

Health Monitoring Systems using IoT and Raspberry Pi – A Review

ABSTRACT

Now-a-days health problems like cardiac failure, lung failures & heart related diseases are arising day by day at a very high rate. Due to these problems time to time health monitoring is very essential. A modern concept is health monitoring of a patient wirelessly. It is a major development in medical arena. Thus paper based on the monitoring of the patient that is done by the doctor continuously without actually visiting the patient. Health professionals have developed a brilliant and inexpensive health monitoring system for providing more comfortable living to the people suffering from various diseases using leading technologies like wireless communications, wearable and portable remote health monitoring device. As a result, visits of doctors to the patients constantly are decreased as the information regarding patient's health directly reaches to doctor's monitor screen from anywhere the patient resides. Also, based on this doctors can save many lives by imparting them a quick & valuable service. In this, IoT is becoming a major platform for many services & applications, also using Raspberry Pi not just as a sensor node but also a controller here. Paper propose a generic health monitoring system as a step forward to the progress made in this department till now.

EXISTING SYSTEM

In existing system, generally patient has to visit the hospital for medical diagnosis and treatment. If the patient is an elderly person then he /she will gets tired easily and sometimes they are not in a position to move. Heart attacks will occur without any prior intension. In this situation also it is difficult to move the person. Sometimes doctors don't recognize the problem as they do not know the patient's health record.

DRAWBACKS

- It is difficult to move the patient sometimes in emergency.
- Patient get tired quickly.

PROPOSED SYSTEM

This paper proposes a health monitoring system which is capable of detecting multiple parameters of our body such as blood pressure, temperature, heart rate, ECG & further transmitting this information on an IoT server through 2G/3G/4G GSM technologies. Also in case of emergency, automatically generating alerts will be sent to doctors and family members if any unusual activity is detected by or near the patient. A continuous record of body health parameters can be used to detect the disease in a more efficient manner. Various sensors have been used like AD8232 ECG sensor for remote ECG monitoring, blood pressure sensor (4811) is used to measure systolic pressure and diastolic pressure & pulse rate for few seconds. LM35 temperature sensor is used to measure surface temperature of skin. Satisfactory work is done in health monitoring by using raspberry pi as well as IoT, but this paper gives embedded concept of both the platform. By using combination of these, the proposed structure will be more effective. In this paper, we investigated recent papers related to health monitoring systems & IoT. IoT is nothing but an advanced concept of ICT (Information Communication Technology). IoT is the interconnecting of devices and services that reduces human intervention to live a better life. This paper as showing the advancements in health care management technology, it would save patients from the future health problems that would arise and would also help doctors to take an appropriate measure or action at a proper time regarding patient's health.

ADVANTAGES

- It is simple
- It is easy to understand

SYSTEM REQUIREMENTS

H/W System Configuration:-

- Processor - Pentium –IV
- RAM - 4 GB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

S/W System Configuration:-

- Operating System : Windows 7 or 8 32 bit
- Application Server : Tomcat5.0/6.X
- Programming Language : Java
- Java Version : JDK 1.6 and above