Theft and Accident Detection Car

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Abstract-— **This The main objective of this is to detect the accident and theft of a vehicle. The accident and antitheft module is setup in the vehicle, where the arrangement detects the happening of accident or theft of automobile. It decreases the loss of life or theft of automobile. The accelerometer sensor and switch detects the accident. The theft of the vehicle is detected by Infrared sensor which has been set up in front of owner of vehicle. If an automobile is met with an accident then the given sensors will activated and the location coordinate of the accident will be sent to emergency stations. If the vehicle has stolen, then the owner of the vehicle and police station will receive the SMS.**

I. INTRODUCTION

There is a major increase in automobiles day by day and accidents and theft of vehicle have been greater than before in daily life. An well-organized automotive system is build for accident and theft detection of vehicle using an embedded system consisting of Global Positioning System module (GPS) and Global System for Mobile Communication module (GSM). When an accident takes place, the Accelerometer and infrared sensor parameters will be sensed and the system will deactivated and buzzer will activated. And GPS module starts sending the coordinates of accident site to the owner, relative, law enforcement authorities and health services in response to which emergency action will be taken them immediately. In case of theft of vehicle, the owner of the vehicle and related police station can automatically get to know the location of vehicle and the proper action can be taken properly and in the case of accident the relative and the hospital authority will get the location coordinate and the process of medical facility can be served As soon as possible after the accident. In this way we can save much more life and prevent vehicles from the thieft

II. EXISTINGSYSTEM

In the existing system there is no technology like this, its only in some of the expensive car, but by using this technique we can adopt it even in small vehicle likeBike and in different type of public transport. It will also message the adject coordinate to the respective institute or can say department. Like when the theft case will happen it will send message to the owner and at the police station. In case of accident the proper coordibate will be sent out to the family member of the owner along with the hospital so that the hospitalised can be done as soon as possible and proper action will be taken in case of theft.

III. PROPOSED SYSTEM

The proposed system aims to detect the accident and the theft location coordinated to spot it. In it we use Arduino Microcontroller. The board is equipped with sets of digital and Analog Input/output pins. The board features with 54(fifty four) digital I/O pins and 16(sixteen) analog input pins. It is programmed through Arduino IDE (Integrated Development Environment). The system will be consisting of Arduino , GPS module, GSM module, LCD buzzer, DC Motor and,Accelerometer sensor, Infrared sensor, battery and the switch mainly. The proposed system is not only efficient but also very effective to be implemented quickly and easily. Accident detection and anti-theft equipment can be fitted in automobile. Accident detection and anti-theft system done very easily as simple as the system makes use of GPS and GSM technologies areused to send the location coordinates of the vehicle and tosend alert messages to emergency stations(police station or Hospital) and family members instantly.

Accelerometer Sensor
Accelerometer sensor is used to check whether an automobile is met with an accident with or not. The automobile is inclined with the road with 0 or 180 degrees. As the inclined angle changes the probability of accident occurs increases and accelerometer sends info to the Arduino Microcontroller.

Infrared Sensor
An infrared (IR) sensor is an electronic sensor that detect and measures infrared radiation in neighbouring

environment. Infrared radiation was fortuitously discovered by an astronomer named William Herchel in 1800. While measuring the temperature of each color of light (separated by a prism), William Herchel noticed that the temperature just beyond the red light was the highest one . Infrared is invisible to the human eye, as its wavelength is very longer than that of visible light. Anything that emits heat gives the infrared radiation

GSM and GPS modules

The GSM module allow an Arduino board to connect to the sensor, to send and receive SMS using GSM. GPS is used to detect the Latitude and Longitude of any location on the Earth, with exact UTC time (Universal Time Coordinated). Whenever an accident is occurred, GPS Receiver is used for detecting coordinates of the vehicle, and GSM module is used for sending the coordinates to the emergency server or stations by SMS.
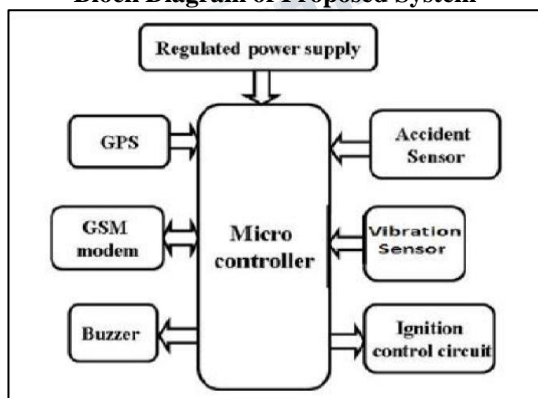
Buzzer

