Safety cap for online Dispatcher based on Iot

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ABSTRACT: **Bikes are most used mode of transportation because of its simplicity and efficiency.. Safety is the major concern of all riders. The safety of online dispatcher who does business travels across areas using two wheelers, where safety of bike rider counts. Hence to provide safety for such rider this work has been proposed. This project aims for accident avoidance and detection of safety cap during the Ride. The proposed system is an safety cap. A module affixed in the safety cap, such that, the module will sync with the module affixed on bike and will also ensure that biker has worn Helmet/ safety cap.**

KEYWORDS: Safety cap, Touch sensor button, Alcohol sensor, LCD.

I. INTRODUCTION

From the past few years, number of road accidents are increased and found to be 500-600 accidents every day. In vehicle safety India is said to meet two out of seven according to WHO. Accidents are caused due to many reasons, the main causes for the accidents are Rash driving, non wearing of helmet and alcohol consumption.

Thus this work is been proposed for the safety of the online dispatcher who work for online business, especially carried out via motor cycle.

II. LITERATURE SURVEY

Prem Kumar M, Rajesh Bagrecha [1] The proposed framework defines when vehicle met an accident, the accident will be distinguished by the vibration sensor. The vibration sensor can be utilized as a part of the vehicle alert application so that unsafe driving can be recognized. It can be utilized as an accident or rollover finder of the vehicle amid and after an accident. With signal from a vibration sensor, an accident can be perceived. The smart helmet having worked in Bluetooth capacities and controls, empowering clients to utilize all highlights of association specialized gadgets with no pre-ne4cessarity of introducing a headset.

Ms. Subia Sayeed [2] So here is an idea to avoid these problems by developing a system which is located in the helmet which detects the alcohol in breath and switch off the ignition system of the vehicle and also a system which detects rider is wearing helmet or not depending on that it starts the vehicle. This system is equipped with over speed detector. The main aim is to design and develop safety management systems for two wheelers for applications in the real time environment for the avoidance of the accidents due to the vehicle or rider's fault. Generally the faults are drunk driver, over speed driving and many other environmental conditions.

Indranil Nikose, TusharRaut, Reena Bisen, Varsha Deshmukh, Ashwini Damahe, Pranoti Ghotekar [3] The working principle of the smart helmet is very simple. Helmet hit the ground, this sensors sense and gives to the microcontroller .then controller extract GPS data using GPS module then timers start counting upto 10 min. If the person is not capable to driven bike upto 10 min then automatically sends massage to ambulance and parents. This project is mainly to detect the alcohol drunken people. Here we are using microcontroller which is interfaces to alcohol sensor. Alcohol Sensor is a sensor that measures the amount of alcohol that is present in surrounding environment. If any drunken person came, alcohol sensor sense it and passes it to controller through ADC.

J.Vijay, B.Saritha, B.Priyadharshini, S.Deepeka, R.Laxmi [4] MQ-3 gas sensor (alcohol sensor) is suitable for detecting alco-hol content from the breath. So it can be placed just below the face shield and above the additional face protection. The sur-face of the sensor is sensitve to various alcoholic concentrations. It detects the alcohol from the rider's breath; the resis-tance value drops leads to change in voltage (Temperature variation occurs).Generally the illegal consumption of alcohol during driving is 0.08mg/L as per the government act. But for demonstration purpose, we programmed the threshold limit as 0.04 mg/L. Threshold can be adjusted using variable resis-tor. Earlobe detector senses which is fitted with the helmet unit senses the blood flow in the earlobe region. So that the wearing of helmet is confirmed by our system and similarly alcohol sensor fitted in the mouth piece of the helmet detects the alcohol in the breath and sends the level of alcohol to the controller. If both of the criteria's are met in an acceptable manner then the two control signals are sent from the helmet unit to the vehicle control unit. The decoded RF signal is sent to the controller in the vehicle unit shown in fig. 2 to start / stop the vehicle. If the signal from the

earlobe region and no control signal from alcohol sensor is detected then the vehicle will start, otherwise the vehicle will not start.

III. PROPOSED METHODOLOGY AND DISCUSSION

Many embedded systems have substantially different designs according to their functions and utilities. In this project design, structured modular design concept is adopted and the system is mainly composed of a single microcontroller, RF transmitter, touch sensor button, alcohol sensor, safety cap. The microcontroller located at the centre of the block diagram forms the control unit of the entire project. Embedded within the microcontroller is a program that helps the microcontroller to take action based on the inputs provided.

The project aims to provide total safety for motorcycle riders In this project there is a safety cap which has the control over the motorcycle.

In safety cap the sensor module is built using sensors like alcohol sensor and touch sensor button. This sensors are connected to RF transmitter .sensor module will be placed in the safety cap to detect weather a person worn safety cap or not, once the person wear the helmet/safety cap the signals gets transmitted. The module in the bike allows the rider to start the vehicle once the module receives signals from safety cap unit. Accidents are minimized by wearing the safety cap which is affixed with these components.

