

NON-INVASIVE WEARABLE SENSOR FOR MONITORING CHRONIC DISEASES

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Abstract

The main aim of the project is to enhance the ongoing family wellbeing condition that can encourage specialist through cloud for constant perception so as to get total wellbeing information. Distinguish and illuminate the crisis case according to quiet wellbeing condition, for example, tablets to home or emergency vehicle level. Human services being a worldwide issue all the more especially in India, one of the highest populated countries where the highest part of people live in towns with denied medicinal services offices on ongoing premise consistently and routinely. With the expanding utilization of innovation, there is a dire need to have a brilliant wellbeing checking framework that can discuss between arrange gadgets and applications to support the patients and specialists to screen, track and record and transmit the patient's delicate information containing the clinical data. The paper portrays settling medical problems utilizing the most recent innovation, IoT. It displays the design audit of brilliant human services framework utilizing IoT which is expected to give a better healthcare to everybody.

Keywords: Emergency, data, record, signal, information.

I. INTRODUCTION

Staying healthy is the most imperative job in each person. Despite the fact that individuals are having all the extravagances in their lives, however in the event that their wellbeing isn't in acceptable condition they can't advance their lives. The main aim of the project is to develop a dependable patient monitoring framework assuring the

social insurance experts which can screen the patients who are hospitalized or executing their day to day routine. The patients screening systems are one of the important progressions due to its specific innovation.

In the custom method, the social insurance experts assume the significant job. They have to go to the patient's ward to get essential determination and prompting. Two fundamental issues relate with this methodology. Wearable sensors make their contact with body and physiological parameters[1]. Purchasing the assortment in the market eg: ECG, temperature sensors. It indicates the exactness, size and adaptability.

II. LITERATURE SURVEY

A. Existing System

The primary motive of the medicinal service industry is to give better human services to all the individuals anyplace and whenever on the planet. This ought to be done in a progressively tolerant neighborly and monetary way. Along these lines for expanding the patient consideration effectiveness, there is a need to improve the patient checking gadgets. Innovation has made life simpler with the goal that effect is appeared to lessen the strain of patient.

The body sensor arrange network (BSN) innovation is one of the most basic advancements utilized in IoT-based present day services framework. Basically, an assortment of less-force and light-weight sensor with remote that are used to screen the body function of patients and general condition's hubs are utilized to gather delicate data and may screen even in difficult circumstances, likewise, they need exacting security instruments to forestall pernicious communication with the work.

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B. Drawbacks of existing method

- Wired arrange limitation inhibits mobility and ease of the subject.
- Time consuming since it takes time to break down the manual perusing.
- Interference noises sourced by various other gadgets

III. PROPOSED METHOD

The proposed method is to take care the particular person for the family members with their applications. The cloud stores the data from the patient body with help of the sensor. The doctor and the patient share the collected data through the cloud. The various range of temperature and pressure levels are uploaded by the doctor in the prescription. The patient can view the changes in the web sheet can be easily made by the health center [2].

The operation of the system controls the node much controller. The health status like temperature sensor, pulse sensor and alcoholic sensor are measured. The readings taken are analyzed and displayed in the arduino IDE, software HTML is used to create a webpage for storing and displaying the database using IOT.

A. Advantages of Proposal System:

- The control adaptive remedy of complete patient’s physical data is collected and presented timely.
- The health condition of the patients can be diagnosed in an early stage by the doctors and related family members.
- The single patient is not confirmed to the proposed system with slight modification to take care of a greater number of patients.
- This system can provide real time data in low cost.
- The doctor sends back the prescription to the patient.

IV. BLOCK DIAGRAM

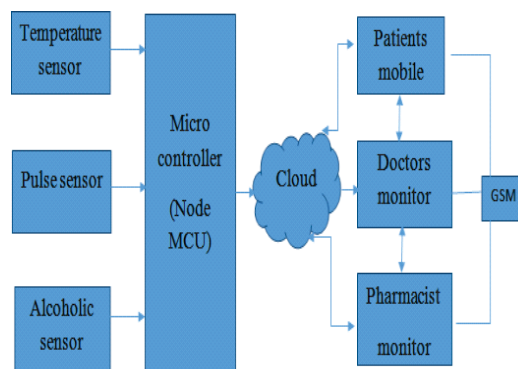


Fig. Proposed block diagram

The figure describes about the continuous observation of the patient health and the maintenance of database[3]. The integration of the IOT and cloud technologies to continuously provide the data monitored is the main objective for both the data center and server observation. The operation of the system is controlled by the mcu controller. The health status with sensors are measured[4]. The taken readings are analyzed and displayed by the Arduino IOT software. IOT is used to create a webpage for displaying and storing the database using HTML.

- In our proposed method, the particular sensor collects the real-time data in an authorized healthcare professional using IOT system. The contributions are:
- Monitoring the framework of flexible energy efficient and scalable status of the patient.
- The patient health care is a mechanism of clustering and classifying the health data.
- The diseases of the patients are exploited in the capabilities of the Arduino.
- It shows the effects on the performance of analysis of the Arduino framework.

Thus, it is helpful to analyze the complete health data with real time health condition that view doctor through the cloud[5]. Hence, the immediate case of the patient health condition such as tablets and ambulance are easily detected and informed.

IV. HARDWARE DESCRIPTION

A. Node mcu:

The Node mcu (Node Micro Controller Unit) is a hardware development software which is made around a SOC named as ESP8266.

B. Temperature Sensor:

Temperature sensor, LM35 series, is an integrated circuit with precision, where the final output is proportional to temperature[6]. It has a main advantage i.e., linear sensors which is calibrated in kelvin.

C. Pulse Sensor

The pulse sensor is a heart rate play sensor for Arduino. The volume of flow is obtained by the heart rate and light is absorbed by the blood and the obtained signals are equivalent to that heartbeat.

D. Alcoholic Sensor:

The alcohol sensor is a body module for Arduino. It is a MQ3 semiconductor sensor that gives quick response and better sensitivity to alcohol[7]. It is suitable in providing breath analyzer. It gives a voltage that is inversely proportional to concentration in air.

V. RESULTS AND DISCUSSION

Sensors are in contact with the node MCU. Then the sensors are calibrated and then noted. The values are entered in the server using Node MCU. The server sends the information to the closed one. In immediate cases, the alert will be sent to doctor through GSM module. The Doctor will send the prescription to the closed one through the server.

VI. CONCLUSION

Thus to conclude, the patient will get the prescription to the mobile by the doctor. Patient's health condition will be monitored by their guardians and they will be helpful during the time of emergency cases. The patients' health is screened and real time health conditions of the patients will be

facilitated by doctor through cloud for continuous monitoring in order to obtain complete health data base. It is also possible to detect and inform the emergency cases as per the patients' health condition such as tablets to home or ambulance level.

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