PATIENT MONITORING AND ALERTING SYSTEM BY USING GSM

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Abstract - *In medical field, electronics industry gaining to develop medical equipment at very high advanced level techniques, they use electronics system every time for patient caring. Patient monitoring system can be defined as the system used for monitoring physiological signals that includes the parameters like electro-cardio graph (ECG), respiratory signals, invasive and noninvasive blood pressure, body temperature, gases related parameters, etc. So, we also try to developer medical field and provide another patient caring facility to medical service for patient monitoring. As per requirement of medical field we try to complete the requirement. As per requirement of* **medical field we design this "pa***tient monitoring & alerting system by using GSM". In this project we design the services for collecting data of the patients parameter like temperature heart beat and the glucose level in the saline bottle we uses total three sensor like temperature sensor (thermistor), LDR, Heart beat sensor(IR sensor) this sensor are sense the data. By using this sensor we can find the temperature of patient, heart beat rate as well as the glucose level in the bottle.*

Key Words: Microcontroller, Heart beat sensor, GSM Model, and Glucose sensor etc

1. INTRODUCTION

Recently, the health care sensors playing a vital role in medical field. The patient monitoring systems is one of the major improvements because of its advanced technology. So we are here, just connecting the temperature sensor and heartbeat sensor so that simultaneously we can monitor the patients condition and hence ruling out the use of the thermometer and other devices to check the condition of the patient. This project alert to Doctors/Nurse as well as patients relatives for take care of patient in the hospital also give the information about patient health and continuously alerting for the time to time providing the medicine to patient. There is another facility for the patient that is when patient want to any help or not feeling well that time there is one push button patient just pushing this button then automatically message is going to nurse as well as patients relative.

2. PROPOSED WORK

The Figure-1 shows proposed work of Patient Monitoring & Alerting System with GSM. Microcontroller play very important role in this project that will measure parameters of patients by using different types of sensors like Thermistor, LDR, Heart beat sensor.
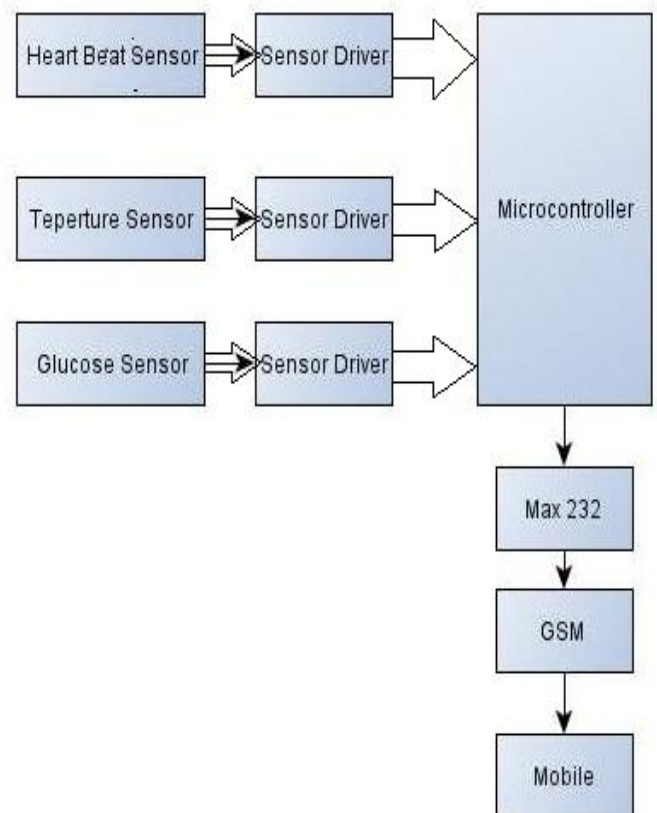

Fig -1: Block Diagram of Patient Monitoring & Alerting System using GSM

This project describes the design of a simple, microcontroller based heart beat rate & body temperature measuring device with display the information on LCD display. Heart rate of the subject/body is measured from the index finger using IRD (Infra Red Device) sensors. Also Saline Level is measured continuously for different levels. The device alarms when the heart beat & the body temperature exceed the provided threshold value. This threshold value is defined by the programmer at the time of programming of microcontroller. The threshold value is as 20 to 120 pulses per minute for heart beat indication & 18°C to 38°C for temperature. This information i.e. the

Heart Rate & the Body Temperature and saline level is then transmitted wirelessly to the doctor which is not in the vicinity of the patient through GSM technique. The sensors sense the information (All parameter of patient) and transmit it through GSM Modem on the same frequency as on which cell phones work.

3. WORKING OF PROJECT
Figure -2 shows the hardware of this project.

Fig -2: Hardware of Project

Figure -3 shows the component mounted PCB of project. In Glucose bottle IR Sensor is placed at mouth side of bottle. This gives the idea about the completion of glucose of bottle.