The existing system basically has a wireless telecommunication, and is connected to a smart phone. The prototype uses sensors to detect a crash or accidents and the communication hardware is used to automatically dial a predefined emergency contact. The other existing system is to control the speed in which the biker is going in. The helmet is fixed with all the components and sensors that read the status of the bike rider and accordingly instruct the rider to reduce or increase the speed based on the sensor value. Drunk and driven case is also detected.

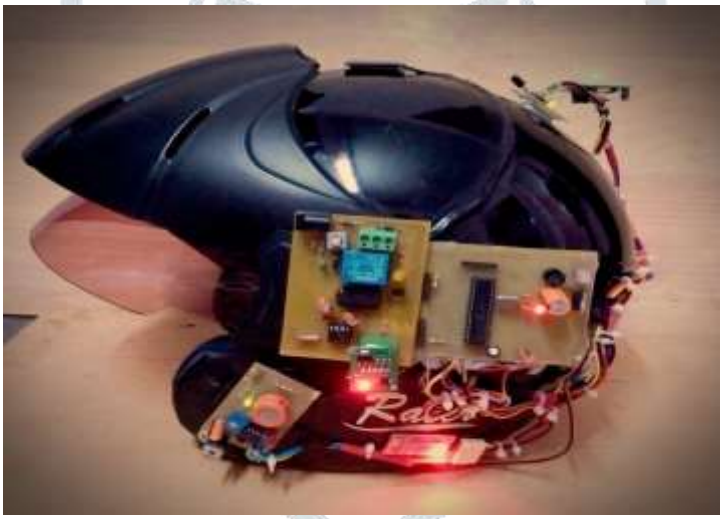

Figure. 1. Safety cap/Helmet

The figure above contains essentially microcontroller, Alcohol sensor, touch sensor button affixed to safety cap. Many embedded systems have significantly different designs depending on their functions and utilities. In this project design, the concept of structured modular design is adopted and the system is mainly composed of a single microcontroller, interfaced to sensors.
The microcontroller in the centre of the diagram forms the control unit for the entire project. A program integrated in the microcontroller helps the microcontroller act according to the inputs provided by the RF transmitter. These status is displayed in the LCD screen.

- Vehicle is controlled via signals from helmet unit. The helmet unit has sensor module to monitor helmet worn or not, alcohol detection all connected to RF transmitter.

- The vehicle unit has RF receiver. Based on RF signal received the vehicle starts and stops automatically.

IV. EXPERIMENTAL RESULTS

A. Alpha-numeric LCD Display:

In 8051 based embedded projects 16x2 LCD module is used commonly. It has 16 rows and 2 columns LCD dot matrix. it is available in 16 pin package having contrast adjustment function..

Figure.2. Detection of alcohol

If the motorcycle rider is found to consume alcohol, the alcohol sensor detects the alcohol and the message is displayed on LCD. The vehicle remains in the off state only.

Figure.3. Vehicle started message

Once the motorcycle rider is said to wear the helmet and no alcohol trace is detected, if both the condition is satisfied then the vehicle gets started. This message is displayed on the screen for demonstration purpose.
Safety cap worn is also displayed on the activation of touch sensor button used in the module.

V. CONCLUSION

To provide safety for online dispatcher this module is developed. In this project, we aim for accident avoidance by affixing different components in safety cap. The safety of the online dispatcher is taken for the consideration and this work is proposed.
For project demo concern, we have developed a prototype module. In future, this project can be taken to the product level. Additional features can be added such as GPS and so on.

VI. REFERENCES

- Prem kumar M, Rajesh Bagrecha, "An IOT based smart helmet for accident detection and notification", International digital library of science and research volume 1,issue 7,july 2017.

- Asian Journal of Applied Science and Technology (AJAST) Volume 1, Issue 5, June 2017 , 2017 AJAST All rights reserved. www.ajast.net Page | 30 ARMOR Smart Helmet for Alcohol Detection, Accident Detection and Notification using Internet of Things (IoT) R.G.Sushma1 and J.P.Himanshu2.

- Novateur publications international journal of innovations in engineering research and technology [ijiert] issn: 2394-3696 volume 2, issue 6, june-2015 "DRUNKEN DRIVE PROTECTION" systemalok Kulkarni, Sampada Sathe.

- International Journal of Scientific & Engineering Research Volume 2, Issue 12, December-2011 1 ISSN 2229-5518 IJSER © 2011 http://www .ijser.org " Drunken Drive Protection System" J.Vijay, B.Saritha, B.Priyadharshini, S.Deepeka, R.Laxmi

- "Smart Helmet" Ayush Garg Chitkara Institute of Engineering and Technology HIMUDA Education Hub Plot No. 3 & 4, Atal Nagar Barotiwala, Distt.Solan-174103 Himachal Pradesh, India Swati Gupta Chitkara Institute of Engineering and Technology HIMUDA Education Hub Plot No. 3 & 4, Atal Nagar Barotiwala, Distt.Solan-174103 Himachal Pradesh, India Harpreet Kaur

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[3].Indu.K.R, M-tech, Dept of Computer science engineering PES College of engineering, Mandya.