Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies

Abstract:

Health monitoring systems have rapidly evolved recently, and smart systems have been proposed to monitor patient current health conditions. In our proposed and implemented system, we focus on monitoring the patient’s blood pressure, and his body temperature. Based on last decade statistics of medical records, death rates due to hypertensive heart disease, shows that the blood pressure is a crucial risk factor for atherosclerosis and ischemic heart diseases; thus, preventive measures should be taken against high blood pressure which provide the ability to track, trace and save patient’s life at appropriate time is an essential need for mankind. The objective of this work is providing an effective application for Real Time Health Monitoring and Tracking. The system will track, trace, monitor patients and facilitate taking care of their health; so efficient medical services could be provided at appropriate time.

Existing system:

Existing system can monitor heart rate, blood sugar levels, human’s body temperature, and by using a wireless communication technologies to synchronize and display these information into a smart mobile phone or a standard computer. Such device gather data from user and display some related graphs in order to
encourage users to remain aware of their health conditions by providing a week to week feedback.

**Disadvantage:**
- It achieves wireless technology with limited options of connecting to particular users only.
- It may not work, if the wireless infrastructure of the system gets changed.

**Block Diagram:**

![Block Diagram](image-url)
Proposed system:
The proposed system consists of an end-to-end smart health application that can be building up from two functional building blocks. Main function of the first building block is to gather all sensory data that are related to the monitored persons, whereas the second block functions are to store, process and present the resulted information of this stage to the doctors. The function working is illustrated as, when the patient’s heartbeat rate changes badly, the Arduino which recorded Pulse and Arduino Temperature Sensors readings, orders GSM shield to send an SMS message containing these readings, patient ID and the location of the patient which has been taken via GPS shield, to his doctor’s mobile phone, who -by his turn- send an ambulance to the patient’s location.

Advantages:

- Multi-uses and services by making some modification on the software, many diseases and illnesses like Alzheimer, mental and motion patients could be benefited from this system.
- Accurate in scanning, clear in monitoring, intelligent in decision making and reliable in communications are achievable.
Conclusion:

Aim of Smart City concepts is to provide better life to society and provide innovative and creative solutions in each of the eight pillars of smart city. Healthcare field is one of most delicate and important fields to be developed and enhanced by Smart systems designed to present sustainable medical interventions at manner time where the smart system should be simple, low energy consumption and real time feedback.

Reference:


