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Abstract

Life is valuable many people are losing life due to heart attack. We all know heart attack will kill our life in 3 attempts but, now-a days it can be dangerous in 1st attempt also. Due to late detection of heart attack we are unable to save human life. Usually heart attack detection is done traditionally using specialised hardware devices. With the help of increased technology, we should be able to capture and monitor the changes in our body. In this paper we proposed a system, which will detect heart attack with the help of different scenarios. i.e. Monitoring heart rate, smart BP system, heart beat sensor to find out the current heart beat level and display it on the LCD screen based on IOT(Internet Of Things).

Index Terms: IOT, Detect, ECG, Heartbeat Sensing, Pulse sensor *etc.*

I. INTRODUCTION

This system can detect pulse, temperature regularly with the help of sensor. Heart attack can occur when the flow of blood to heart is block. Owing to late diagnosis of heart attack we are inadequate to save the life of many humans. Doctor can set the threshold for all parameters. If this parameters cross the max limit, systems send notification on server through Wi-fi. For a healthy adult, ordinary heart rate is 60-100 bpm (beats per minute). Athlete's heartbeat generally depends upon their fitness. If a person heart rate is constantly over 100 bpm, then the person is said to be having higher heart rate which is also notorious as tachyarrhythmia.

Habitually diseases have a powerful influence on human-health care where cost of

curing chance of attack is natural among people.

Changes in analytical structure and dearth of health and social care forces to study new modernisation technique, which could be a help to these obstacles. Elderly people need to make regularly visit to doctor for their health sign

test result. Observing on regular basis of essential signs is compulsory as they are main signs of well-being of one's individual health^[1]. This vital signs include,

- a. Pulse rate.
- b. Body temperature.

There must be proper method of transmission and to display the signal after the data is proceed. RPM is one of the main technology which will help us to monitor the patients who are not in reach of common clinical settings, which will

increase the care and reduce the cost of the delivering human-health care.

The term IOT, often called Internet of everything, was first introduced by KELVIN ASHTON in 1999 who dreams a system where every physical object is connected using the internet via ubiquitous sensors. The IOT technology can provide a large amount of data about humans, objects, time and space while combining the current internet technology and IOT provides a large amount of space and innovative service based on low-cost sensors and wireless communication.

Every one today is so busy in their lives; even they forget to take care of their health. By keeping all this things in mind, technology really proves to be an asset for an individual with the advancement in technology, lots of smart or medical sensors came into existence that continuously analyses individual patient activity and automatically predicts a heart attack before the patient feels sick. Therefore, identifying the correct sensor is important. IOT typically expected to propose the advance high bandwidth of connectivity of embedded devices, systems and services which goes beyond machine-to-machine(M2M) context.

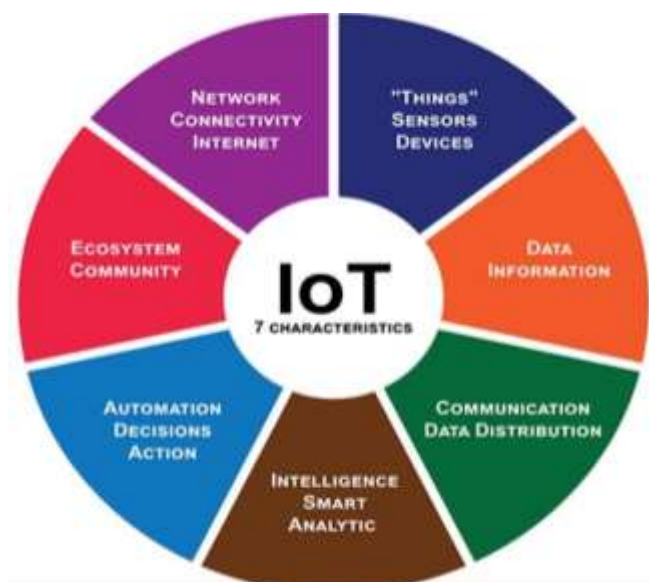


Figure 1: Concept of IOT

The most common characteristics of IOT are:

1. Intelligence.

2. Connectivity.
3. Dynamic nature.
4. Enormous Scale.
5. Sensing.
6. Heterogeneity.
7. Security.

II. RELATED WORK

In many developing countries human health care is frequently defined as a measure problem that is almost as much as 8% of the population who has access to 20% of the countries medical resources. L. Atzori [1] concept of IOT proposed that the inability to access proper human health care for rural population.

