

Health Hub

Kambli Saleel¹ Nayak Harshil² Yashod Swapnil³ Gaikwad Maitrey⁴ Prof.Dr. Jyoti Mali⁵

^{1,2,3,4,5}Student ⁵Assistant Professor

^{1,2,3,4,5}Department of Electronics & Telecommunication Engineering

^{1,2,3,4,5}ACE COE Malad (W)-400095, Maharashtra, India

Abstract— here we are using a device which is used by the people worldwide but during this pandemic the use of this kind of devices have been increase. Especially at the places like hospitals, clinics and at our homes. Known health kit. This kit will help us to determine the blood pressure oxygen level pulse level before meeting any doctor. this method can be implied sitting at your own house.

Keywords: Health kit, sensors, esp8266, smart health care using IOT

I. INTRODUCTION

Here in this project we are using different sensors which will absorb the reading of the patient which will give us not only us the doctors seating in the clinics as well as inside the hospitals.

For these we are taking well equipped sensors or well-known sensors such as MAX30100 PULSE OXIMETER, DHT11, DS18B20AND ESP8266 which works as the heart of this project.

This technology is not new but it is not accessible for every human being so we are trying to make it at low price as possible example like in countries like Vietnam, Taiwan, India, etc.

This project will help to determine whether the disease is the chronic disease or not.

With the help of this project patient can get email form the doctor or hospital as well if he/she is affected by virus or not.

II. RECOGNITION OF PROJECT

We are making a health kit which will determine all the [2]. We are using ESP8266 development board, sensors to grab the readings of the patient. And their should be internet so the patient health reading will directly send to the web page.

III. BLOCK DIAGRAM

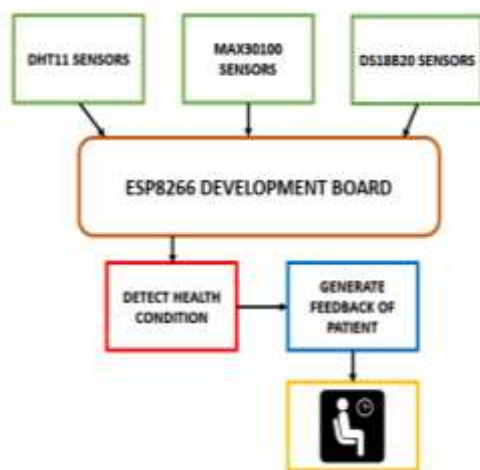


Fig. 1: Block Diagram Of health hub

A. Block Diagram Description

In Fig.1 five blocks are shown, these blocks play important role in order to work project.

First block is Sensors Input. In this block three sensors are present DHT11, MAX30100, DS18B20. These SENSORS use to give input to the development board.

Second block is ESP8266, it is the heart of the of the health hub it receives all the data from the sensors and display it on the web page or via email

Third block is detecting the condition, it is used to display all the health condition of the patient. It will display it on web page immediately as the reading is taken.

Fourth block is Generate a feedback it plays important role as to give the patient that it generates all the reading and further it tells the patient that is the patient suffering from any disease or not.

Fifth block is patient it will take the report and submit it to the hospital/clinic to the doctors.

IV. CIRCUIT DIAGRAM

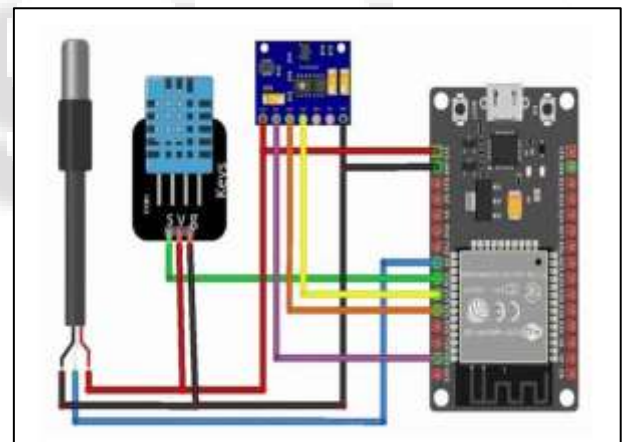


Fig. 2: Circuit Diagram of Health Hub

A. Circuit Diagram Description

Fig. 2 shows the circuit diagram of our project. ESP8266, MAX30100, DHT11, DS18B20, are the main components of our project.

