

Health Monitoring Using Database Management System

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Abstract-The method of monitoring patients in hospitals keeps patients tied to their beds and this may be uncomfortable for the patients. The number of nurses in the workforce can be reduced, and excess pressure that can lead to unfortunate accidents happening to patients can be avoided. The goal of the project is to produce a wireless patient monitoring system that could allow patients to be mobile in their environment. This system includes a pulse oximeter to measure blood oxygen concentration and the patient's pulse, as well as a temperature sensor to keep track of the patient's temperature.

Keywords-character recognition, character segmentation, Number plate detection, Toll collection, Vehicle number recognition.

I. INTRODUCTION

A database is a collection of related data, which are organized to extract. The effectiveness of databases derives from the fact that from one single, comprehensive database much of the information relevant to a variety of organizational purposes may be obtained. In health care the same database may be used by medical personnel for patient care recording, for surveillance of patient status, and for treatment advice; it may be used by researchers in assessing the effectiveness of drugs and clinical procedures; and it can be used by administrative personnel in cost accounting and by management for the planning of service facilities. The fact that data are shared promotes consistency of information for decision-making and reduces duplicate data collection. A major benefit of databases in health care is due to the application of the information to the management of services and the allocation of resources needed for those services, but communication through the shared information among health care providers, and the validation of medical care hypotheses from observations on patients are also significant. The contents and the description of a database has to be carefully managed in order to provide for this wide range of services, so that some degree of formal data management is implied when we speak of databases.

II. LITERATURE SURVY

A Survey on Futuristic Health Care System: WBANs

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With the increasing use of wireless networks and miniaturization of electronic Devices has allowed the realization of Wireless Body Area Networks (WBANs). It is one of the latest technologies in health care diagnosis and management. WBAN consists of various intelligent bio sensors attached on or implanted in the body like under the skin. These sensors offer promising applications in areas such as real time health monitoring, interactive gaming and consumer electronics. WBAN does not compel the patient to stay in the hospital thereby giving much physical mobility. This paper presents an overview on the various aspects of WBAN.

Health Monitoring and Management Using Internet-of-Things (IoT)

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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. Captured on a continual basis, aggregated, and effectively mined, such information can bring about a positive transformative change in the health care landscape. In particular, the availability of data at hitherto unimagined scales and temporal longitudes coupled with a new generation of intelligent processing algorithms can: (a) facilitate an evolution in the practice of medicine, from the current post facto diagnose-and-treat reactive paradigm, to a proactive framework for prognosis of diseases at an incipient stage, coupled with prevention, cure, and overall management of health instead of disease, (b) enable personalization of treatment and management options targeted particularly to the specific circumstances and needs of the individual, and (c) help reduce the cost of health care while simultaneously improving outcomes. In this paper, we highlight the

opportunities and challenges for IoT in realizing this vision of the future of health care.

III. EXISTING SYSTEM

The current state and projected future directions for integration of remote health monitoring technologies into the clinical practice of medicine. Wearable sensors, particularly those equipped with IoT intelligence, offer attractive options for enabling observation and recording of data in home and work environments, over much longer durations than are currently done at office and laboratory visits. This treasure trove of data, when analyzed and presented to physicians in easy-to-assimilate visualizations has the potential for radically improving healthcare and reducing costs. We highlighted several of the challenges in sensing, analytics, and visualization that need to be addressed before systems can be designed for seamless integration into clinical practice.

IV. PROPOSED SYSTEM

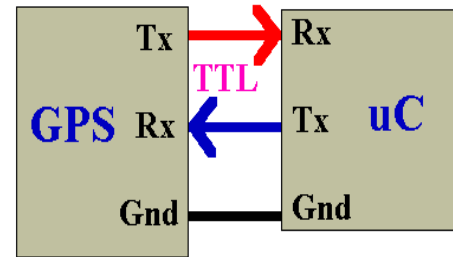
The goal of the project is to produce a wireless patient monitoring system that could allow patients to be mobile in their environment. The developed system includes a pulse oximeter to measure blood oxygen concentration and the patient's pulse, as well as a temperature sensor to keep track of the patient's temperature. The proof of concept was successful, and allowed for multiple patients at the same time on the same network with the ability to add many more patients.