III. PROPOSED METHOD

3.1 Pillars Characteristics of IOT

The following figure shows the system architecture and flow chart. The figure 2. shows the complete architecture of proposed system the system functionality is divided into major 3 modules; they are:

1. Sensing Module
2. The main module
3. Interaction module

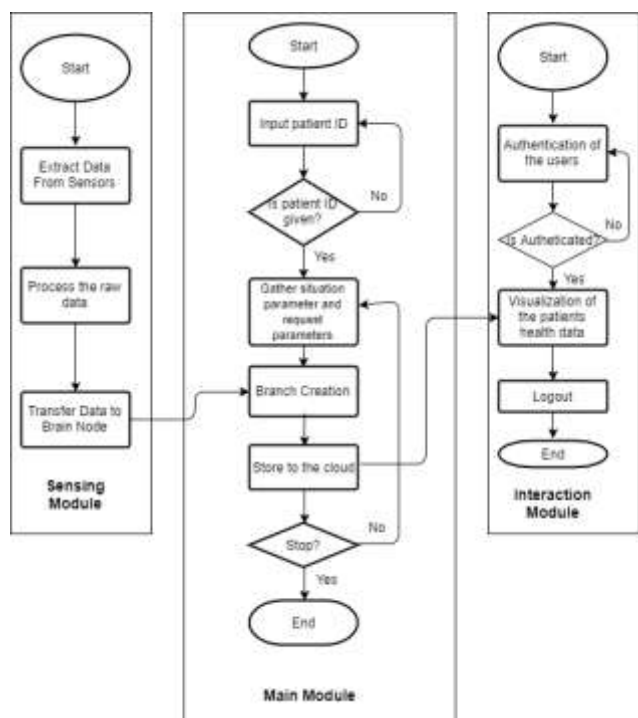


Figure 2: System Flowchart of IOT

Sensing Module

Sensing module consists of some sub-modules called sensor node & brain node. It extracts the data from the sensors & processes it. Then it transfer the data in brain node & it is attached to the branch creation in main module using the Wi-Fi module interfaced to the Arduino. The sensors which are attached to patients body are then interfaced to the Arduino. It stores the value in their flash memory. After sometimes the brain node transmits a set of data to main module.

Main Module

The main module consists of input patient id. It checks the patient id, if it is given then it gather the situation parameter & request parameters. If the patient id is not available then it request for its id. In this, it stores the information on the cloud & the cloud system connects to the interaction module in which it takes the visualisation of the patients health data. This data is distributed in many different branches in branch node. Therefore, the creation of a database is the 1st step in the main module & these branch nodes are collected in database through the internet.

Interaction Module

These module consist of authentication of the users, if the user is not authenticated then the interaction module send

request to main module to fetch the data of patients, if it is authenticated then it visualize the patients' health data. The application requirements are patient's information, the situation parameters is date, time, and location etc. ThingSpeak is an open source IOT application with HTTP API which can store & retrieve data from the 'things' via internet or intranet.

IV. LITERATURE REVIEW



Figure 3: Heartbeat Sensor

HeartBeat Sensor is used to measure the pluse rate of heart in digital output.LED is used to detect th heart rate.The normal heartbeat range is 78bpm.This provides a direct output digital signal.



Figure 4: Temperature Sensor

LM35 sensor is used to measure the temperature of the human body. The LM35-series devices are precision integrated-circuit temperature sensor, with an output voltage linearly proportional to the Centigrade temperature.



Figure 5: Pressure Sensor

The Pressure sensor is used to measure the systolic and the diastolic pressure level using the device. It is measured in millimeter mercury (mmHg). Blood Pressure changes from minute to minute.



Figure 6: WiFi Module

The ESP8266 WiFi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your WiFi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor.

3.3 Advantages of IOT:

- a) Portable system.
- b) Save risk of heart attack as you can check it in home.
- c) Affordable system.
- d) Temperature & heartbeat monitoring by single device.
- e) All patient monitor by single person sitting in server room.
- f) This system also helps for Hospital monitoring system.

3.4 Disadvantages of IOT:

- a) Inaccurate method of calculating heartbeat.
- b) Logic used is very simple. Therefore, results may vary as for a sophisticated instrument for the same purpose.
- c) The privacy in IOT can be lost, as we are using it the data is stored on the cloud and it may be corrupted or it may be hacked by anyone, and the over-reliance on the technology can be increased so it can't be very much efficient for use.

V. Conclusion

In this paper we explored the concept of "IOT" as thus it is becoming the most important part of Internet Routine. As

now-a-days we have increased the risk of heart attacks. This system which helps to detect heart rate of person using heart beat sensing even if person is at home. This system also helps for hospital monitoring system, all patient monitored by single person in server room. This system which helps to measure body temperature, heartbeat, pulses of person. We will make this system for animals so we can save them. If this technology will be developed then we can detect heart blockage through this technology by our project.

VI. References

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