A Survey on Smart Healthcare

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Abstract*—The enhanced development in the field of internet of things(IOT),a lot of data will be produced by different devices which are interconnected to the internet. Storing all data produced by this devices are strictly limited in terms of space and energy. These devices are developed to be unrealiable and vulnerable to many threats because these devices are connected over network remotely.In this paper we discuss about data storage,data processing,protecting data storage,retrieval of data efficiently from the storage.Therefore we would develop framework which solves these problems by combining the features of cloud computing and fog computing.The collected data is then processed and stored by the server.Body area network(BAN) uses sensors which will be attached to human body.These sensors are developed to sense and collect the required parameters and send that information to the server. This information can be retrieved efficiently using RFID or NFC technology.This paper discussing about the wearable sensors which formulates the real time data and processing of these data from the server.*

Keywords—Wearable Sensors, Cloud Computing, IoT,Fog Computing,RFID

I. INTRODUCTION

At present wearable sensors are very useful in the field like healthcare,sports,intelligent decision making,military and emergency situations. These sensors will provide exact a realiable data about the activity which was occurred at any point of time. Due to their improved enhanced generation of results lifes of people have made much safer and easier. In the enhanced communication nd technology,the increased growth of smart phones, sensors are connected to the internet remotely or physically have made the lifes of people much easier. The major concern of using alarmbuttons becausethese sensors must be easily worried by the person at any time. By using these sensors we can measure the parameters of human body such has heart rate, pulse rate, body temperature. Due to the usage of these sensors it has reduced the usage of largeequipment which were used to measure the human body parameters along with man force . As the elderly population increases in our country therefore their medical cost is also increasing, this medication can be reduced by using body sensors. These body sensors will be attached to the patient in two ways: the sensor can be attached inside the patients body or these sensors can used as a wearable devices. These body sensors sense the parameters such as body temperature, pulserate, heart rate and these values will be stored in the server, then the authorized doctor can monitor these values remotely by using unique ID's which are given to every patient. Therefore every patient need not admit in the hospital for their treatment and increase their medical treatment costs. The unique ID's may be either RFID or NFC tags . As the different types of sensors are attached to the patients body and each patient will be given unique RFID tag ,these sensors will processes the required information by sensing the human body and store the data in the server .these data can be accessed by the doctor by entering the specific patients RFID number in the device which connected to the Bluetooth .Then the required patients details information will be displayed on the screen ,based on the values displayed on the screen the doctor will prescribe the medication for the patient. The major advantage of this approach is doctor can monitor patients details in a specific of period of time with all the values of patients body parameters which are recorded for every minute, this updated results are stored in the server. If any values crosses the normal range then the notification message will be sent to the doctor through android phone application. Separate databases for patients and doctors are created to access the information which allows two way communication. This improves the technology in healthcare industry in efficient data processing and storage of data.

II. LITERATURE REVIEW

In paper [1] proposed based on the RFID it is a wearable device which give an information about surrounding area where the patient stay such as about temperature. This will help to monitor a patient inside the room or any remote area. This RFID collects the data and store.

In paper [2] proposed based on health trends provides best service and serve patient. Any hospital or healthcare center, organization is based on trends. This paper also tells about how networks could be diagnoses and supports the chronic diseases or any medical issue or any emergency .All diagnosis in the fig1.will store data or keep health record and deliver the health service.

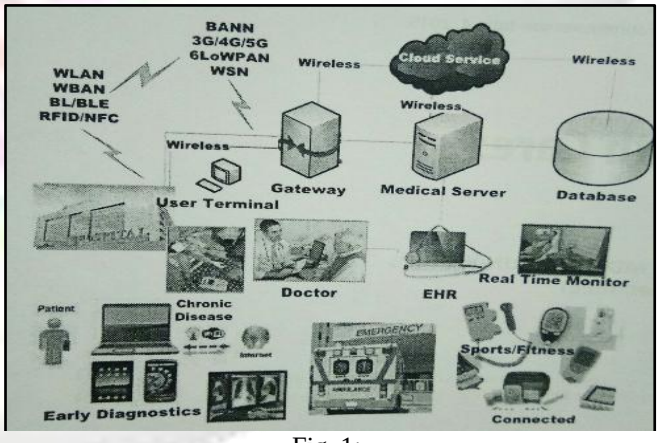

Fig. 1:

In paper [3] proposed electronic health services based on RFID and it is controlled by IOT. RFID is a mode of point to point communication. This device helps to benefit both patient and doctor to monitor the patient. It also maintain the privacy and security of a patient information. Through the card facility the doctor can scan the scan the card to get the details on that particular patient.

