

Health Parameters Monitoring using Arduino- Heart rate, temperature, pressure and Steps count

<https://www.youtube.com/watch?v=6pEMQFjWfKQ>

In India, close to regarding 2 hundredth of the whole population loses their lives because of interrupted health observance system i.e. in most of the hospitals, doctor visits patients either in morning shift or in evening shift or in each shift. What happens if patient's health becomes important in between that interval or once a doctor isn't on the market with a patient? The solution is; a patient could lose her\his life. Thus to avoid this important situation; we tend to area unit proposing a sensible embedded system device that monitors patients health monitoring system. This system monitors patients pulse rate, temperature, pressure, foot count over Bluetooth. The knowledge and communication technologies facilitate in making a revolution in digital technology.

The project makes a use of BMP180 sensor to detect the pressure and temperature, pulse sensor is used to detect the heartbeat, adxl345 is used to detect the foot count of the person. Using Bluetooth for wireless monitoring of sensor data and if the sensor data high or low the system send the alert intimation over Bluetooth.

Bluetooth is an open standard specification for a radio frequency (RF)-based, short-range connectivity technology that promises to change the face of computing and wireless communication. It is designed to be an inexpensive, wireless networking system for all classes of portable devices, such as laptops, PDAs (personal digital assistants), and mobile phones. It also will enable wireless connections for desktop computers, making connections between monitors, printers, keyboards, and the CPU cable-free.

The functioning of this device is based on the truth that the blood level circulation during expansion and contraction of heart which can be sensed by Heartbeat sensor. Depending upon the rate of circulation of blood per second the heart beat rate per minute is calculated. This device consists of an Arduino UNO microcontroller which takes the input

from sensor. The micro controller takes the responsibility to send alert intimation through Bluetooth. The Microcontroller is programmed using Embedded C language.

The objectives of the project are:

- In case of emergency intimation can be sent to the user mobile over Bluetooth.
- Continually monitoring of person health parameter.
- Wireless monitoring using Bluetooth technology.
- Audible alerts using buzzer.

The main blocks of this project are:

- ▶ Power supply.
- ▶ ARDUINO UNO.
- ▶ BMP180 PRESSURE SENSOR.
- ▶ PULSE SENSOR
- ▶ FOOT COUNT SENSOR.
- ▶ TEMPERATURE SENSOR.
- ▶ Bluetooth module.

Software's used:

- Arduino IDE for compiling and dumping code into Microcontroller
- Express SCH for Circuit design.

Block Diagram: