

HEALTH MONITORING SYSTEM IN FOUR WHEELERS

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I.ABSTRACT

In this paper the technology advances on the bio-sensors connected to a human body which are placed in the four wheelers enabling real time health monitoring system. This system is developed to monitor the heart beat rate, body temperature.

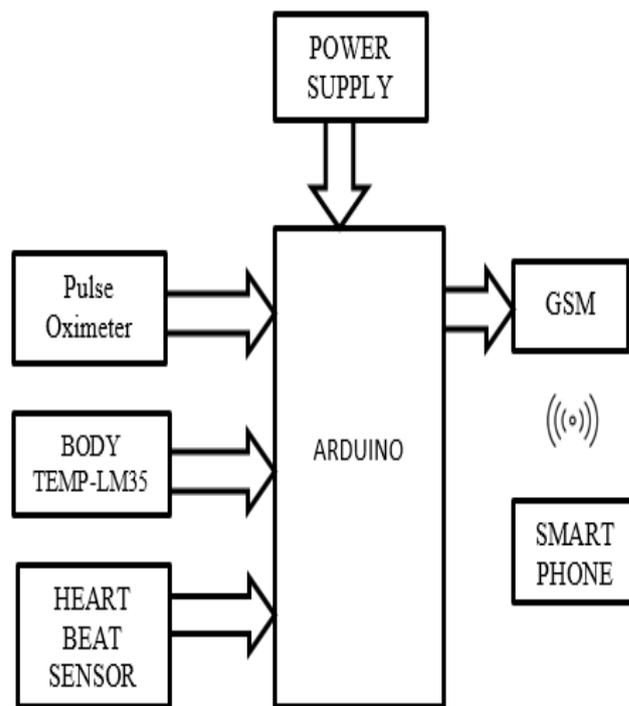
III)INTRODUCTION

According to research, we found that approximately 2000 people died monthly due to the only carelessness of their health. This is because they don't have time for themselves and forget about their health management due to a heavy workload. The reason behind to make this project is the growing world of technology and people forget their health check up which is needed to be done monthly or quarterly.

The main focus of the method is to implement a prototype model for the real time patient monitoring system. The proposed method is used to measure the physical parameters like body temperature, heart beat rate, and monitoring with the help of biosensors. Conventionally there are number of techniques available for the patient's health monitoring system with wired communication technology. In the novel system the patient health is continuously monitored and the acquired data is transmitted to an using GSM networks. Embedded processor supports for analysing the input from the patient and the results of all the parameters are stored in the database. If any abnormality felt by the patient indications will send to the medical officials. The implementation of the system is achieved by the advanced ARDUINO microcontroller and simulation results are obtained.

In the above mentioned system we have proposed a health monitoring system which is GSM based user friendly and bridges gap between doctor and patients. The system is simple, power efficient. Practical application of the system is superfine in rural areas as there would be no need for the patients to get their continuous follow-ups.

IV)BLOCK DIAGRAM



V)REQUIRED COMPONENTS

a)TEMPERATURE SENSOR:

LM35 is a precision IC temperature sensor with its output proportional to the temperature (in °C). The sensor circuitry is sealed and therefore it is not subjected to oxidation and other processes. With LM35, temperature can be measured more accurately than with a thermistor. It also possess low self heating and does not cause more than 0.1 °C temperature rise in still air.

The operating temperature range is from -55°C to 150°C . The output voltage varies by 10mV in response to every $^{\circ}\text{C}$ rise/fall in ambient temperature, *i.e.*, its scale factor is $0.01\text{V}/^{\circ}\text{C}$.



b) HEART BEAT SENSOR:

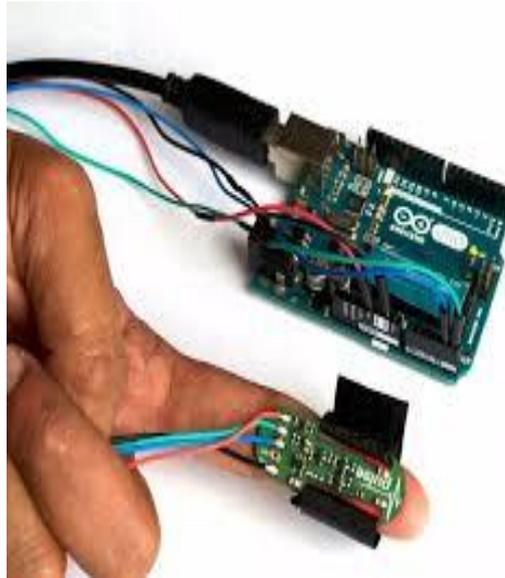
The heartbeat sensor is based on the principle of photo plethysmography. It measures the change in volume of blood through any organ of the body which causes a change in the light intensity



