



e-ISSN: 2319-8753 | p-ISSN: 2320-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 9, Issue 9, September 2020

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.512

 9940 572 462

 6381 907 438

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Car Door Unlocking System Using ATMEGA328

Sharanabasappa R.R¹, Aishwarya Bhusari², Sayali Jagdale³, Amruta Ingale⁴

Associate Professor, Department of Electronics and Telecommunication, SGI College of Engineering, Atigre, Shivaji University, Kolhapur India¹

B. E Student, Department of Electronics and Telecommunication, SGI College of Engineering, Atigre, Shivaji University, Kolhapur India²

ABSTRACT : In this paper we describe the design and evaluation of car door unlocking system. In day to day life many of us face problems in locking and Unlocking the car by losing the car keys or forgotten the car keys on the inside of car. So, to resolve this matter with the help of embedded system we execute locking and unlocking process by using smartphones. This paper manifests the purpose of managing the vehicle door using mobile Bluetooth or

KEYWORDS: Evolution, Embedded, Execute, manifest, purpose, Android.

I. INTRODUCTION

In this world every industry rapidly evaluates in the technology. automobile industries are also not behind in this exception. nowadays different types of automobile companies launch different cars which having advanced technology and advanced features so purchasing of car by people increasing day by day. everyone has a car purchasing a car is a big investment so people are really concerned about advanced technology and automobile industry also provide user-friendly and advanced features to their customer. imagine the automobile industry provide a facility to the word vehicle locking locking by using mobile Bluetooth mobile Bluetooth technology it will be a great achievement and advantage in in terms of human energy and time saving it will be free of cost also icon have you money at least it will be a great achievement and advantage in the terms of the human energy and time saving it will be free of cost that mean no cost is applicable. It can be activated in safe mode since the vehicle Still in lock or unlock condition. In this project the car locking and unlocking implemented by Bluetooth technology using smartphones. the system is made by addition of hardware and software. using this system, you can easily access your car that is lock and unlock the car door with the help of our smartphones. sometimes we forgot our car keys inside the car and we lock the door in that time we don't have to worry only a single tap on our smartphone will open the car window and owner will easily access their car keys. so now we carry our keys and keep it safely and if we lost the keys, we can't suffer anymore that problem because the single tap on our smartphone help us every time in this situation. this system is developed with the help of Bluetooth device, microcontroller, digital kit, application as an interface, Arduino compiler coding. this system is also having a speciality that is it allows only the authorised person to access this system. this project not controlling by any sensors for transmitters but also using Bluetooth which is the very simple communication medium. The remote in this project is an android mobile device which has inbuilt Bluetooth module. The Bluetooth is a serial communication medium through which we can connect our mobile Bluetooth to the second Bluetooth which is present in our car.

II. RELATED WORK

1] Proposed Work:

The car door unlocking system is uncomplicated , elementary and helpful for use , it gives more comfort. In this system we use ATmega 328 Microcontroller is interfaced with Bluetooth module. Themicrocontroller-based Door locker is an access control system that allows only authorized persons to access a restricted area. And Bluetooth which is a very simple communication medium in the present day. In our system we use the Bluetooth that is HC-05. The Bluetooth is a serial communication medium through which we can connect our mobile Bluetooth to the second Bluetooth which is present in our car. By transmitting a Bluetooth signal from smart phone , the system could access the car which is locked / unlocked condition. Unlock and lock the car doors with help of our smart phone so that the owner will not

have to search for their keys their pockets or bags and simply access their car by tapping the smart phone screen and also, we get car key

It is also beneficial because of the security purpose if the small kids stuck in the car and door gets locked or kids can't open the door so using this system just tapping our mobile screen, we open the car door and stuck out the kids safely. So that for the security purpose it is also a good system. Now a days if the car keys we forgot inside our car or by mistakenly drop the keys inside the car so there is no any technic that we unlock the door , every time we want to call mechanic. so using this system we unlock the car door and got our keys immediately or their should not necessary to call the mechanic , and also every time mechanic is not available so just tapping on our mobile smart phone screen we got our car keys that we by mistakenly dropped in our car or forgotten in our car.

2] As per review paper :

As per [1][2][3] Vehicle security and making advancement in car features and its technology have been major concern in automobile industries. Many of us face difficulties in unlocking locking the car upon losing the car keys. So, to solve this issue, an embedded system will be designed and implemented in a real car that will provide feature of unlocking and locking the car using a smart phone. This paper shows the function of controlling the vehicle doors using mobile Bluetooth and Android application. This technology will help the user to access his/her car with an ease from a distance of 10 meters away from the vehicle through Mobile Bluetooth. Here, Android will be used because it provides a vast platform to the developers and its devices are used widely.

