Patient Health Management System using E-Health Monitoring Architecture using WSN

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Abstract: Healthcare is the most important concern of many countries in the world. Improving the lives of patients especially in the weaker parts of the society which include the elderly, physically and mentally disabled as well as the chronically ill patients is the major factor to be improved. E-Health systems depending on modern technology play a vital role in eradicating the problems and faster curing of the patients. Also, lot of advancement has been done in order to improve the systems in various terms of size, speed mobility and faster communication in emergency situations. New health monitoring systems have proved to be of great help to the healthcare of the patients. But the major constraint of this system is that patients are supposed to be bed fitted and kept in the smart rooms and are immobile. The proposed system uses mobile devices and wireless sensor networks for real time monitoring and analysis of the patient's health parameters and in return provide medication. It is easy for doctors and the caregivers to immediately act in emergency cases, and also to provide medication depending on the health parameters without the physical presence of the doctors. The system is such that, remote monitoring of patients can be done by diagnosis of the patients with the help of the environmental and medical sensors. The sensor monitors the health of patients and in real time and the collected data is sent to server. This data is received by the doctors and caregivers through server which is analyzed by the doctors. The server helps to store the data, medical history of the patient for future use. The system architecture is such that the patients can be monitored and treated privately at home. This system also helps in handling multiple patients at a time in the hospitals as well as the public health care units and we can see the analysis in graph on the basis of sensor reading history.

Index Terms: IoT, e-Health, m-Health, Body Sensor, Communication Architecture, Continuous assessment.

1. INDRODUCTION

Healthcare is the most important concern of many countries in the world. Improving the lives of patients especially in the weaker parts of the society which include the elderly, physically and mentally disabled as well as the chronically ill patients is the major factor to be improved. E-Health systems depending on modern technology play a vital role in eradicating the problems and faster curing of the patients. Also, lot of advancement has been done in order to improve the systems in various terms of size, speed mobility and faster communication in emergency situations. New health monitoring systems have proved to be of great help to the healthcare of the patients. But the major constraint of this system is that patients are supposed to be bed fitted and kept in the smart rooms and are immobile. It is easy for doctors and the caregivers to immediately act in emergency cases, and also to provide medication depending on the health parameters without the physical presence of the doctors.

2. LITERATURE SURVEY

I. Patient Health Management System using e-Health Monitoring Architecture.
This paper illustrates the design and implementation of an e-health monitoring networked system. The architecture for this system is based on smart devices and wireless sensor networks for real time analysis of various parameters of patients.

II. Fault Tolerant and Scalable IoT-based Architecture for Health Monitoring.
A novel Internet of Things based architecture supporting scalability and fault tolerance for healthcare is presented in this paper.

III. Continuous Health Condition Monitoring by 24x7 Sensing and Transmission of Physiological data over 5-G Cellular Channels.
A novel architecture tested exclusively for instantaneous sensing and 24x7 transmitting important physiological signals over cellular networks has been introduced in this paper.

IV. Integration Of Wearable Devices In A Wireless Sensor Network For An E-Health Application
Applications based on Wireless Sensor Networks for Internet of Things scenarios are on the rise. The multiple possibilities they offer have spread towards previously hard to imagine fields, like e-health or human physiological monitoring.

V. A Health-IoT Platform Based on the Integration of Intelligent Packaging, Unobtrusive Bio-Sensor, and Intelligent Medicine Box.

In-home healthcare military based on the Internet-of-Things (IoT) have great business prospective; however, a comprehensive platform is still missing. In this paper, an intelligent home-based proposal, the iHome Health-IoT, is future and implemented.

VI. Energy-Efficient Remote Healthcare Monitoring Using Iot: A Review Of Trends And Challenges.

The growing of Internet and technologies such as Wireless Sensor Network (WSN) has created another stage of Wireless Body Area Network (WBAN) and also an ever growing new area of Internet of Thing (IoT).

VII. Use of Internet of Things (IoT) in Healthcare : A Survey.

In today's world of connectivity, with the advancement of Internet of Things (IoT) all entities are connected to each other by some communication means. The Internet of Things for the medical equipment will produce data that can go a long way in not only increasing equipment efficiency, but also patient health.

VIII. Optimize databases for health monitoring systems.

In this paper, we will study and describe the methods which could be used for optimizing the database and achieving the best performances.

IX. A Mobile Core-Body Temperature Monitoring System on Android.

Recently, Google launched the Android mobile operating system and several mobile devices already support it. This paper proposes a cellular phone Android-enabled tool for collect, monitoring, and analyzing intra-vaginal high temperature.

X. Health Monitoring and Management Using Internet-of-Things (IoT) Sensing with Cloud-based Processing: Opportunities and Challenges.

Among the panoply of applications enabled by the Internet of Things (IoT), smart and connected health care is a particularly important one. Networked sensors, either worn on the body or embedded in our living environments, make possible the gathering of rich information indicative of our physical and mental health.

3. CONCLUSION

So we conclude that, This system uses mobile devices and wireless sensor networks for real time monitoring and analysis of the patient's health parameters and in return provide medication. It is easy for doctors and the caregivers to immediately act in emergency cases, and also to provide medication depending on the health parameters without the physical presence of the doctors with Patients real time and historical Details. Provide emergency SMS on stored contact details of the Patient.

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