IOT Patient Health Monitoring System

Sachin Maske (E&TC JSPM)
Advait KambleB (E&TC JSPM)
Balu Landge (E&TC JSPM)
Guide By: Dr P A. Kalyankar [E&TC JSPM]

---***--
-
.

ABSTRACT

The Patient healthcare monitoring system in IoT is the latest healthcare solution that use the power of Internet of things. This paper shows a wireless system which allows real time access to multiple patients vital readings. In healthcare system vitals need to be constantly monitored. So the system we propose monitors the heart rate and other such vital information and constantly monitors it. For example Photoplethysmography used to measure heart rate. all the sensors are connected to arduino uno. This project is absolutely important for medical practicers and healthcare workers as it has the potetial to vastly improbe their capabilities and reduce the burden on the system, as we lnow that medicine is the absolute pillar without which the whole civilisation will be affected and this system further enhances the medical facilities and improve on it using IoT he data is constantly transmitted through a module through an encoded serial data using Bluetooth and a receiver module in the doctors cabin receives the data and decodes it and displays it continuously on a user interface which is visible on PC/Laptop. This enable doctor to observe many patient at a time using a wifi module and the system also gives an alert if the patient show any irregularities, by giving an audio-visual warning that the patient requires immediate attention.

Key Words: Heart-beat, IOT, Sensor, Patient, Arduino, Temperature

INTRODUCTION

This project allows us to track the vitals of patients remotely. With aging population and rapid advancement in technology and medicine it is of utmost importance that primary healthcare facilities are improved as well. This is done by using this system which tracks your heart-rate, temperature, and movement and alert the respective authority incase of any abrupt and unnatural changes. This is very useful for elderly or the people who live alone and require medical attention.
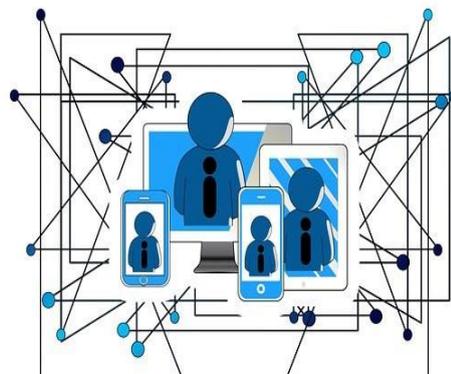
DESCRIPTION

In this project we use heart beat sensor to track the heart rate of the patients, LM35 to track the patients temperature and accelerometer sensor which measures acceleration in case the patient met an accident in movement and fell. All these readings are displayed in the lcd display as well as the application where we can see these readings and the doctor can monitor them in the hospital, far away from the patient . Here the temperature sensor can detect accurate temperature of the body and heart beat sensor can give accurate heart rating and blood pressure of the body, with this the amount of work, time and the pressure on the medical staff will vastly reduced.

The modules are easy to connect to a microcontroller. All the sensors are low cost and easily available. Blood pressure sensor being non invasive sensor , it is safe to use by any individual, instead of watching mercury levels or calculating pressure the sensors make the task easier by just displaying the results.

Heart rate can be checked using heart rate sensor it would usually use IR LED and photo detector would be a photo diode, an LDR or a photo transistor . A simple heart beat consists of a sensor and a control circuit.

LM35/DHT11 measures humidity and temperature, both can be interfaced with arduino and get results immediately, they both are long lasting and cost effective

Figure1.

3. CONCLUSIONS

This system is proposed as an alternative method for handling patients which decreases doctors or nurses workload and simultaneously helping the patients be worriless as their quality of life is improved. As patients wont need to visit the doctor and vice versa for just taking mundane reports and constantly monitoring the patients as well with the help of sensors.

REFERENCES

[1] Prosanta Gope*et al*. 2016. BSN-Care: A Secure IoT based Modern Healthcare System Using Body Sensor Network. IEEE Sensors Journal. 16(5): 1368-1376.

[2]] Tzonelih Hwang *et al.* 2016. Untraceable Sensor Movement in Distributed IoT Infrastructure. IEEE Sensors Journal. 15(9): 5340-5348

[3]] Tae-Yoon Kim *et al*. 2015. Multi-Hop WBAN Construction for Healthcare IoT Systems. IEEE Platform Technology and Service (PlatCon), International Conference. pp. 27-28

[4] CharalamposDoukas*et al*. 2015. Bringing IoT and Cloud Computing towards Pervasive Healthcare.IEEE Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS), International Conference. pp. 922-926

[5] Tianhe Gong *et al*. 2015. A medical Health care system for privacy protection based on IoT. IEEE Parallel Architecture, Algorithms and Programming (PAAP). pp. 217-222.

[6] Lin Yang *et al*. 2014. A Home Mobile Healthcare System for Wheelchair Users.Proceedings of the 2014 IEEE 18th International Conference on Computer Supported Cooperative Work in Design.pp. 609-614. ARPN Journal of Engineering and Applied Sciences©2006-2017 Asian Research Publishing Network (ARPN).