

## ACCIDENT DETECTION AND AVOIDANCE SYSTEM USING IOT

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### ABSTRACT

Road accidents on highways are very common. An estimated 1.35 million people worldwide have lost their lives as a result of these accidents. This work is being developed with a view to preventing accidents. Preliminary information is provided to the driver to wear seat belts as well as to determine whether the driver was under the influence of alcohol or not. Therefore, in order to avoid accident we had used certain sensors to alert.

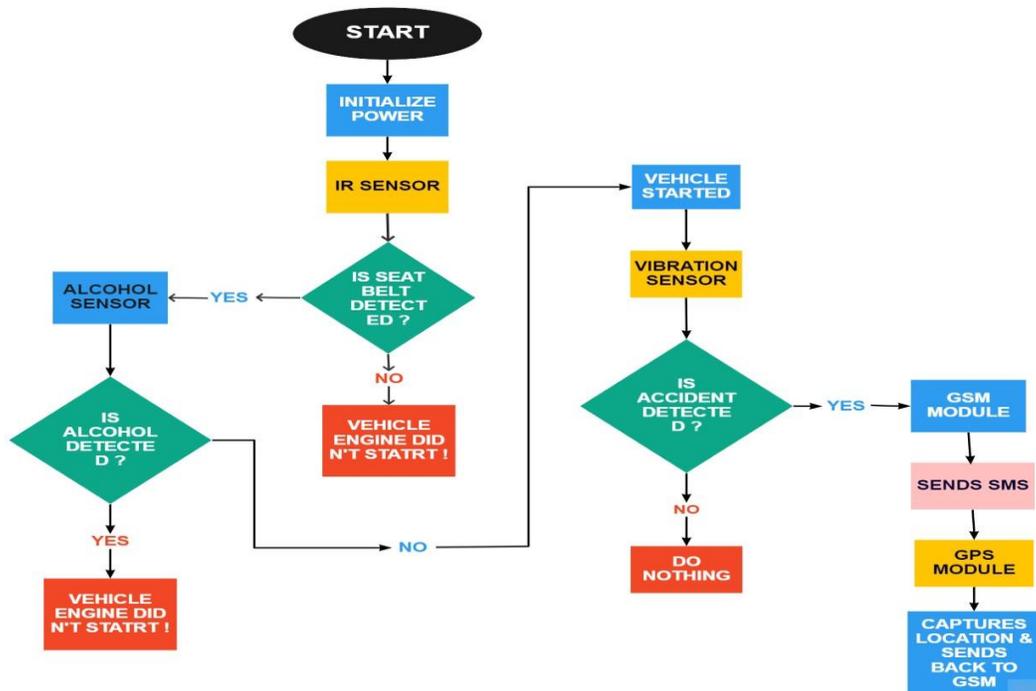
**Keywords:** preventing accidents, preliminary information, seat belts, determine alcohol.

### I. INTRODUCTION

The development of the transport system has become a productive force so that humans can have a higher civilization than the creatures on earth. Cars are very important in our daily lives. We use it to go to our workplace, communicate with our friends and family, and deliver our goods. But it can also lead to disaster and even death. Speeding is one of the most important and fundamental aspects of driving. Not only does it affect the severity of the crash, but it also increases the risk of being involved in an accident. Despite the many efforts taken by various public and private organizations around the world with various programs to raise awareness of reckless driving, accidents do occur frequently. However, many lives would have been saved if paramedics had received the details of the crash early. Therefore, effective automatic accident detection with automatic notification of emergency room service is a key requirement to save a precious human life.

### II. SYSTEM DESIGN

#### 2.1) System Analysis Model



**Fig. 1** Block Diagram of System

## 2.2) Modules Classifications

1. Arduino Uno
2. GPS Module
3. GSM Module
4. IR Proximity Sensor
5. Alcohol Detector
6. Vibration Sensor
7. Relay Module
8. LCD Display
9. NPN Transistor
10. Buzzer
11. Motor
12. DC Adaptor

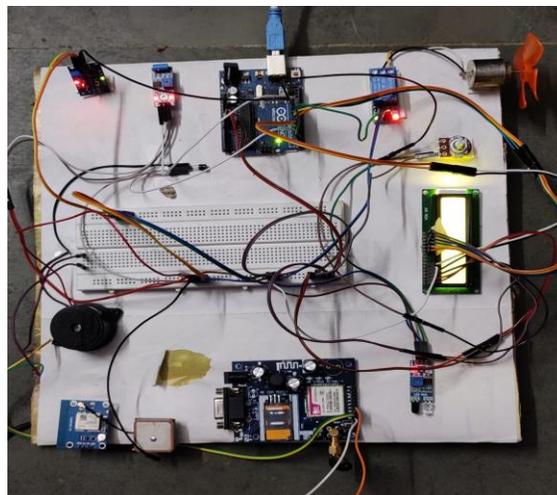
## 2.3) Working

First IR sensor will detect whether driver has wearied seat belt or not. And if the sensor will not detect the seat belt then it will send signal to buzzer and the it will start beeping. And at the same time display shows that “seat belt not detected” and it will not let the engine to start. And if the seatbelt is detected then the alcohol detector detects whether the driver has consumed alcohol or not and if it detects alcohol then also it will not let the engine to start. After that Relay module gets signal and it will start the motor and hence vehicle started. Now, if any reason accident occurs then vibration sensor detects the impact caused by the vibration sensor and it will sends the signal to GPS sensor. Then, GPS sensor will be activated and it will catch latitude and longitude and send to GSM module and this GSM module will send the received location to a predefined mobile number.

## III. RESULT AND DISCUSSIONS

he instruction will be displayed in the LCD. Also alarm system will be there to notify the driver. The system will detect the accidents. And if any accident occurs then the system will automatically send the message to a predefined mobile number along with its location.

### 3.1 SNAPSHOT



**Fig. 3.1:** Working model snapshot

#### IV. CONCLUSION

This device serves as a friendly and economical device on the highway used to provide information to follow safety rules. It can also warn vehicles if it violates rules and regulations.

The death toll from road collisions is growing rapidly. If the victims are present redeemed in due time, several lives can be saved. We have discussed the various strategies he has focused on not only in finding the danger but also in preventing it. Various types of sensors we had used such as vibration sensor, alcohol sensor, IR sensor, GPS module, GSM module, relay module etc. and here the Arduino system is used for risk detection and avoidance system. Various risk prevention strategies were also addressed, including acquisition of drunkenness. If an accident is caught, location information is sent to any mobile register number any ambulance or hospital so that assistance can be provided as soon as possible. And if here we see that if the driver is drinking alcohol than an alcohol sensor will detect and will not agree to start the engine, if the driver is not a drinker than the engine will start, And we look belt if worn that if it will let you know that people have not worn the belt instead it does not allow you to start engine.

"It is different from others because I added an alcohol sensor to see if the driver had been drinking or not".

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