MODULES:

a) MICROCONTROLLER WITH UART OUTPUT MODULE:

UART stands for Universal Asynchronous Receiver / Transmitter. It is a very popular serial communication interface which provides Full Duplex communication between two devices. UART uses two data lines for sending (TX) and receiving (RX) data. Ground/Reference of both devices should be made common. As the name indicates it is an asynchronous communication interface, which means that it doesn't need to send CLOCK along with data as in synchronous communications. UART is the communication interface used by our old computer's RS-232 port.

UART Communication

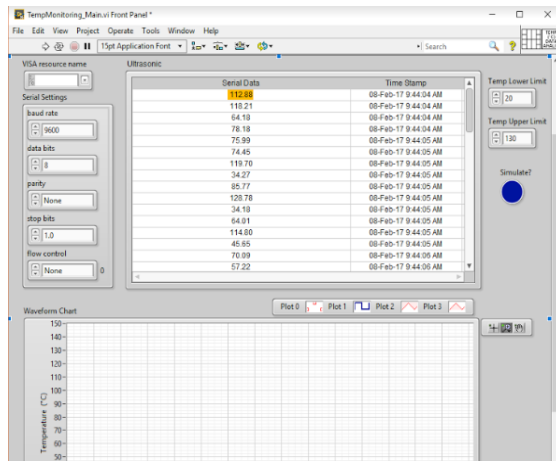


b) DATA ACQUISITION:

Data acquisition (DAQ) is the process of measuring an electrical or physical phenomenon such as voltage, current, temperature, pressure, or sound with a computer. A DAQ system consists of sensors, DAQ measurement hardware, and a computer with programmable software. Compared to traditional measurement systems, PC-based DAQ systems exploit the processing power, productivity, display, and connectivity capabilities of industry-standard computers providing a more powerful, flexible, and cost-effective measurement solution. The measurement of a physical phenomenon, such as the temperature of a room, the intensity of a light source, or the force applied to an object, begins with a sensor. A sensor, also called a transducer, converts a physical phenomenon into a measurable electrical signal. Depending on the type of sensor, its electrical output can be a voltage, current, resistance, or another electrical attribute that varies over time. Some sensors may require additional components and circuitry to properly produce a signal that can accurately and safely be read by a DAQ device.

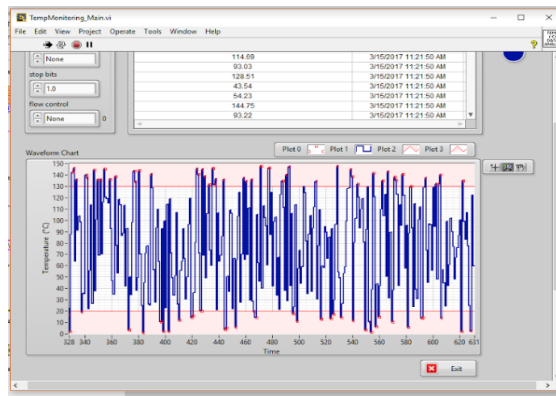
c) CALIBRATION:

The present temperature and humidity status can be viewed by clicking the "Acquire" Button on the main screen. A dialog box pops up immediately after the button is clicked which asks the user to enter a file name and choose a location for the creation of a data log file with a DAT extension. The user may see the temperature and humidity values with names of their specific areas configured in the form of plot names. These values are available both numerically and graphically along with time stamp. "Start logging" button has to be clicked whenever the user wants to start the logging operation. Whenever these values cross the specified limits, a red alert message pops up either for temperature or humidity and it can be seen which particular area it is. Moreover, the buzzer also rings when the limits are crossed to alert the user properly.



d) GRAPH GENERATION:

The data log created previously is available for subsequent analysis. The “Analysis” button when clicked from the main screen prompts the user to enter a file name that he would like to analyze. This function shows a plot of the values recorded previously with the start time/date and stop time/date. These values depicted in the graph can also be seen on Microsoft Excel by exporting them.



V. FUTURE ASPECTS

The parameters that increases temperature can be added and other features available in the algorithm can be used for adding extra modules in it, also the software provided are enhanced based on the evolutions.

VI. CONCLUSION

Thus the “**Database Management For Patient Record**” aims to predict the chances of health issues by monitoring the temperature and the pulse of the patient in the regular interval of time.

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