Cloud Based Intelligent System for Delivering Health Care System

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Abstract

The value of healthcare is increasing throughout the world. Without disruptive changes, a great section of the population in many developed states will no longer be able to pay for upkeep of health by 2040. A Part of the solution will come from concentrating on prevention. Having personal tools at everyone's distributes which will aid people to monitor their health and to change their reactions can enable disease prevention. Control of human weight and managing stress are two social relational challenges where a behavioral change can have huge value of savings. The problem under study consists of improvement in health care system using cloud. I passionately dedicated to help medical fraternity to find health status of vital organs of the patient's body at early stage that support effective treatment by introducing innovative and high quality hand carried noninvasive health care systems and devices. Cloud based Health Care is the integration of cloud computing and health monitoring. The computing device enables the delivery of accurate medical information anytime anywhere by means of internet. Cloud based healthcare system consists of a computing device and number of sensors mounted on patient's body. In this project I present a Cloud based Intelligent Healthcare Monitoring System (CIHMS), which can provide medical feedback/assistance to the patient through cloud (if data already available) or hospital. The suitable sensor is/are to be used to obtain adequate data related to patient's disease.

1. Introduction

Many primary health care clinics located in the rural areas do not have any electronic systems at all & continue to operate paper- based systems, resulting in patient records being kept by patients themselves. The impact of the use of multiple systems is that it is difficult and costly to develop a national overview of patient statistics. On a more basic level, it is extremely difficult for individual institutions within the healthcare sector to share information between each other. With options available to government to improve the efficiency& effectiveness of its delivery process of primary health care, mobile & wireless technologies offer some exciting opportunities for a low cost, high reach service. There is strong evidence that mobile technologies could be instrumental in addressing slow response rates of existing system for rural areas. The paper proposes an approach where the health status of a patient is retrieved and delivers health-promoting messages in a non-interruptive fashion through a wireless body-area network; they can communicate with medical services. However, a multidisciplinary endeavor such as cloud is required to achieve their potentials for healthcare system that lead to the emergence of a new type of advanced service for healthcare.

2. Existing System

The rising cost of in-bed hospitalization and the fresh technological advances in low-power integrated circuit sensors coupled with the introduction of resourceful power protocols such as Bluetooth and GPRS has attracted

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researchers to study the establishment and usage of wireless networks as a vehicle for transmitting patients' related information without the need to confine them to a foundation Wireless based non-confining monitoring systems improve the quality of life for the patients while helping as a cost effective solution to the problem of health care monitoring that is collapsed with the raise in the population elderly
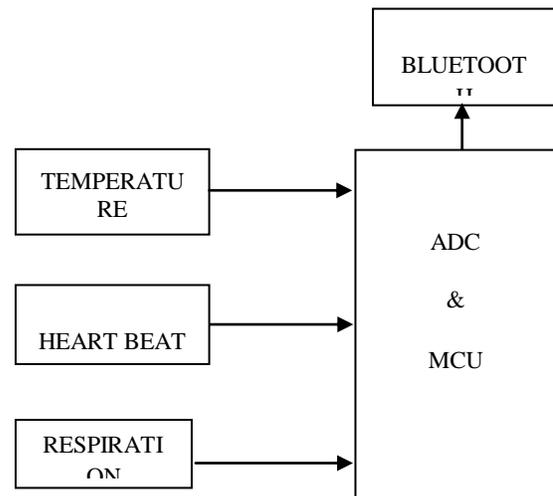

Fig: 1. Block Diagram of Existing System

The proposed system is a location-based mobile health care system (LMHCS) is to help out hospitals and doctors to monitor their respiration and heartbeat of patients. In the emergency situation, this proposed system can smooth the

progress of heart beat and respiration of patients to locate the nearest healthcare points (HP).

LMHCS consists of three main subsystems:
1) A monitoring system for the heart beat and respiration of patient
2) A system to track the location of the heart beat and respiration of patients in emergency situations.
3) Monitoring and guide them to the nearest hospital for Emergency Medical Services (EMS).

This involves Bluetooth enabled wireless network of various body parameter sensors [e.g. respiration, electrocardiogram (Heart Beat Rate) and temperature] that can communicate with the mobile device (cellular phone or PDA). The heart beat rate is from Bluetooth-compliant
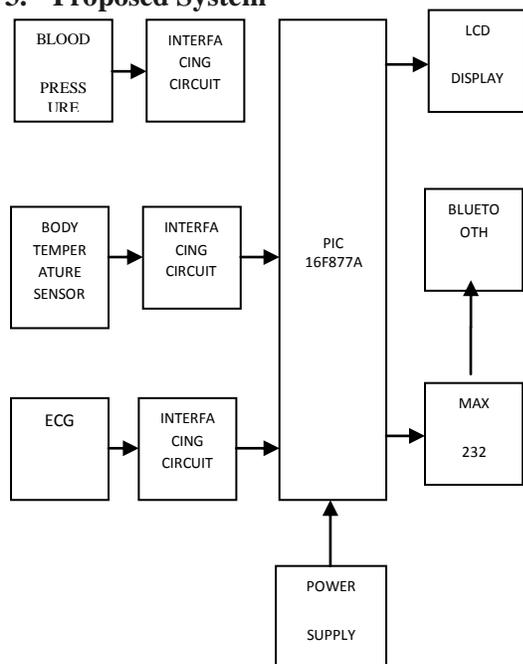
3. Proposed System
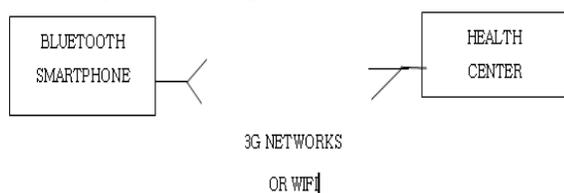

Fig: 2. Block Diagram of Transmitter Block

Fig: 2.2: Block Diagram of Receiver Block

4. Description of proposed system

The patient is provided with wearable sensors. The signal from the sensor is captured in a Node called sink through which data will be forwarded to cloud via Wi-Fi or Bluetooth where the data is stored for further processing or future reference. The data is then forwarded to CIllMS's physician via phone/PDA (CIHMS system). The CIHMS system allows ubiquitous access to patient's data and medical information in real-time. The medical data is stored & processed in CIHMS's server where database about different patient's health conditions will be maintained, and can be used for establishing diagnostics and treatments.

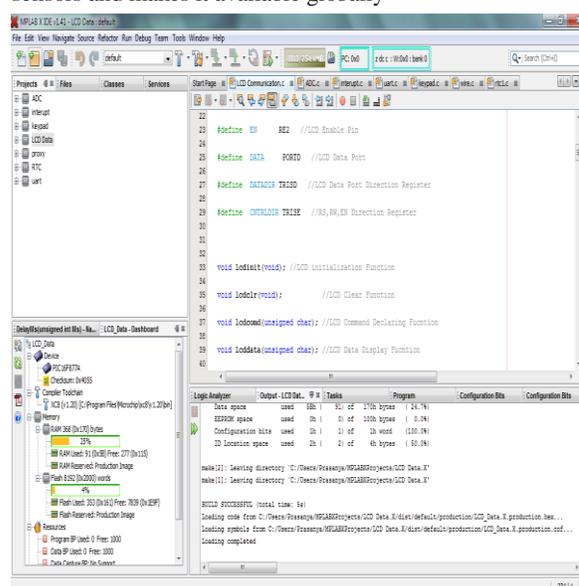CIHMS server centralizes the received data from body sensors and makes it available globally

Fig: 3. Simulation output of Cloud system using MPLAB

5. Conclusion

This paper discusses the simulation of primary health care system on intranet. It also discussed the multidisciplinary endeavor such as cloud for healthcare systems that provides greater benefits for patients and hospitals. In this paper introduces a novel cloud computing model that can efficiently compute the data from healthcare devices and dynamically diagnose the disease also, an intelligent way of saving only crucial data. The cloud based health care system using bio-sensor network places forward some future works such as finding the most effective mechanism for ensuring security for the data.

6. References

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