ESP8266 is capable of functioning reliably in industrial environments, with an operating temperature ranging from -40°C to $+125^{\circ}\text{C}$. Powered by advanced calibration circuitries, ESP8266 can dynamically remove external circuit imperfections and adapt to changes in external conditions.

DHT11 AND DSB18B20 This is a pre-wired and waterproof version of the DS18B20 sensor. Useful once you got to measure something distant, or in wet conditions. The sensor can measure temperatures from -55 to 125°C (-67°F to $+257^{\circ}\text{F}$). Actually, the cable of this sensor is jacketed

MAX30100 is an integrated pulse oximetry and heartrate monitor sensor solution. It combines two

B. Observation

Fig. 3 shows the results we get from applying all the sensors on different people and getting its output at different levels.

C. Result Explanation

It is being observed that we have obtained the result through different sensors and it being played on different human at same time

As the header of this title that smart healthcare system or health hub it says that it is very much efficient for the clinic or hospital staff and also for the patients. And patient can take the result or the reading of itself from anywhere and visit the clinic or hospital if needed. With the help of our prototypes it will always show the real time values of different different health parameters which are measured and it would be very helpful for the doctors to operate immediately rather than waiting for te reports to appear before them.

V. RESULT

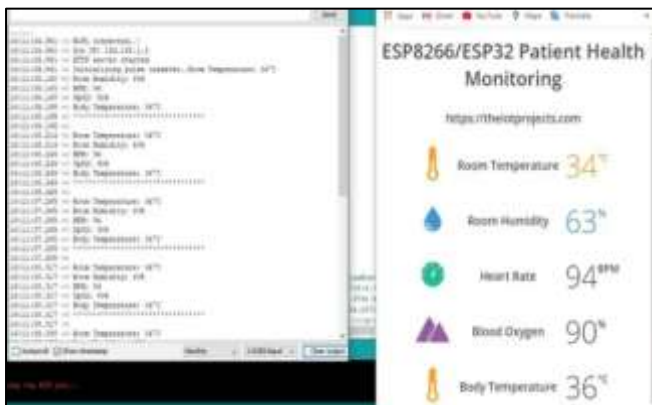


Fig. 3: Resulting Effect of HEALTH HUB on human LEDs, a photodetector, optimized optics, and low-noise analog signal processing to detect pulse oximetry and heart-rate signals. The MAX30100 operates from 1.8V and 3.3V power supplies and can be powered down through software with negligible standby current, permitting the power supply to remain connected at all times.

ADVANTAGES

- Smart sensors will analyze health conditions lifestyle choices and the environment and recommendation of preventing measures which will reduce the occurrence of disease.
- It will reduce the health care cost.
- Accessibility of electronic medical records allow the patient to receive quality care and health care providers make make the right medical decision and prevent complication.
- Fingerprint Recognition is used in project for safety/security reasons.

DISADVANTAGES

- Security and privacy remain the major concern determining user from using IOT technology for medical purpose as healthcare monitoring is being breached or hacked.

- Failure or the bugs in hardware or even power failure can impact the performance of the sensors and connected equipment placing health care operation at risk.

VI. FUTURE SCOPE

According to the availability of sensors or development in biomedical trend more parameter can be sensed and monitored which will drastically improve the efficiency of the wireless monitoring system in biomedical field. A graphical LCD can be used to display a graph of rate of change of health parameters over time

The whole health monitoring system which we've framed are often integrated into a little compact unit as small as a telephone or a wrist watch. This will help the patients to simply carry this device with them wherever they are going.

VII. CONCLUSION

We are pleasure to conclude our project on the topic "health hub". The detail of this project has been made by members of our team sincerely with the inspiration of our tutors.

Through this project we have done precognition machine of patient health. For controlling ESP8266 and various sensors is used.

The result we are getting from that we can conclude our project is enough to detect any kind of disease present on people in 40 to 50 sec and our health hub kit is working fine.

REFERENCE

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