Data Collection of Patient Using Wireless Device

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Abstract- *The today's hospitals are big and covering large areas in a building. They may occupy no. of floors in one building. Different wards are situated at different places such as men's ward, women's ward, maternity ward, general ward, special rooms and more importantly ICU's. Doctors need to keep monitoring all the patients in these wards continuously, and this requires more number of skilled nurses and other concerned employees. Its not feasible for the doctors to go to each ward and monitor each patient frequently says after each half an hour. Keeping all these aspects in the mind we have developed "Data Collection of Patient Using Wireless Device" which can be used efficiently to get rid of the problems mentioned above. In this system we are continuously monitoring the patient's different parameters such as body temperature and transmitting this data to the doctor's cabin continuously. Such sensors can be used for each patient and the related data can be transmitted to the doctor's Tablet PC.*

Keywords- Adaptive, heterogeneous networks, neural networks, reinforcement learning, video transmission control.

I. INTRODUCTION

We have developed "MEDICAL DATA TRANSMISSION SYSTEM" which can be used efficiently to get rid of the problems mentioned in above abstract. In this system we are continuously monitoring the patient's different parameters such as body temperature and transmitting this data to the doctor's cabin continuously. Such sensors can be used for each patient and the related data can be transmitted to the doctor's cabin in this project we have to monitor patients parameter like temperature, heartbeat, weight by using sensors.

II. LITERATURE REVIEW

Now a day there is big problem of nursing in hospital. Hospital can not provide Individual nurse to each patient. There are literatures found out that timeliness and accuracy of vital signs record is important for patient's treatment. In order to increase production efficiency on the competitive medical industry, management of human cost and resource are very important. Especially, now the nursing shortage is a fact and hence how to simplify nursing workflow to reduce the impact of medical services quality caused by nursing shortage is the main topic for medical institutions. The

data statistical results show the frequency of daily nursing activities for each patient in wards, the first place is temperature, pulse, and respiration measurement and the second place is blood pressure measurement. Moreover, there are literatures found out that timeliness and accuracy of vital signs record is important for patient's treatment .However, in general the way to record vital signs data is recording vital signs data on the paper by handwritten, and then transcribed these vital signs data to an information system by typing on a computer.

III. BLOCK DIAGRAM

Video is the input to the system which is input to Video acquisition Video Acquisition and Video Encoder then convert that video from analog to digital video format Video Encoder then gives the output in the form of packet
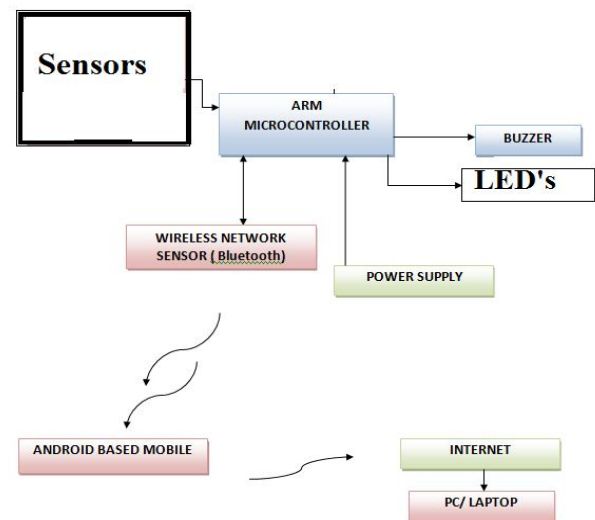

Fig-block diagram of data collection of patient monitoring system

The master card consists of Micro controller, RF/ Bluetooth cards, and LCD etc. The Bluetooth INTERFACE is used for wireless communication between patient card and android phone. The Bluetooth card receives the data from the tablet pc and sends it to the micro controller. The Max 232 is used to provide interface between patient card and PC if necessary. The LCD is used to display the various parameters of patient's body such as temperature, sugar etc. and their current value read by the micro controller

POWER SUPPLY-

When working with electronics, you always need one basic thing: Power. In every electronic circuit power supply is required. The proper working of each and every component, the exact amount of voltage and current to be supplied to it. If the power exceed its limit, it can be fatal. Below is the circuit diagram of power supply which gives output of 5V, as only that much is required for microcontroller.

SENSORS-

1. digital heart beat sensor
2. Temperature sensors lm35
3. vibration sensor,
4. plus rate sensor

BLUTOOTH-

HC-05-module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup. Serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Blue core 04-External single chip Bluetooth system with CMOS technology and with AFH (Adaptive Frequency Hopping Feature). It has the footprint as small as 12.7mmx27mm. Hope it will simplify your overall

Design / Development cycle:

LPC 2148-The LPC 2138 microcontrollers are based on a 32/16 bit ARM7TDMI-S CPU with real-time emulation and embedded trace support, that combines the microcontroller with 32 kB, 64 kB, 128 kB, 256 kB and 512 kB of embedded high speed Flash memory. Due to their tiny size and low power consumption, these microcontrollers are ideal for applications where miniaturization is a key requirement, such as access control and point-of-sale. With a wide range of serial communications interfaces and on-chip SRAM options of 8/16/32 kB, they are very well suited for communication gateways and protocol converters power. Various 32-bit timers, single or dual 10-bit 8 channel ADC(s), 10-bit DAC, Software:

HARDWARE REQUIREMENT-

1. ARM platform
2. Sensors
3. BLUETOOTH Module
4. BUZZER
5. LED's

6. Android Smartphone

SOFTWARE REQUIREMENT-

1. KEIL (ARM)-PROGRAAMING
2. PROTEUS- Circuit Simulation
3. EAGLE- Layout Designing

ADVANTAGES-

1. Easy to monitor patient Health.
2. Fast and real time system
3. Increase the efficiency of data collection

APPLICATION-

1. Widely used in hospitals
2. Used for monitor the multiple patient parameters
3. For data collection of multiple patients
4. In large industries to monitor the parameters of the different processes or instruments , Such as boiler parameters, furnace temperature etc.

IV. CONCLUSION

We used the Tablet PC and wireless measuring devices to build a vital signs data collection and information system. This system has been used in hospital for a pilot trial. Results show the system can reduce the time of data transcription and eliminate the error cause by handwritten on paper, and let clinicians and nurses can real-time access vital sign record. Therefore, the quality of patients' care can be increased indirectly.

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