

E - Monitoring of Physical Health Care System using IoT

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Abstract— The Internet of Things (IoT) offers a proficient and innovative life to the healthcare field. It similarly has a fast advancement of altered fields. Become, more recipients are genuine in the field of Medical. One of the improved ways the doctors are able to positively and rapidly appropriate to utilize significant patient data's and including the patient therapeutic history. Through the Internet of Things, hugely improves the nature of information and the patient care in Medical field. In this way, Internet of Things offers a real stage to interconnect the every one of the assessment. Also, create a strategy and reconfigure medical resources according to patient's specific requirement rapidly and repeatedly.

Key words: Internet of Things (IoT), Therapeutic, Resources Optimization, Recovery

I. INTRODUCTION

Now a day, everything in real world has become digitalized and smarter. So in medical field can also be in a smart way by using Internet of Things (IoT). In the modern era internet resources has become widespread and also development of must applications like smart home, smart vehicles and so on [1]. In traditional methods there is lot of overheads like patient's information, history and other records, which consumes more time and resources exploited in the olden days was time consuming. To make a smart health care system, Iot is used. Connecting resources and create the own network by utilized Internet of Things [2]. The recent years have been boon to medical era, so numerous different resources are present hence IoT devices are used in this paper. Most important objective of this system is to interconnecting all medical assets of recovery method. By combines networking technologies that allow a wide-ranging applications, devices or things to cooperate and communicate between themselves.

Internet of Things (IoT) has various types of applications including healthcare and smart home. Main focus of this paper is to provide communicate device to create an Iot network which utilizes the resources, automatically detecting the situation and monitors the patients, where medical interfaces are required. Since the healthcare system gives the information about both the heart pulse rate and body hotness and anybody can monitors the physical status fluently. Moreover this system strengthens for checking change in patients from remote place.

The paper is organized as follows: Section II highlight some of the key related work in this area. In Section III, outline the architecture for remote health monitoring systems based on sensors, partitioning the system into for main components. In Section IV highlight the results of the paper. I, conclude the paper in Section V with conclusion and future scope of work

II. RELATED WORK

Most proposed frameworks for health care system leverage a three tier architecture wireless sensors, network and data storage. Interconnecting with devices using Internet of Things provides a smart way in real world. IoT has emerges in our daily in a smarter way like digital home, hospitals and many more applications , X. M. Shen et. al[2].

This paper the time consuming constraint is overcome, which was used in olden methods by utilizing Internet of things. So connecting devices and various sensors, we can create own network using IoT & it's helpful for all to work together and agreeable way. Recent years, we are facing many challenges in medical field, new gadgets are developed. Each node in the IoT gets data essentially spoken to by the hormones being transmitted and gotten from the surroundings hubs. Toward the start of each curved, a initially checks the estimation of its working eminence enrol) to decide its status toward the begin of the round, K. R. Hao et.al [5].

Medical centres and hospitals obtaining the exact and accurate information about patients, staff and resources has become challenging task. Human beings make mistakes, misuse of assessment management produce overhead problems. To overcome the above issues, we can adopt the real time locating system (RTLs), provides the data of medical records in sorted formatted and resources controlling. This will help the system to managing the information and asset, moreover, in the healthcare system tags could help reduce functioning problems. A nurse could read a patient's tag to learn about his or her medical history and determine the time. A networked RFID reader attached to a hospital bed could also read the tag and, if combined with central patient records, display any recognized allergic reactions for patient. RFID labels could thus abolish various data records errors, drug administration mistakes, and incorrect instructions, which occasionally put patients at risk, R. Want et. Al [9].

III. PROPOSED SYSTEM

The proposed system is based on IoT, where devices are interconnected with each other by creating own network which is useful for centralizing the data in cloud. System Architecture is shown below.

