

## **IOT Based Heart Attack and Alcohol Detection with Engine Locking System**

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**ABSTRACT:** Heart attacks are a leading cause of sudden death, and in many cases, the first attack can be fatal if not detected early. Regular health monitoring is essential for early detection and prevention. Many people lose their lives due to poor diet, aging, lack of physical activity, and other factors. To address this, we propose an IoT-based Heartbeat Monitoring and Heart Attack Detection System that continuously monitors the user's heart rate. In case of abnormal readings indicating a potential heart attack, the system sends emergency alerts to nearby police stations, ambulances, and registered family contacts. It also provides GPS tracking to help responders locate the person or vehicle quickly.

**Keywords**-ESP32, SP02 Sensor, MQ-3 Sensor, Vibration sensor, LCD.

1.INTRODUCTION: As of now so many people are

Passing away due to accidents .The major problem for road accidents are drunk &drive and also due to heart attacks .For this problem there has been so many solutions has been raised but none of them has been controlled them .There are some major disadvantage for the existing system they are as follows

- 1.1 Mouth alcohol contamination of the breath can lead to falsely elevated results with serious legal consequences.
- 1.2 Breath alcohol analyzers sometimes fail to detect mouth alcohol despite having slope detection algorithms.
- 1.3 Greater transparency and improved research access are needed in breath alcohol testing.
- 1.4 Breath analyzers using alcohol detection are available at higher prices and they have shorter life time
- 1.5 For an alcohol sensor the response speed is also low and accuracy is not high

These are the five major problems we have noticed in existing system.

#### **2.LITERATURE SURVEY:**

1. Heart rate monitoring is a vital aspect of maintaining heart health. People from different age groups have different ranges for maximum and minimum values of heart rate, the monitoring system must be compatible enough to tackle this scenario. In this paper, an IoT based system has been implemented that can monitor the heartbeat from the output given by a hardware system consisting of a NodeMCU and pulse sensor. Further, an alert system is added which is executed if the heartbeat goes below or above the permissible level given in the devised algorithm. The alert message is received by the doctor through a mobile phone application. By using this prototype, the doctors can access the heartbeat data of the patient from any location. The nurses or the duty doctor available at the hospital can monitor the heart rate of the patient in the serial monitor through the real-time monitoring system.

2. HEART ATTACK DETECTION & HEART RATE MONITOR USING IOT Now a day we have an increased number of heart diseases including increased risk of heart attacks. Our proposed system user's sensors that allow to detect heart rate of a person using heartbeat sensing even if the person is at home. The sensor is then interfaced to a microcontroller that allows checking heart rate readings and transmitting them over internet. The user may set the high as well as low levels of heart beat limit. After setting these limits, the system starts monitoring and as soon as patient heart beat goes above a certain limit, the system sends an alert to the controller which then transmits this over the internet and alerts the doctors as well as concerned users. Also the system alerts for lower heartbeats. Whenever the user logs on for monitoring, the system also displays the live heart rate of the patient. Thus concerned ones may monitor heart rate as well get an alert



of heart attack to the patient immediately from anywhere and the person can be saved on time

# **3.** HEART ATTACK DETECTION BY HEARTBEAT SENSING USING INTERNET OF THINGS IOT

We all know heart attack can kill your life in 3 attempts but now a day it can be dangerous in first rate readings and transmitting them over Internet attempt also. If checking our health regularly on daily basis then we can detect so many different diseases by detecting them previously, Life is precious. Many people among us lose their life to heart attack. This is because of their diet, age, less physical activity and many other factors. Heart attack is not easy to detect, to overcome and help our society from heart diseases and attack, we are developing such a system www.ijcrt.org © 2023 IJCRT | Volume 11, Issue 5 May 2023 | ISSN: 2320-2882 IJCRT2305001 International Journal of Creative Research Thoughts (IJCRT) www.ijcrt.org a3 which will help to decrease the death rate and early detection a heart attack. In this system we are implementing a heartbeat monitoring and heart attack detection system using the Internet of Things. The sensor is then interfaced to a microcontroller that allows checking heart

# **4.** HEARTBEAT SENSING AND HEART ATTACK DETECTION USING INTERNET OF THINGS: IOT

In this project we are implementing a heartbeat monitoring and heart attack detection system using the Internet of things. These days we have an increased number of heart diseases including increased risk of heart attacks. The sensor is then interfaced t o a microcontroller that allows checking heart rate readings and transmitting them over internet. The user may set the high as well as low levels of heart beat limit. After setting these limits, the system starts monitoring and as soon as patient heart beat go es above a certain limit, the system sends an alert to the controller which then transmits this over the internet and alerts the doctors as well as concerned users. Also, the system alerts for lower heartbeats. Whenever the user logs on for monitoring, the system also displays the live heart rate of the patient. Thus, concerned ones may monitor heart rate as well get an alert of heart attack to the patient immediately from anywhere and the person can be saved on time.

**3.PROPOSED METHODOLOGY:** In our system we use micro-controller such as ESP-32 and sensors like MQ-3 and SPO2 sensors, which is used to detect the alcohol levels and monitors the blood oxygen level and

pulse rate of drivers health. We have used relay to automatic shut-off the motor. We have also used LCD, Buzzer for alerting driver.

#### **Block diagram:**



Figure 1: Block Diagram

#### 1.ESP32 Micro-Controller:

We are using ESP-32 as a micro-controller. It takes power supply and also main source to generating power to other components and sensors. It act as the central processing unit, collecting data from sensors and it control every component in the system. It is used for multitasking purposes.

**2.MQ-3 Sensor:** This sensor is primarily to detect the ethanol and other gases including breath analyzers . It detects alcohol concentration in the driver's breath.It

Sends analog signal to the ESP-32.

**3.SPO2 SENSOR:** This sensor is used to measures the pulse rate and oxygen saturation of blood. It provides a quick and easy way to monitor oxygen levels in the blood and it sends data to ESP-32 and alerting the user.

**4.LCD(Liquid crystal display):**It displays 16\*2configuration is used to know the status of the alcohol and oxygen levels which is transmitted by the ESP-32 micro-controller.

**5.BUZZER**:Buzzer is used to alert the driver or users of potential dangers .When the alcohol and pulse rate exceeds the threshold value it alerts value it alerts the driver.



6.**RELAY:** The purpose of the relay in the alcohol engine lock system with MQ3 sensor is to provide a safe reliable, and fail-safe method of controlling the high voltage and current required to activate the engine lock mechanism. The positive relay provides isolation and protects the microcontroller and other electronic components from voltage spikes and other electrical disturbances, ensuring the safety and reliability of the system.

### **1.2 ARCHITECTURE OF THE SYSTEM**



**RESULT:** By Doing this project we can early detect the heart attack and we can reduce so many accident and also we have got results which is accurately detecting the accidents. This system gives the more efficient when at the time drunk&drive.it locks the engine when an drivers exposes to alcohol.

**Conclusion:** In this project we have developed a proto type model that can automatically lock the engine when a drunken driver tries to drive a car. By fitting this alcohol sensor into the car, we can safe guard the life of the driver and also the remaining passengers. It is a very simple application. The life time of the project is high and also low maintenance and low power consumption. This project is developed to efficiently check drunken driving. By implementing this project, we can decrease the accident rates under the influence of alcohol.

**FUTURE SCOPE:** In this we may add automatic engine locking system and also gives alerts to the driver about his health condition. It has continuous monitoring and it can detect real time data transmission .it also gives medication reminder

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