovery rate and abnormalities in the health condition .Moreover the system makes use of Wi-Fi (Wireless Fidelity)technology for the IoT. in which application is issused here to displaying the covid affected person's health condition in online through mobile phone Functional analysis is used to set and anticipate the main needs of our design. This system uses additionally four sensors which are oxygen/pulse rate sensor, temperature/humidity sensor to monitor the oxygen saturation,pulse rate and temperature of the COVID patient respectively. All sensors of the propose frame work and these sensors output values are used to checked health condition of the patients. These sensors are connected to the microcontroller to monitoring the health parameters of the COVID patients. If there is find any abnormalities in one of the health parameters of the patients, the microcontroller immediately triggers an alert message through the emergency core button and Wi-Fi

module. The proposed frame work used Nemours health sensors such as temperature sensor, heart beat sensor,oxygen/pulse rate sensor. These sensors have been used for IoT to be transmitting the medical data by using the ESP8266 Wi-Fi module and the patient's data can be saved, analyzed, displayed. It can be viewed by using mobile application.
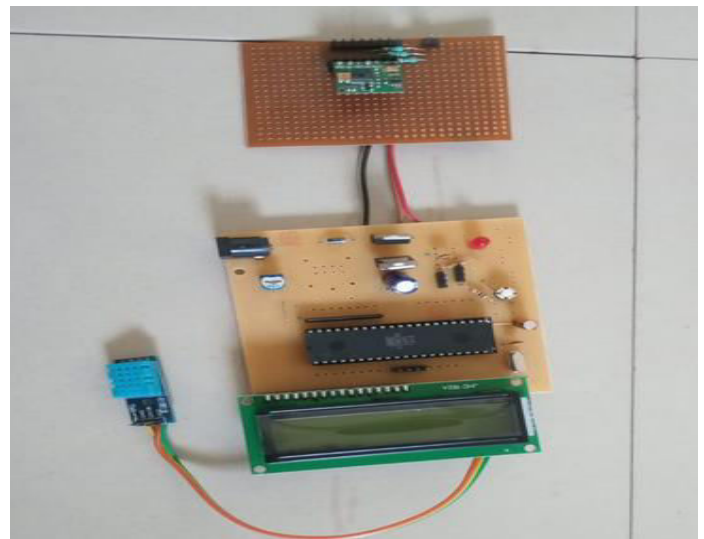
System Interface

Fig. 2: *Smart health monitoring system using IOT*

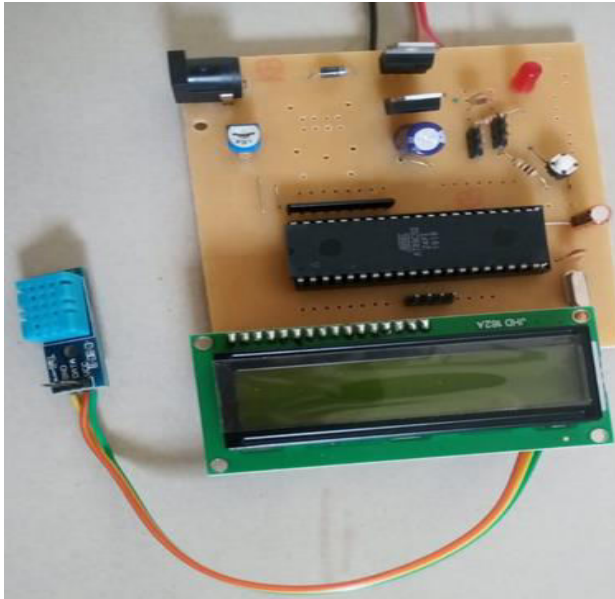- Temperature & Humidity sensor(DHT11)
- Pulse/Oxygen sensor(SPO2)
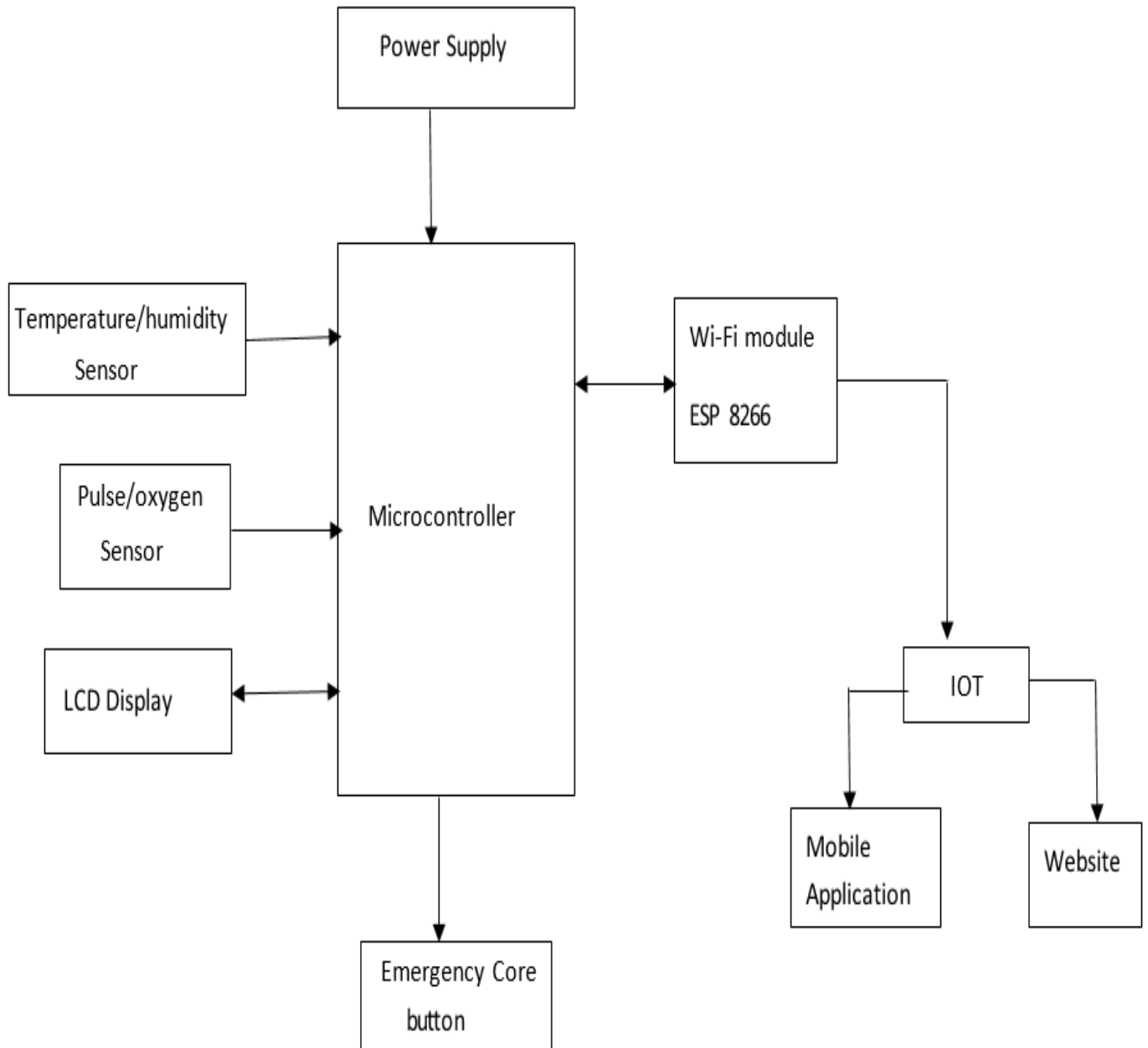
Fig. 3: sensor interfacing