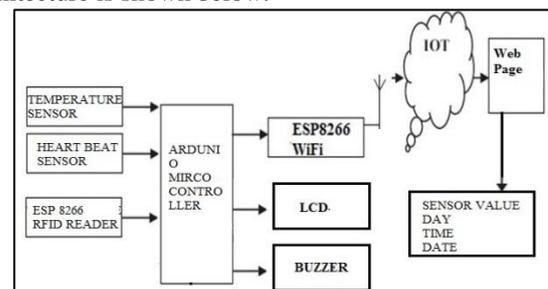


Fig. 1: System Architecture

For the implementation of the proposed system consists of three parts, Figure 1 describes first one is the input where RFID card, LM35 temperature and heartbeat sensor is used. RFID card is utilized to check whether the patient is register or not. Then patient's is access to the healthcare system, where one can check the body temperature and heartbeat rate by using LM35 and heartbeat sensor. Secondly part is processing, which uses Arduino microcontroller. This controller programmed is for synchronized with sensors, Wi-Fi, LCD and cloud. Wi-Fi module is used to communicate with Arduino and cloud. Liquid Crystal Display is required to give the sensor values and alert message on screen. Also buzzer is required to get alert from system. Third part is cloud where the sensor values are displayed on web page & data is stored.

A. ThingsSpeak Cloud

It is open source cloud used by many organizations. Each user can create channel with eight fields by logging into Thingspeak cloud. It is utilized to store the IoT based values which are obtained from proposed system. And achieve data like clockwork to cloud, however most applications function estimably every minute

IV. RESULTS

Experimental results of physical health care monitoring system using IoT, when patients is valid the system allow to access where he/she can check the body temperature and heartbeat rate by particular sensors. If the values are beyond the threshold set in the system then it alert through buzzer.

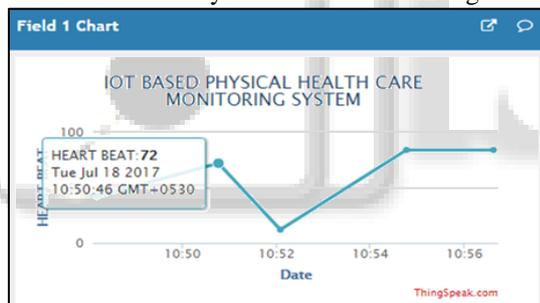


Fig. 2: Screenshot of Heartbeat sensor values

From above figure 2 shows the graph of heartbeat sensor values. It describes the heartbeat rate which is 72 and calculated in beat per minute, also show date and time of particular patient. Different values are shown in above graph for numerous patients & can exports this values in excel sheet from the Thingspeak cloud.

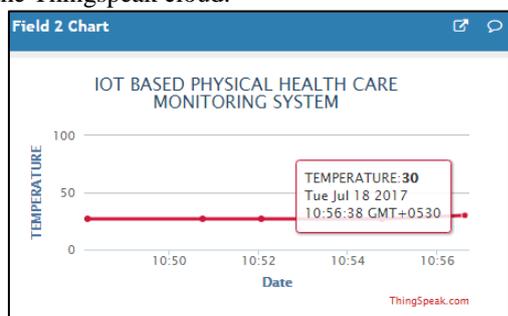


Fig. 3: Screenshot of Temperature sensor values

Figure 3 describes the graph of temperature sensor values. It describes the body temperature of patient is 30 and calculated in Celsius, also show date and time of particular patient. Different values are shown in above graph for

numerous patients & can exports this values in excel sheet from the Thingspeak cloud.

V. CONCLUSION

IoT is the worldwide occurrence of things and objects that are interconnected are proficient to work together to set a common goal. IoT scopes a set of technologies that empower a wide range of things to act together and communicate among themselves using networking knowledge. Physical health care monitor system using IoT technology is both in effective and resourceful for the information sharing. Two important features, including the rapid construction of renewal system and the easy share of knowledge, which should make the system as characteristic and perform excellent, as IoT have played a significant role in the method.

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