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Accident Detection and Alert System

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ABSTRACT: Speed is one of the main causes of traffic accidents. Many lives could be saved if emergency services could get information about an incident in time. This project is about an accident detection system, which uses various components and calls a rescue team for help when an accident occurs. Efficient automatic incident detection, which automatically alerts emergency services of the accident location, is paramount to saving valuable lives. The proposed system is for incident notification and detection.

It reads the exact latitude and longitude of the accident vehicle and sends this information to the nearest emergency service provider. The goal of this project is to detect accidents in time and call rescuers.

I. INTRODUCTION

The development of transportation has been the driving force behind human beings having a higher level of civilization than all living things on earth. Cars are very important in our daily life.

We use it to go to work, keep in touch with friends and family, and deliver goods. But it also causes us trouble and can even kill us by accident. Speed is one of the most important and major risk factors in driving. Not only does this affect the severity of an accident, it also increases the risk of an accident.

II. LITERATURE SURVEY

Many researchers carried out their studies on accident detection system. Traditional traffic accident prediction uses long-term traffic data such as annual average daily traffic and hourly volume. In contrast to traditional traffic accident prediction, real-time traffic accident prediction relates accident occurrences to real-time traffic data obtained from various detectors such as induction loops, infrared detector, camera etc. Real-time traffic accident prediction focuses on the change of traffic conditions before an accident occurrence, while traffic incident detection studies are concerned with the change of traffic conditions after an incident occurrence. However, the performance of these detection and prediction system is greatly restricted by the number of monitoring sensor, available fund, algorithms used to confirm an accident, weather, traffic flow etc.

In addition to automatic detection systems, passive accident detection methods detect accidents based on reports from drivers, reports from transportation departments or community employees, and surveillance from aerial surveillance or surveillance cameras. The downside of this type of detection system is that someone has to witness the incident. There are also delays and inaccuracies due to eyewitness facial expression issues. Compared to this detection method, driver-driven incident detection systems have many advantages, such as faster response and more information about the incident. However, the seriousness of the accident may prevent the driver from reporting it at all.

Existing built-in automatic crash detection systems use an impact sensor or vehicle airbag sensor to detect a crash and use GPS to locate the crash.

III. PURPOSE

- The purpose is to prevent accidents by monitoring changes in vehicle speed while the accelerometer can detect falls.
- Arduino is the main control device that detects or warns in the event of an accident. It collects data from accelerometers and Cellphones [GPS] will displays the output.
- This will ensure that rescuers arrive in time and save lives.

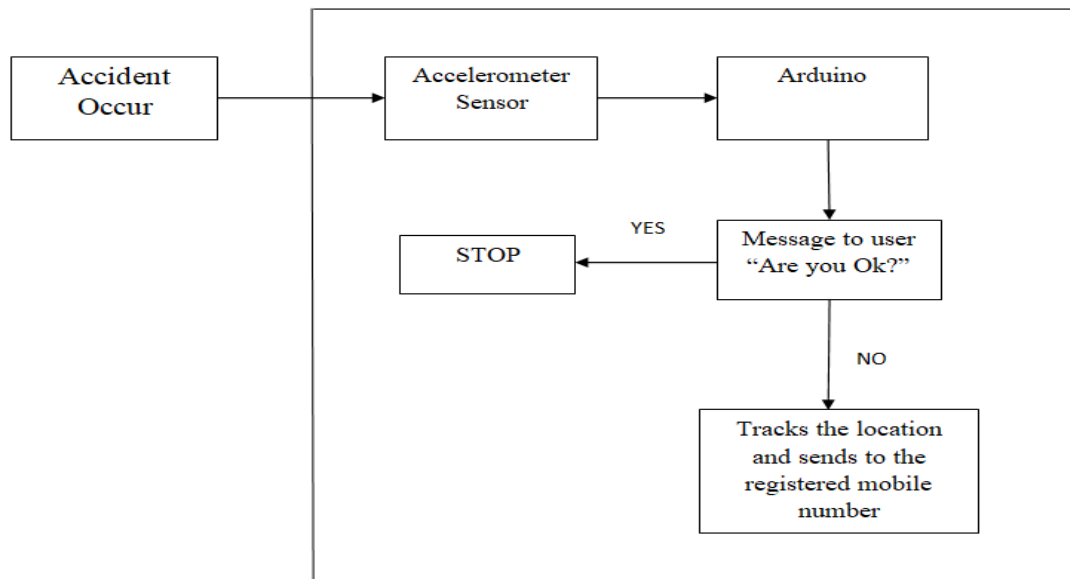
IV. PROCEDURE

- Monitors vehicle speed and detects sudden drops in vehicle speed.
- An Arduino UNO is used as a control device and reads values from the accelerometer. The accelerometer checks for axial drop.
- When the Arduino detects a sudden change in vehicle speed. It reads your current location from the GPS of user's cellphone and sends it via SMS to from usersmobile number.
- Before sending the SMS, the Arduino turns on the buzzer and after 30 seconds it turns off and the SMS is sent.
- However, the "IAM OKAY" button can be pressed if the passenger is not in danger. This is done to avoid situations that could lead to false emergency rescue.

V. PROBLEM STATEMENT

The goal of Project is to detect incidents and notify rescue teams immediately. The difference between the existing system and the ideal system is that it uses an automated system that can determine the latitude and longitude of the place where the accident occurred without delay. This system can save more lives.

VI. SYSTEM ARCHITECTURE



VII. CONCLUSIONS

Incident detection system has been developed. The proposed system is for incident notification and detection. It reads the exact latitude and longitude of the accident vehicle and sends this information to the nearest emergency service provider. Arduino helps pass messages to other devices in the system. An accelerometer monitors which direction a collision occurs and a gyroscope is used to determine if the vehicle rolls over. Information is sent to the registered number. GPS allows you to transmit your location through a tracking system, including geographic coordinates for each area.

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