SMART BIKE WITH ALCOHOL DETECTION AND THEFT PREVENTION

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ABSTRACT

Using two wheelers is the centre of attraction to the youngsters. It doesn't end with owning a bike but owning a costly bike matters. Thispaper ultimately leads to many crises. There are mainly three problems which arise frequently.They are drunken drive, not wearing helmet, and stealing bikes. A modern vehicle has been using a key fob from last decade to arm and disarm the vehicles. To solve these three problems this project is developed. The processinvolves wearing a helmet mandatory to start the bike and if he is drunk it will not start it is done by using RF receiver and further we make use of the GPS to track the location of the vehicle and GSM to alert the user by sending him a SMS or by calling him depending upon the situation and placing a camera in the speedometer to capture the photo and send the image to the owner. Incase of unlocking the bike, the owner will receive an automatic call. This project not only ensures the safety of the bike but also the person. The advantage of the project is that the whole system will be designed and fixed in a box inside the frame of the bike. This box can be serviced or repaired only in showrooms.

KEYWORDS: *GSM, Alcohol Sensor, GPS,RF Receiver and Transfer*

INTRODUCTION

The increase in the rate of bike thefts leads to many anti theft surveillance system. This is another measure including the anti theft and avoiding drunken drive. In certain cases it is always unavoidable to stop accidents. This paper deals with the step by step procedure of building a bike with security which can avoid accidents due to drunken drive and stealing the bikes. The future of bikes can be calculated like this. This project is evolved through various motivationsAccording to a statistics, number of motorcycle stolen nationally in 2014 is 42,856. This shows how security and prevention of a vehicle theft is very important in current scenario .In modern day's vehicles anti-theft system is of a prime importance.

According to BhanuPrakash et.al, The vehicle being stolen can be stopped by using GPS feature ofmobile phone and this information is used by the owner of the vehicle for future processing. ManasiPenta says As soon as the bike rider's head is detected while he is trying to wear helmet, the movement of his head from outside to inside of helmet will bedetected which will give high output of used PIR sensor.

MATERIALS USED

- Finger print
- Alcohol sensor
- GPS
- GSM

Finger Print

The ARA-ME-01 is high performance fingerprint module. The print module is feasible, portable and compatible. This finger print plays a vital role as the owner of bike can access the bike only through finger print. It not only safe guards the bike but also registers the prints of the person. This finger print module enables the security system when tried to break or unlock the bike.

Helmet wearing

At first, the paper deals with wearing helmet. Helmet wearing is a great threat in the society. The government keeps on demanding public to wear helmets to safeguard their lives. But unfortunately the schemes or rules implemented to eradicate ends in vain. In this project, the bike is designed in a way that the user of the bike must wear helmet in order to start the bike. Wearing helmet is not alone required but the person must not be drunken at the time of starting the vehicle. When a person wears the helmet, switch at the top switches on and it begins the process of sensing.

If a person tries to kick the bike in intoxication level, alcohol sensor senses the smell and doesn't allow the bike to start by transmitting the message through sensor. . The alcohol sensor is attached to the helmet at the rear end of the helmet. RF transfer and receiver is attached to the bike to sense the alcohol sensor.

MQ303A is semiconductor sensor is for Alcohol detection that detects alcohol. It has good sensitivity and fast response to alcohol, suitable for portable alcohol detector.

DESIGN CIRCUIT DIAGRAM

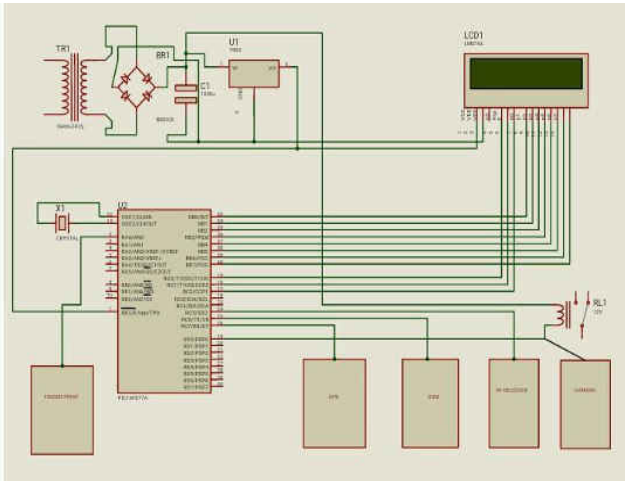

Figure 1.1 This figure represents layout of the circuit connections

The explanation of the circuit diagram is as follows, a connection is made to battery from micro controller, GSM and display. Finger print, GPS, RF Receiver and Camera are connected to microcontroller.

Fig 1.2 Alcohol sensor senses the alcohol

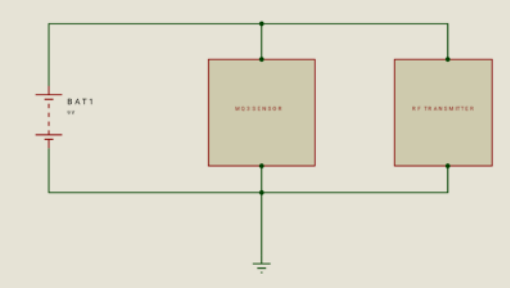

Fig 1.3 Shows the circuit diagram for Helmet

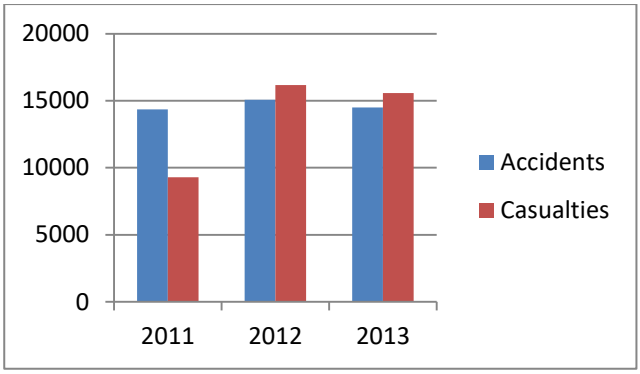

Figure 2.1.shows status of bikes stolen in recent years and comparison of accidents occurred and casualties reported.

B. GSM/GPS

The GSM (Global System for Mobile Communication) module is required to develop communication link between the user of the vehicle and security system.GSM Modem provides full functionally capability to serial devices to send SMS. When a person tries to unlock the hand lock, camera automatically takes a snap of the thief and send the picture to the owner of the bike. This makes an easy way to identify the thief and recover the bike when stolen. GPS (Global Positioning System) is a Satellite based navigation system made up of a network of 24 Satellites . It is used for tracking of the vehicle. Using GPS we can able to identify the perfect (or) accurate location of the bike .GPS Receiver takes this information and use triangular to calculate the user's exact location.

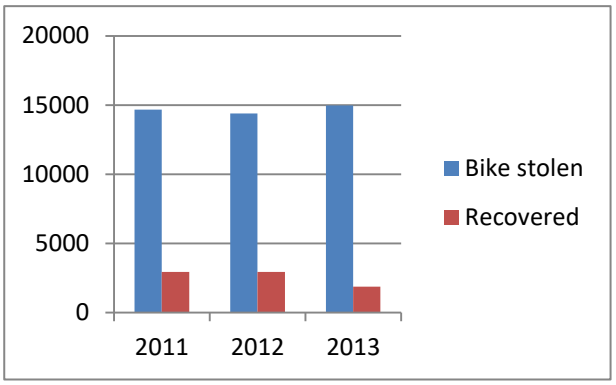

Figure 2.2. This bar chart represents the comparative study of bike stolen in recent years and the status of the bikes recovered

CONCLUSION:

This project is done for reducing the accidents, controlling the bike thefts and alcohol drive. This will be an eye-opener for all people who use it and the thieves are easily identified for further action.This project deals with the design & development of a theft control system, which is being used to prevent/control the theft of a vehicle. The developed system makes use of an

embedded system based on Global System for Mobile communication (GSM) technology with CAN bus along with RFID system. The RFID reader will be interfaced with the microcontroller.

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