

IOT Based advanced cardiac arrest detection system

<https://www.youtube.com/watch?v=NIJRrScq3Jc>

The main aim of this project is to develop a cohesive methodology for heart rate monitoring and heart attack notification system for any heart patients, especially the elderly and at risk. In this proposed system, a pulse sensor is used to measure a person's heart rate and post it on hardware as well as uploading it to blynk APP through the implementation of IoT. Mobility and compactness were also considered for this system, with a strap-on container for most of the components was also designed. Based on the heart rate data, the system also sends notification on mobile about an emergency based on very high or low heart rate.

This project makes use of an onboard computer, which is commonly termed as micro controller. It acts as heart of the project. This onboard computer can efficiently communicate with the output and input modules which are being used. The controller is provided with some internal memory to hold the code. This memory is used to dump some set of assembly instructions into the controller. And the functioning of the controller is dependent on these assembly instructions.

The action of these instructions is already loaded into the Microcontroller using Embedded C programming. The controlling device of the whole system is a Microcontroller. Max30100 heartrate sensor, ESP8266 Wi-Fi module, LCD and Buzzer are interfaced to the Microcontroller. When the user switches ON the device, it will continuously be monitoring the heart rate on LCD and upload them into the BLYNK APP also sending blynk notification to the user mobile and activate the buzzer in abnormal conditions through esp8266 wi-fi module. The action of these instructions is already loaded into the Microcontroller using Embedded C programming.

Features:

- Design a cardiac arrest detection and notification system.
- IOT based Live heartrate monitoring.
- Using blynk mobile application.

- Continuous monitoring the person heartrate and SPO2 on LCD.
- High and LOW heart rate alerts using BUZZER and blynk notification.
- To achieve this task using Arduino nano microcontroller.

The main objectives of the project:

- Adapter power Supply.
- ARDUINO NANO.
- ESP8266 WI-FI Module.
- MAX30100 SENSOR.
- LCD display.
- Buzzer.

Software's used:

1. Arduino ide studio compiler for dumping code into Microcontroller.
2. Express SCH for Circuit design.
3. Embedded C language.

Block Diagram:

Block diagram