All data sensed by sensor which display on the LCD Display and also transmitted on the mobile of Doctors/Nurse of hospital through GSM module. All data or information sensed by sensor which is transmitted through GSM module on the mobile of Doctors. Because of that If any critical conditions happened with patient then doctors immediately provides the help to patient. Also, this is information displayed on LCD display, so parent continuously monitor this information. In this system Microcontroller & GSM system play very important role.
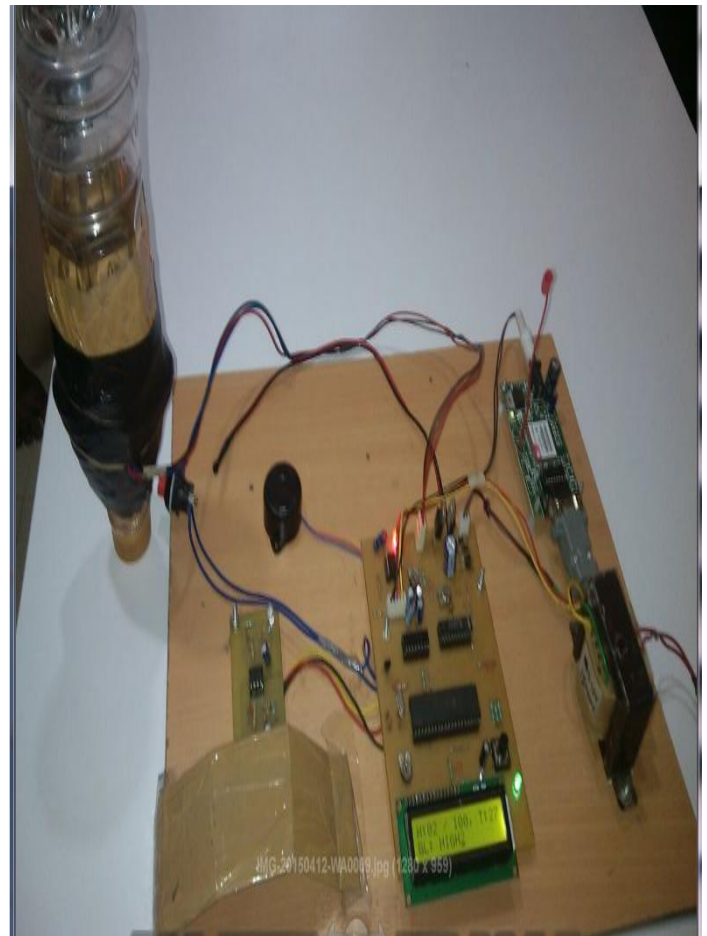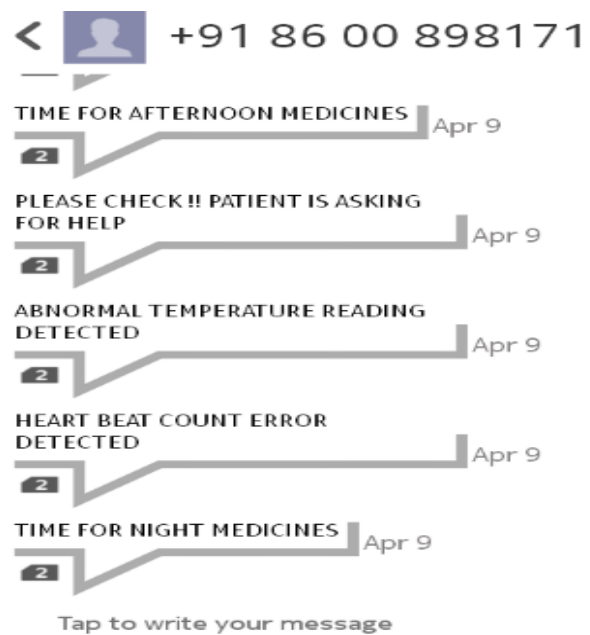

Fig -3: Complete Hardware of Project

Fig -4: Message transmitted on mobile of Doctor/Nurse.

Fig -5: Message transmitted on mobile of Doctor/Nurse.

Figure -4 & Figure -5 shows the mobile screen on which information send by GSM. That provides information to the Doctor/Nurse about Temperature of patient, Glucose level in the bottle, Heart beat count & Time of Medicine.

4. CONCLUSIONS

The "Patient monitoring and alerting system" using micro controller will be extremely useful for hospital application, soldier monitoring in military, new born baby monitoring. This system useful when the patient in critical condition. This project is useful for measuring the parameter of patient with the different sensor. also obtaining the message about patient health as well as time of medicine tacking.

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