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SMART HELMET USING IOT

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Abstract

As we know India is second most populated country and has a large youth population, nowadays youth are fond of bikes and because of fashion, they neglect wearing helmet. Because of these, bike accidents are increasing day by day which causes deaths. Major deaths are due to head injuries which can be prevented by wearing a helmet. Drunk and drive cases are becoming more, which causes accidents and due to lack of negligence where an accident occurs and people are dying. These incidents made us develop a smart helmet using internet of things which reduce the accidents and risk of deaths, which has following features, the bike starts only if the rider wears a helmet if the rider is over drunken then the ignition will be automatically offed and if any accident occurs then through GSM modem it will send the message to the registered contact number by using a sim card.

KEYWORDS: -Accidents, GSM modem, Internet of Things, Ignition, Smart helmet.

1. INTRODUCTION

We have different ways of transportation for moving around the world, but motorcycles are the craziest vehicle in the young generation and as well as to the world. Motorcycle safety related to different features of the vehicle such as equipment model, design of the vehicle and as well as operator skill is special for motorcycle rider has towards the motorbikes. But they are the most unsafe road users, without a protective body, even the slightest careless can have serious injuries or may lead to the death of the rider. Not only because of the careless, but the death of the people may occur due to over speed, rash driving, over consumption of alcohol and violation of traffic rules. But the main reason for brain damage and this leads to immediate death, was the absence of helmet on the person. If the rider wears the helmet, 80% chances for avoiding head injuries and we can save a life from accidents. With the help of new technologies such as IoT, dangerous traffic situations will not occur. And modelling the motorcycles with the sensors, alert system to the rider and surroundings by a sending message, and to make it mandatory for the bike rider to wear a helmet during his/her ride. In a recent survey, every hour 4 people die in road accidents,70% due to not wearing a helmet.

2. RELATED WORK

The research work carried out here provided an insight into the development of IoT systems. The research area of the Internet of Things in recent years has experienced growth and development in an interdisciplinary manner. IoT is the inter-networking of physical devices, vehicles, buildings and other items embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. The traditional fields of embedded system, wireless sensor networks, control system, automation systems are together interconnected to form the IoT. That

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means the internet of things builds over the revolutionary success of mobile and internet network

3. IMPLEMENTATION

An emergency alert device that can connect with emergency services and family members in the event of an accident or fall from a 2-wheelers

The project seeks to follow the following steps:

 The main objective of this system is to design a helmet that provides safety to bike riders and to prevent over a drink and drive cases.

 It detects whether the rider met with an accident if he meets, then it alerts the guardian about the accident and sends SMS.

We are developing a smart helmet using the internet of things (IoT) technology, in which we ensure the safety of the bike rider. by avoiding road accidents of the bikers by, the system detects whether the rider is wearing a helmet or not if he wears then only the vehicle will start. The system of smart helmet is utilized to avoid motor bikes accidents and to recognize them at real time in order to maintain safety of human being. The IoT based-technology of smart helmet is a crucial issue, which improves safety of two-wheeler driving than, exist one.

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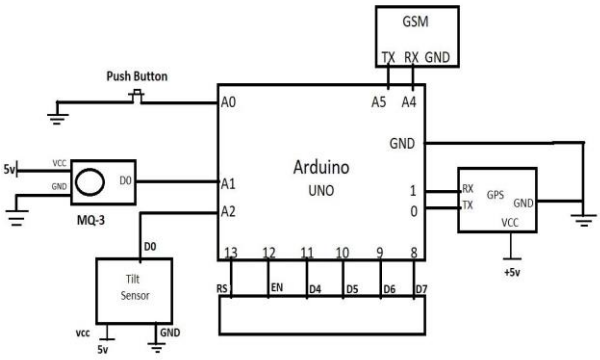

Block Diagram

4. EXPERIMENTAL RESULTS

The main aim of this system prevention from injuries when a person wearing this helmet meets with an accident. It avoids Drink and Drive cases. The results can detect the accident and it sends the notification to the registered contact with 90% accurate location so that the guardians will get to know the condition of the person and can able to give the proper medical treatment. The detection of an

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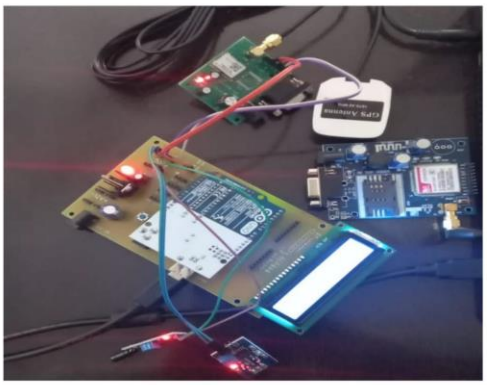
accident is based upon the results of tilting of a helmet, it matches with the helmet fall value and the threshold value. The results show that the system detected the presence of alcohol in the breath of the rider if the rider is over drunken then bike will not start. This system will process completely based on rider activities.

Prototype



5. CONCLUSION

The system designed provides safety of the riders, in case of accidents it will notify the registered contact and the location of the accident provides a timely safety measure. This also detects the consumption of alcohol and prevents drink and drive cases. This also ensures the person wears the helmet mandatorily.

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