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Heartbeat and Body Temperature Monitoring System

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A B S T R A C T

The project aim is to design a system which helps in monitoring heart beat rate and body temperature of a person on an android smart phone using IOT technology. The system makes use of Wi-Fi communication. The fluctuations in heart beat rate and body temperature will be alerted through buzzer. Wi-Fi (Short for Wireless Fidelity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet.

1. Introduction

This device consists of a microcontroller which takes the input from the heart beat sensor and temperature sensor and it calculates the heart beat rate and temperature of the patient. The microcontroller sends the parameter data to wi-fi module connected to it which will be transmitted wirelessly. The android smart phone will receive the parameters data through Wi-Fi and displays it. The rise and fall of the parameters can be alerted through buzzer. The microcontroller is loaded with a program written using embedded 'C' language.

Wi-Fi (Short for **Wi**reless **Fi**delity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet.

2.Literature Survey

Manisha Shelar, Jaykaran Singh, Mukesh Tiwari, "Wireless Patient Health Monitoring System", International Journal of Computer Applications (0975– 8887) Volume 62– No.6, January 2013.

3.System Specification

3.1 Software Requirements

- Slave default Baud rate: 9600, Data bits:8, Stop bit:1,Parity:No parity
- Auto-connect to the last device on power as default.
- Permit pairing device to connect as default.

- Auto-pairing PINCODE:"1234" as default.

3.2 Hardware Requirements

1. Micro controller (AVR): Microcontroller is a programmable device. A microcontroller has a CPU in addition to a fixed amount of RAM, ROM, I/O ports and a timer embedded all on a single chip.Crystal oscillator

2. Regulated power supply (RPS): Crystal or a ceramic resonator may be used. The CKOPT Fuse selects between two different Oscillator amplifier modes.

3. LED Indicator: It is a semiconductor light source.LED's are used as indicator lamps in many devices.

4. Wi-Fi receiver module:WIFI allows us to create wireless local area networks at high speed.and used for wirelessly connecting wires such as computer,video game console,smart phone or digital audio player etc.

5. Heart beat pulse sensor: This heart beat sensor is designed to give digital output of heart beat when a finger is placed inside it.

6. Temperature sensor:The LM35 sensor series are precision integrated-circuit temperature sensors,whose output voltage is linearly proportional to the Celsius temperature.

7. Buzzer: A buzzer is an audio-signal device , the sound source of a piezoelectric sound component is a piezoelectric diaphragm.

4. System Design

4.1Proposed System

By using this system we can monitor the heartbeat rate and body temperature of a person on an android smart phone using IOT technology..

5. Advantages

1. Wireless transmission of medical parameters.
2. Real time monitoring of health status of a person.
3. Patient health parameters monitoring using temperature and pulse sensors.
4. Efficient and low cost design.
5. Lower power consumption.
6. Fast response
7. Remotely operable

6. Applications

This system can be practically implemented for hospitals, old age homes,schools, ICU patients purposes for the detection of health parameters.

7. Conclusion

. Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested.

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