Buzzer is used to emit the sound in the automobile, because an accident occurred may be major or minor, so in-order to detect the accident condition of automobile. The Buzzer is connected with Arduino kit. Buzzer plays more important role, there is also a switch which determines whether an accident occurred is major or minor. if accident is major then the people in that automobile will be unable to touch switch, so within few seconds the conformation of major accident will be sent to emergency stations, else if the switch is pressed there will be no confirmation message sent to the servers, so that it determines that the accident is minor so no assistance will be provided at that time.
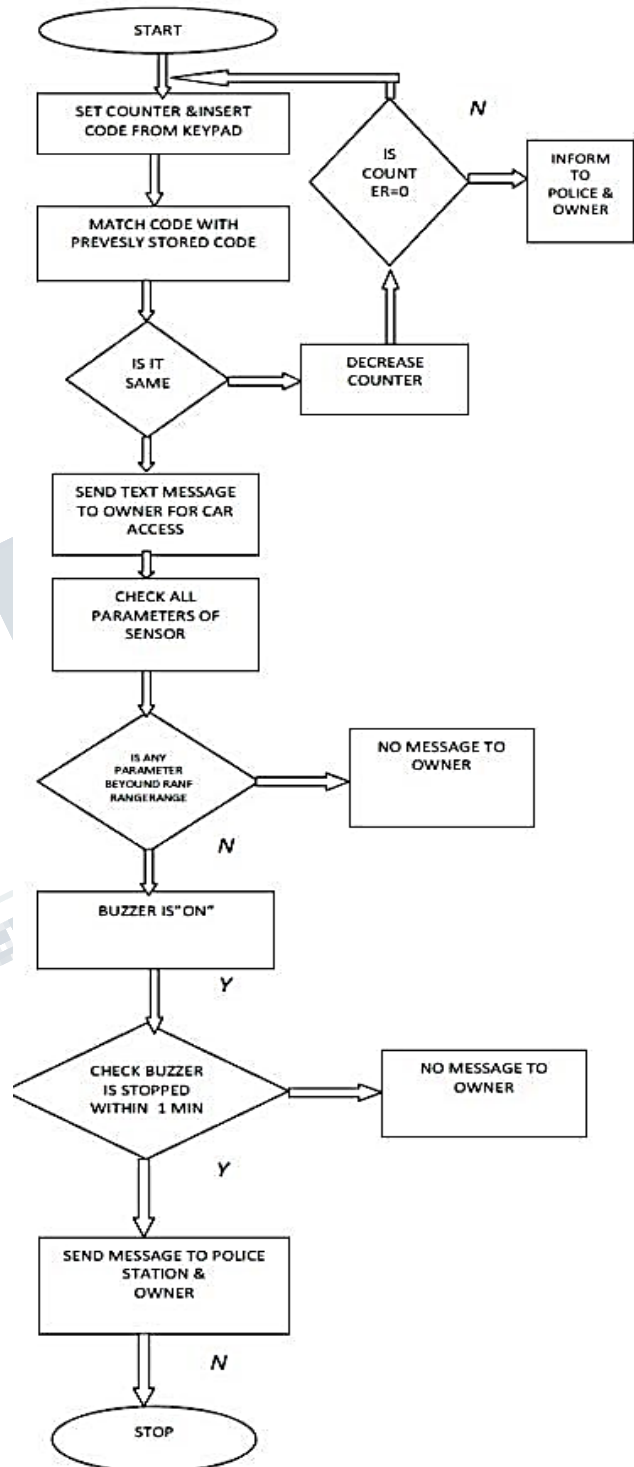
DC Motor

To show the status of the engine a 12v DC motor has been used. In it there will also a relay module type is connected, when the car will met with an Accident it will turn off

Flow Chart of Proposed System

Block Diagram of Proposed System

IV. CONCLUSION

This paper presents vehicle accident detection and alert system with SMS to the user defined mobile numbers and emergency helping stations. The proposed vehicle accident detection system can track geographical information automatically and can also send an alert SMS regarding an accident. This vehicle accident detection and alert systems provides emergency response with crucial information at the earliest possible time. Reducing the time between when an accident takes place and when it is detected also reduce mortality rates. These systems are however expensive and not available to all vehicles. To further increase the usage of automatic accident detection and notification systems, this system can be used indirectly to detect the accidents through sensors such as accelerometer and infrared sensors and switch. The theft of the vehicle can be detected by the GPS module and the location of the vehicle is tracked and it is sent to the owner mobile number and vehicle can be stopped by the owner through the coordinates. So this is an efficient and an effective system to detect the accident and theft vehicle easily.

V. FUTURE WORK

In the future we can interface different types of sensors such as alcohol detector to know about consiousness of driver, heart rate detector, fire detection sensor and many more. we can also set up a hidden camera in vehicle in-orr to take photo from accident spot or the photographs of the thief who has stolen the automobile. Adject location of the vehicle can be spotted and urgent help can be given in order to save lives as soon as possible.

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