Health Monitoring Based on IoT using RASPBERRY PI

Abstract:

The world of medical science is an emerging area that has accelerated with new technologies and this is the time when the vision of "The internet of things (IoT)" has turned into reality. IoT can play a significant role in healthcare domain by managing chronic diseases at one end as well as preventing diseases on the other hand. People demand more care at reduced clinical costs, remote health monitoring (using IoT) is one of the possible solutions to this demand. Remote health monitoring can be best utilized provided the device is wearable to facilitate self monitoring. In this paper, we propose a system for monitoring of pulse rate, body temperature (vital body parameters) of the person with dedicated sensors along with Raspberry pi and IoT. A system is wearable and also supports remote health monitoring. Remote Health monitoring is attained by storing the collected data to Bluemix cloud, this data can be retrieved by the doctor for analysis anywhere and any aberrancy will be timely detected. Bluemixuses MQTT(Message Queuing Telemetry Transport) protocol. Along with remote monitoring and wearability of system, accuracy and cost cannot be ignored. A perfect tradeoff between accuracy and cost of the system is accomplished by choosing appropriate sensors which are DS18B20 (temperature sensor) and KG011 (heart rate sensor). The pulse rate and temperature of a person at different time instants are measured by the sensors. The readings are shown in the form of graphs at IBM Watson IoT platform.