URBI – NO – BIKE46

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ABSTRACT

The impact to motorcycle rider who involves in an accident without wearing a safety helmet is dangerous and can lead to fatality. The “URBI-NO-BIKE46” project is a special idea that comes from social responsibility toward the society by guarantee the motorcycle driving is safer than before. The “URBI-NO-BIKE46” is a type of protective headgear and provide safety for the motorcycle rider. In this regard, an attempt has been made by using Arduino microcontroller assisted RF transmitter and receiver unit. The “URBI-NO-BIKE46” will be implement the safety features like Infra-Red (IR) sensor and location tracking. The IR sensor is implemented to detects the presence of helmet on the head and to confirm helmet wearing by the rider. The LED light will keep blinking and buzzer will keep make an annoying sound if the rider still ignoring the safety regulations. An RF module can be used as wireless link for communication between transmitter and receiver. The idea of this work is to give an awareness of the importance in wearing helmet.

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INTRODUCTION

1.0 Project Overview

For project overview, the problem that need to solve is lack of safety awareness among riders especially in rural area as they tend to ignore to wear a safety helmet when riding a motorcycle. The solution to solve this problem is by make the bike can be start only when the rider wears the helmet. The project needs to detect the head of the rider when rider start the bike. The warning sound will be 'ON' only if the rider did not wear the helmet.

1.1 Introduction

Nowadays, motorcycle usage is rising in our society is much more common than cars as it is much cheaper. These motorcycles are usually amongst younger generations as it is used to go to work places and classes. But unfortunately sometimes there are some irresponsible motorcyclist that under appreciate their safety while riding the motorcycle. These irresponsible actions are such as not wearing helmets, not wearing bright colors clothing in the night, drive recklessly and it could harm themselves and other on the road. This would just put their life on the line as accidents could happen anytime. When accidents do happen to these irresponsible motorcyclists that do not take safety precautions, it could just lead to their death. Even though the location of these motorcyclists is not that far, they still have to take the safety route as they can prepare for what the

1.3 Objective

The main objectives for this project are as followed:

- To design a prototype of motorcycle helmet that has safety feature system using Arduino UNO as micro-controller.
- To develop a protection system in a helmet unit and bike unit by using a RF concept.

1.4 Scope of Work and Limitations

This project is specifically pointing towards college students that uses motorcycles to go to classes. This project focuses more on the sensor on the helmet to detect that the rider wears the helmet and so the motorcycle can be turned on. The motorcycle and the helmet also have a connection between them to prevent the user to fool the sensor that they have wear the helmet and ride off without wearing the helmet. This is why the connection between the RF Transmitter and RF Receiver is important that the helmet and motorcycle cannot be far away for a fixed distance such as 10 meters between the motorcycle and the helmet. The sensors play an important role to make sure that the rider to put on the helmet not just to turn on the motorcycle, but for their safety as well.

This project also have its own limitation in some aspect. The project is limited to prevent the injuries on the head. Even though it just prevent the head, but it is also a sensitive part of the body because it is where our brain located. Furthermore, this project also need its own helmet and motorcycle. It means this project need to build its own helmet and motorcycle with this project systems built in it. For the future upgrade, this project may also be built to easy to be implant inside any helmet and motorcycle. Because of it is using IR sensor, it also can also detect anything besides the user head. This can cause the user to fool this project system by put any object inside the helmet. This would beat the purpose of the project so they will ride the motorcycle freely without wearing helmet.