

Patient Health Care Detector

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ABSTRACT

Now a day Humans are facing many problems in lack of medical care to patient at right time. During treatment, it is highly important to continuously monitor the patient. In this system a patient will be carrying hardware having sensors, the sensors will sense the body temperature, heart beat rate, ECG, SpO2 and these data is transferred to Adafruit cloud via Wi-Fi Module. System has the cloud database which stores all information about patient's health and the doctors will prescribe medicine using this information stored on cloud. The Proposed System uses Arduino Board as an IOT device that interfaces three sensors and read the patient health parameters. The three sensors: pulse sensor kit, blood pressure sensor kit and temperature sensor kit sense the patient health parameters and the output of each sensor kit is given as input to the Arduino board. The Arduino sends the data to cloud database (Adafruit), analyze and visualize the normal readings.

Keywords- Internet Of Things, Heart rate sensor, Body temperature sensor, ECG, SPO2, Adafruit.

I. INTRODUCTION

Proposed system introduces measurement of patient's health parameters using the sensors. If we connect a sensor to patient's body it will sense health parameter such as temperature, pulse rate, ECG and SPO2 using this observing the patient continuously and send the data to the doctor. In Order to solve health issues the patient have to monitor continuously, the patient health details in periodic interval is necessary in existing technologies. However, existing works lack flexibility, scalability, efficiency. Using Adafruit or his caretakers can view the patient health status. The aim of this research is to provide a medical monitoring such as the heartbeat, body temperature, ECG, SPO2 for the individual at any time and any place. Here sensors are used to sense the parameters of the human body, the sensed outputs from the sensors are then sent to the Arduino. This system is very effective in monitoring a person's health continuously because it is fully automated. It can be tested very easily with any person.

II. EXISTING SYSTEM

In the existing system, The sensors are attached to the body of the patients without causing any discomfort to them. In PMS monitor the important physical parameters like body temperature, ECG, heart beat rate and blood pressure using the sensors which are readily available. Thus, the analog values that are sensed by the different sensors are then given to a microcontroller attached to it. The microcontroller processes these analog signal values of health parameters separately and converts it to digital values using ADC converter.

III. DRAWBACKS

- One way communication.
- Diagnosing with help of a doctor

- Conventional devices that can only measure a particular parameter
- Devices that have to be connected invasively to get measurements
- No automated system exists.

IV. PROPOSED SYSTEM

The Proposed Patient Monitoring System with two-way communication i.e. not only the patient's data will be sent to the doctor through SMS and email on emergencies, but also the doctor can send required suggestions to the patient or guardians through SMS or Call or Emails and also connected to the cloud database (Adafruit).

V. MERITS

- Intelligent system based patient health detection system for 24/7 online doctors/prescription.
- Bridging the gap between the doctor and the patients.
- Best to be used on rural areas, easy to operate.
- Better monitoring about the patient health.
- Precaution about early morning heart attack can be easily identified and intimated.

VI. MODULES

The system functionality is divided into major three modules; They are:

- Sensing Module
- Checking Module
- Interaction Module

6.1. Sensing Moduling

The Sensors being

- Pulse Sensor
- Temperature Sensor
- Wi-Fi Module

Pulse Sensor: The Heart Beat Sensor provides a simple

way to study the heart's function. This sensor monitors the flow of blood through Finger. 60 to 100 beats per minute is the normal pulse rate.

Temperature Sensor: The most widely measured physical parameter is body temperature; it can be calculated by putting the sensor in contact with human body. The sensor used in this project is an LM35 temperature sensor. LM35 is a precision IC temperature sensor with its output proportional to the temperature (in °C).

6.2. Checking Module

In the checking Module, the Arduino sends the data to cloud database (Adafruit) and analyze the normal readings, if it is abnormal, the data is sent to the Interaction Module.

6.3. Interaction Module

This interaction module sends the health condition of the patient to the doctor available online and sends the prescription to the patient

VII. REQUIREMENTS

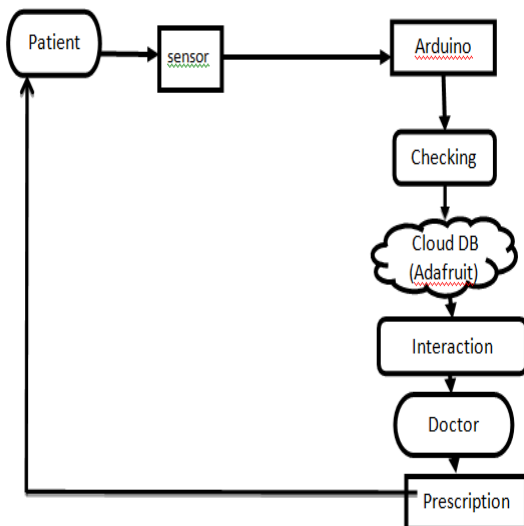
7.1. Hardware

- Arduino Uno
- ESP8266 Wi-Fi module
- LM temperature sensor
- Pulse rate sensor
- ECG

7.2. Software

- Arduino Compiler
- Language: C
- Cloud : Adafruit cloud

VIII. ARCHITECTURE DIAGRAM



IX. CONCLUSION

In this proposed system a mobile physiological monitoring system is presented, which is able to continuously monitor the patients heart beat, blood pressure and other critical parameters in the hospital. We proposed a continuous monitoring and control mechanism to monitor the patient condition and store the patient data's in server using Wi-Fi Module based wireless communication.

X. FUTURE ENHANCEMENT

The Future work of the project is very essential in order to make the design system more advanced. In the designed system the enhancement would be connecting more sensors to internet which measures various other health parameters and would be beneficial for patient monitoring i.e. connecting all the objects to internet for quick and easy access. Establishing a Wi-Fi mesh type network to increase in the communication range.

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