through that organ (a vascular region). In case of applications where heart pulse rate is to be monitored, the timing of the pulses is more important. The flow of blood volume is decided by the rate of heart pulses and since light is absorbed by blood, the signal pulses are equivalent to the heart beat pulses.

c)PULSE OXIMETER:

Pulse oximetry is a standard device for measuring the blood-oxygen saturation in the operating room. This device use of light to measure the oxygen content in blood and heartbeat rate is called pulse oximetry. Pulse oximetry depends on sensing of a physiological signal called



Photoplethysmography (PPG),which gives the optical measurement of blood volume in arteries .Pulse oximetry obtains PPG signal by irradiating two wavelengths of light such as Infrared and red LED through the tissue and compares the absorption coefficient of light by blood under these two wavelengths. This comparison helps for the measurement of the oxygen content of blood and is known as blood oxygen saturation.

d)GSM MODULE:

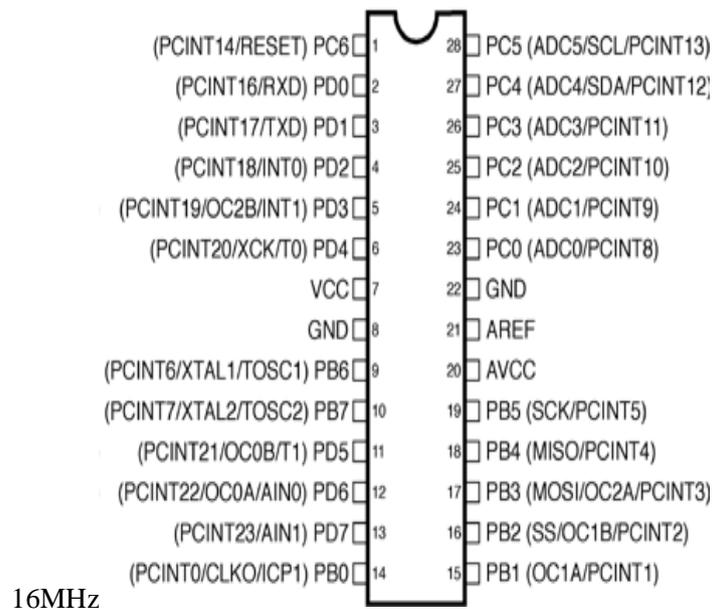
A GSM modem is a device which can be either a mobile phone or a modem device which can be used to make a computer or any other processor communicate over a network. A GSM modem requires a SIM card to be operated and operates over a network range subscribed by the network operator. It can be connected to a computer through serial, USB or Bluetooth



connection. A GSM modem can also be a standard GSM mobile phone with the appropriate cable and software driver to connect to a serial port or USB port on your computer. GSM modem is usually preferable to a GSM mobile phone. The GSM modem has wide range of applications in transaction terminals, supply chain management, security applications, weather stations and GPRS mode remote data logging.

VI) PIN DIAGRAM

The Arduino Uno is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a



ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

VII)WORKING

In the above mentioned system we have proposed a health monitoring system which is GSM based user friendly and bridges gap between doctor and patients. The system is simple, power efficient. Practical application of the system is superfine in rural areas as there would be no need for the patients to get their continuous follow-ups.

When the driver of the vehicle places the hands on the steering which contains the temperature sensor and the heart beat sensor, the temperature sensor senses the body temperature and the pulse sensor senses the heart rate and sends the data(Digital output) to the ARDUINO board and that data is send to the mobile using the GSM module. Thus the data can be send to the doctor who can monitor the health condition of the patient remotely form any location

VIII)CONCLUSION

This paper presents the design and implementation of wireless sensor network for health monitoring system by using Ardiono board.This system is used to remotely monitor the health condition of the patient by the doctor at very low cost by using the Bio-Medical sensors placed in the four wheelers.

IX)REFERENCES

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