Functional Analyses

Fig. 1: *Block Diagram.*

HARDWARE AND SOFTWARE TOOLS

Hardware

5	89	36.2	97	48%

1. Power Supply
2. Microcontroller
3. Temperature Sensor/humidity sensor
4. Pulse oxymetry/Oxygen sensor
5. LCD Display
6. Wi-Fi Module (ESP8266)

Software

- Proteus for PCB design
- Keil compiler microcontrollerembedded c programming
- Flash magic Web server HTML, PHP.

OBTAINED RESULTS:

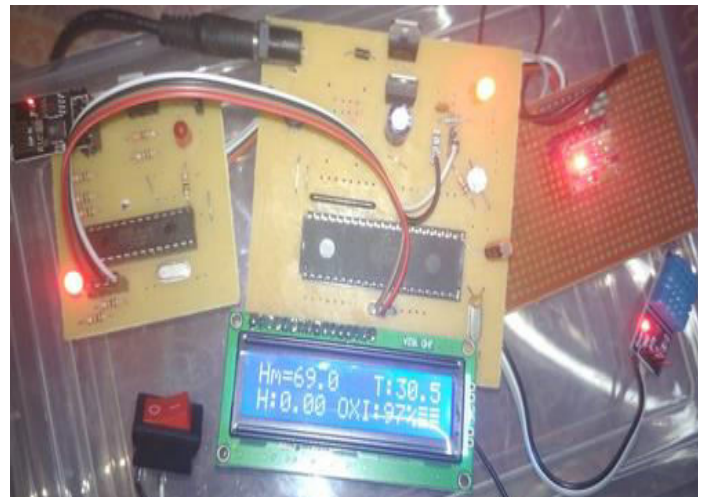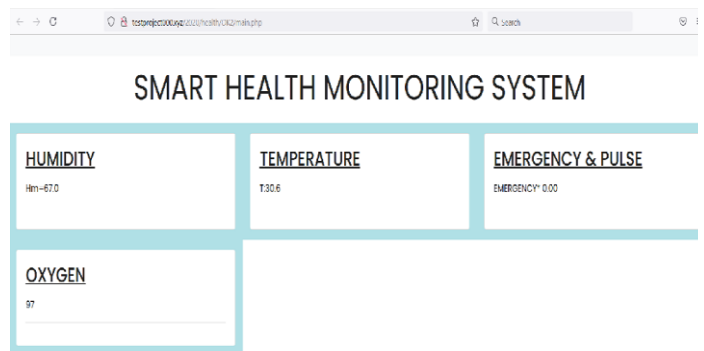| Sr.No.	Heart Rate /Pulse Rate	Temperature (°C)	Oxygen level	Humidity (%)
1	75	30.5	97	69%
2	81	34.9	94	44%
3	79	37	99	36%
4	95	35.6	95	40%

Fig. Result on LCD Display

Fig. Result on Web Page

CONCULSION AND PERSPECTIVES

The proposed system is implemented for wireless health monitoring of the patients. The vital parameters are measured by the sensors such as pulse sensor, temperature sensor, oxygen sensor, humidity sensor .The proposed model allows the doctors to monitor patient health from anywhere. The proposed system helps people to consult the specialist

all over the world. The system uses IoT and wireless sensor technology for efficient health monitoring. The data from sensors is taken

every 30 seconds. The data is stored and can be visualized on the webserver. The system is implemented in such a way that if the sensor data exceeds the threshold values, a message is sent to the doctor. The main advantage is in case of emergency the intervention time between doctor and patient is reduced. The objective is achieved by proposing a low-cost system for saving human lives so that human lives will be comfortable.The limitations are the doctor's availability.

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BIOGRAPHIES

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