Smart Bike

Shreelekha Shelke¹, Nishad Thakre², Rajat Sadavarte³, Prof. Namarata Khade⁴

¹²³, Student, Department of Computer Science & Engineering, Priyadarshini Institute of Engineering & Technology, Nagpur, India
⁴Professor, Department of Computer Science & Engineering, Priyadarshini Institute of Engineering & Technology, Nagpur, India

ABSTRACT

Many times we came across the cases of bikes getting stolen from parking area. Or sometimes we forgot to remove the keys from bike by mistake. In these cases it is really difficult to get the bike back. This project is implemented to solve this purpose. Main purpose behind this project is of a bike security system using a password entered through keypad and android application. This system delivered message to emergency number which already stored by user in android application when wrong password is entered for 3 times. User can change the password any time they wish using a keypad. In this project for the security purpose, we will implement Arduino as a microcontroller in bike. Along with Facility of password using android application for accessing bike. After attempting wrong password more than 3 times message will be received by registered user. Working of a Arduino microcontroller gets starts when user throws valid password by using android app. Initially user is registered their information and entering choice password in a android application, whenever user wants to access their bike then arduino microcontroller accepts that password And therefore arduino microcontroller gets started and current will flow to output wires ended to self start. If any other person access a wrong password on the provided key pad implemented on bike then arduino microcontroller will not get started therefore current will not flow in output wires and hence bike will not get started, if unknown authority types wrong password more than 3 times than the arduino microcontroller sends SMS to the emergency no, provided to it. The password which is transmitted by android application is accepted by arduino microcontroller With the help of bluetooth module.

Keywords—Arduino, microcontroller, GSM

I. INTRODUCTION

Basically in this project we are implementing arduino chip as a microcontroller. After getting programmed we are implementing arduino microcontroller in the system of bike generally at output wires. Initially the current is present in input wires ended at key switch,when we insert key, key switch will open and this brings the presence of current in output wires, this output wires are directly connected to self start of bike. Now we are implementing our microcontroller in between key switch and self start, placing microcontroller directly connected to output wires. Working of a Arduino microcontroller gets starts when user throws valid password by using android application.

II. EXISTING SYSTEM

A security system is important for bikers now a day as the number of bike theft increases every day. Various security systems are available in the market with variety of functions, operating modes and features. Most of the systems are expensive which make bikers could not afford to have a security system that is efficient. The accessible security system has limitations. It provides basic function. The basic security system is very simple and not user friendly. Due to this reason number of researches have been carried out to improve bike security system by implementing radio frequency identification method [1].

A research that was carried out by Tatt Cheah described that a microcontroller can be interface input and output devices efficiently [2]. So a microcontroller is widely used in small and large instrument for control. Mobile phones have been used as a medium of communication between system and user. The design of the bike security system based on Global System for Mobile (GSM). The system was contained with a tracking system and used a mobile phone as the input [3]. The limitation of their system was the GSM was used for tracking the bike. It did not inform the user and deactivate the engine. This paper describe the development of bike security system that uses...
a microcontroller using android application and inform the owner through GSM module when theft occurs. This system protects bike from theft and provides a reliable security system to motorcyclist with accessible price. The system uses a microcontroller to control all operation including sending the message to user and perform action of accessing bike when user enter the right password through android application.

III. PROPOSED SYSTEM

The aim is to design and implement an advanced security system in the real time environment and to prevent bikes from theft.

This project presents a model that will provide security to the bike. Keeping in view the rapid need in security we are inspired to work on this project. The idea behind this bike security project is to meet the upcoming challenges of the modern world.

It consists of a microcontroller circuit (Arduino) and a GSM device, android application. This system can be used in a bike, with the battery. The microcontroller is programmed in advanced. the microcontroller process entered password, if password is invalid then and the message (password invalid) is sent as SMS by the GSM module to a known cell number.

IV. WORKING

Working of this project depends on android application and arduino microcontroller with relay machine.

1) Android Application
In this application user register their information, there are three modules.

   1) In first module there are two choices
   2) After this user will enter all the required information in second module
   3) Third module consists of user id and password.

Initially new user will register then enter all required information and will enter user id by own choice with own password.

If user already register then user have to perform login function and user will immediately jump to user id password page.

2) Arduino microcontroller

2) 1) For printing message we require
   2) LCD
   3) arduino chip
   4) breadboard
   5) male to male wires

In this project, when user type the password, it should be displayed at particular point, that’s why we are using LCD screen.

2) Relay Machine

The following figure shows how to control a AC light with arduino using relay module. It is a simple project and also dangerous as we are going to deal with high voltage 220v. Arduino cannot control this high voltage. Relay can do this job.

FIG: Relay Machine

Basically in this project we are implementing arduino chip as a microcontroller. After getting programmed we are implementing Arduino microcontroller in the system of bike generally at output wires. Initially the current is present in input wires ended at key switch, when we insert key, key switch will open and this brings the presence of current in output wires this output wires are directly connected to self start of bike. Now we are implementing our microcontroller in between key switch and self start, placing microcontroller directly connected to output wires. Working of a Arduino microcontroller gets starts when user throws valid password by using android application. Initially user is registered their name and their choice password in android application, whenever user wants to access their bike then user have to type that password using a android application. If password is correct then Arduino microcontroller accepts that password And therefore Arduino microcontroller gets started and current will flow to output wires ended to self start. If any other person access a wrong password on the provided key pad implemented on bike then arduino microcontroller will not get started therefore current will not flow in output wire wires and hence bike will not get started, if unknown authority types wrong password more than 3 times then the arduino microcontroller sends SMS to the emergency no. provided to it.
The password which is transmitted by android application is accepted by arduino microcontroller With the help of Bluetooth module.

V. RESULT

When the unauthorized person wants to access the bike by entering the wrong password the system notify to owner by sending SMS to emergency number. The system alert message send on owner mobile number within bluetooth range, user will access the bike through android application with the help of arduino microcontroller.

VI. CONCLUSION AND FUTURE SCOPE

This is a unique method of designing and implementing a low cost, compact theft control system for bike. This system is an final threat to vehicle thieves. By installing this system it is very difficult to access by an unknown person since it is based on GSM shield. In future there is no doubt, that all of the bikes will be embedded with this unique kit. In above features we can also add extra feature like pattern recognition to as certain more security of the bike. This System design can be made more flexible in future to support camera, web based tracking software. Ideally this system could be made more convenient and secure with the use of satellite modems instead of cell phone as tracking device because the system may fail when there is no network coverage area.

REFERENCES