In this paper [4] proposed about android base elderly on support system old parents will not be taken care for 24/7. By this paper we can track elders which location or

at home on which condition the patient by a cell phone and APP based project. Takes a heartbeat measurement with in the age 41 to 68 with the different session.so this will give a correct heartbeat value of a patient

In this paper [5] based on android application to display current location of a patient and where is the patient and what is the time to reach. This will help to monitor the patient where ever the location. This helps to find the location and also monitor the patient that they are safe are not. If not safe immediate message will be sent

In this paper [6] proposed about the body area network this is used as a wireless sensor on a human body. This accepted in different areas such as medical, military, entertainment etc. This develop and produce the sensor monitors and analyze activity and action.

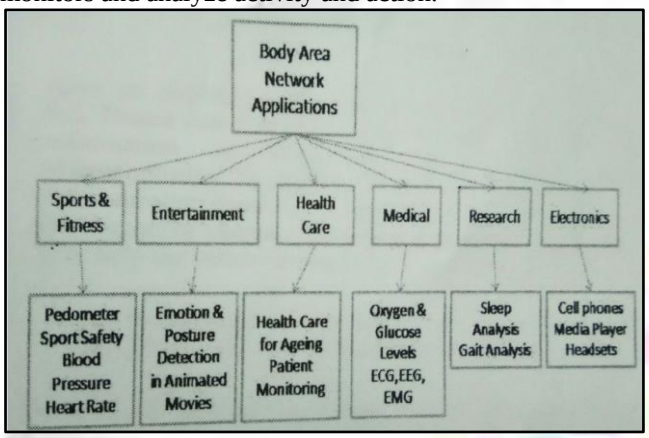

Fig. 2:

In paper [5] propose about remote diagnosis it is mainly based upon smartphone, data service, and diagnosis for short and also long distances. It gives a service bases on 3G wireless communication to ECG data between the smart phone and data services location in hospital or any service center. Online service is a bridge between patient and physicians.

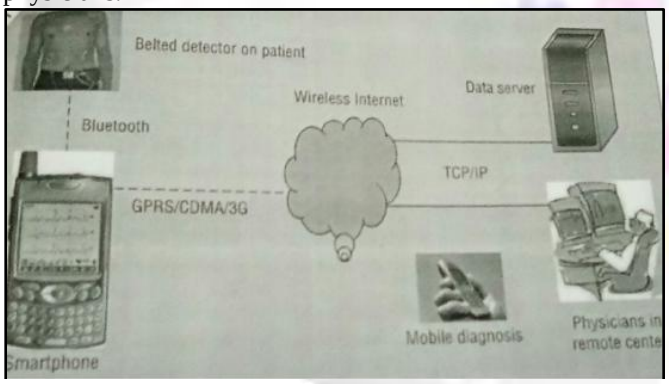

Fig. 3:

In paper [7]Near Field Communication (NFC) as a provides short range wireless communication technology facilitates mobile phone usage of people throughout the world Eventually NFC technology integrates all such services into one single mobile phone. On the bases business case options, there will be an increasing amount of work to be studied in the very close future. This paper presents the concept of NFC technology in a holistic approach. Open research areas and further recommended studies in terms of academic and business point and also on health care condition. And help for communication it can easily use by common people.

In paper [8] proposes Smartcards for the storage of medical information. The major problems are that cards have is that limited memory due to this there may be a loss of data. This basically focuses on the requirements for a smartcard that will be as a personal health node, and store the data foe the doctor use and also patient use. This approach allows interaction with multiple health provider data sharing and in case of emergency. Store data and retrieve to the people who ever using the RFID so that data can be retrieve and update data.

In paper [9] proposes smart health monitoring .monitoring health status of patient for 24 hours based on temperature, BP, ECG Pulse rate.In transport layer send the information to cloud i.e. think speaker. By this anywhere or any planet patient can be access with the help of WIFI module and Adriuno Uno.

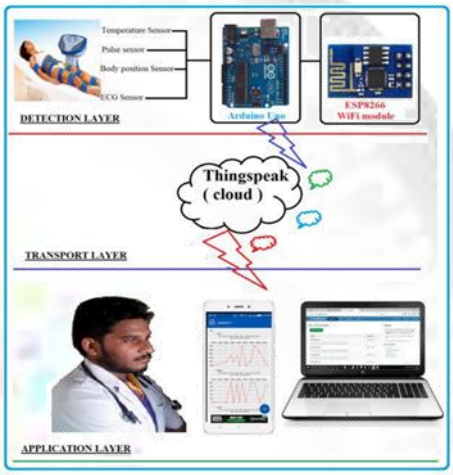

Fig. 4:

III. CONCLUSION

This paper research study on the bases of health care condition and different ways to monitor the patient more secure and flexible main challenge based on data collection and data storage. Many storages that is NFC,RFID Think spekar,cloud etc. All this depends. On monitoring of the patient. Continually monitor patient avoid getting unhealthier. Device of the software or devices sense the data and process automatically to store data. This research based on exploring various technology solution to enhance health care based on the domain IOT.

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