III. METHODOLOGY

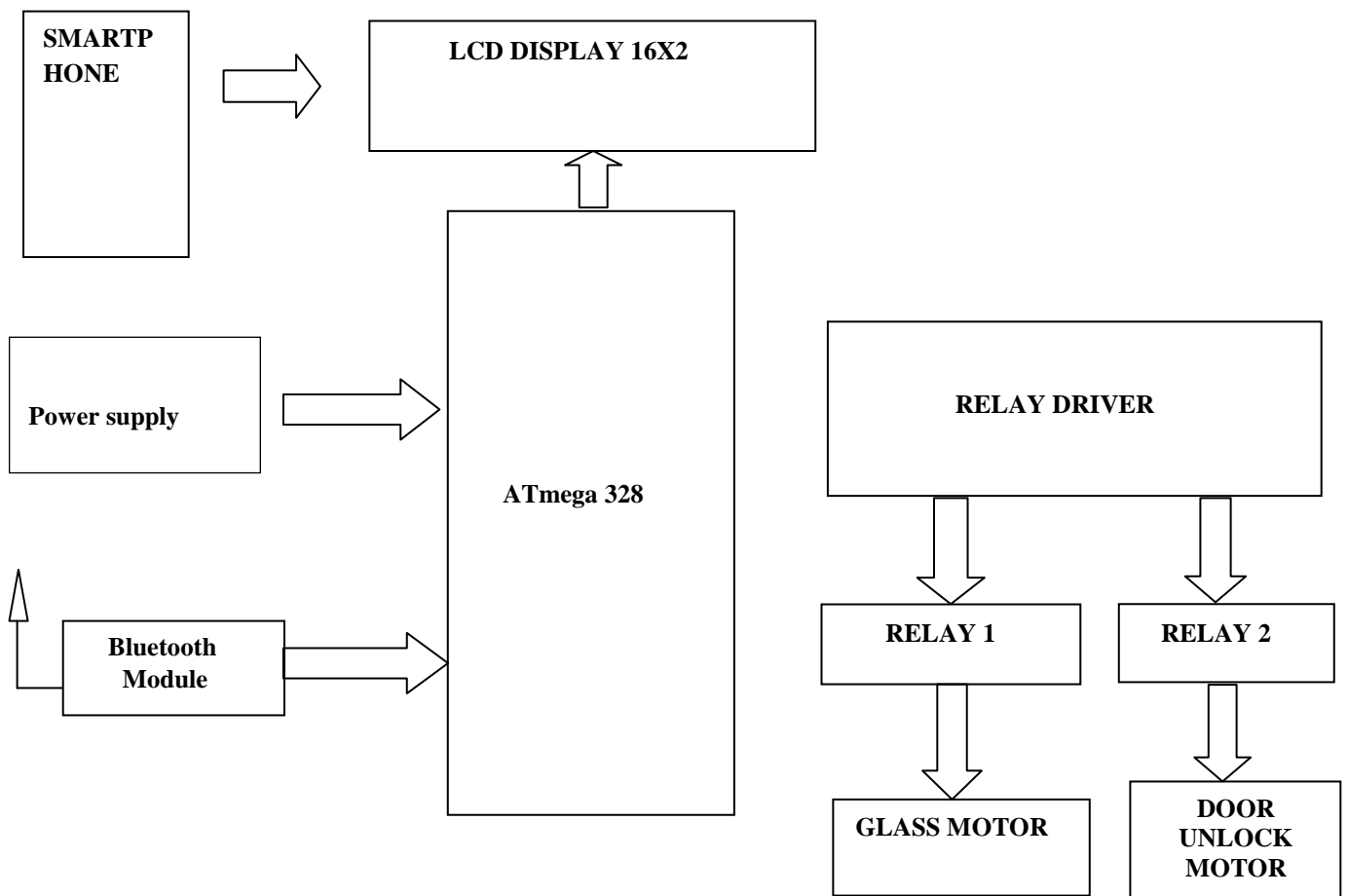


Fig.1.1.Block diagram

In the car door unlocking system there are different types of components are used. that is smart phones, power supply, LCD display 16x2, Bluetooth module HC-05, ATmega328 Microcontroller, relay driver, glass and door unlock motor etc. Firstin the mobile phone we use Bluetooth terminal application for connection of the Bluetooth module. we installed the microcontroller and Bluetooth module in the car. Power supply and LCD display is connected to Microcontroller which having a Unidirectional connectivity. Bluetooth module is connected to the microcontroller as a input which is having a bidirectional connectivity and the output sidethe relay driver circuitry is connected to microcontroller which having unidirectional connectivity. In the relay driver circuitry two relays are used that is relay1 and relay2. relay1 is connected to the glass motor and relay2 is connected to the door unlock motor.

Now first we connect our mobile Bluetooth to the Bluetooth module using Bluetooth terminal application. For locking and unlocking the car by sendinginstruction from user mobile phone to the Microcontroller installed in the car via Bluetooth module. We know that Bluetooth which is a very simple communication medium in the present day. The remote in this project is the android mobile device which this project is controlling our car using an inbuilt Bluetooth module. The Bluetooth is a communication medium through which we can connect to devices here we have inserted a Bluetooth module which is connected to our phones Bluetooth via Bluetooth terminal application. Using Bluetooth terminal application, we send commands and Bluetooth will communicate over it. The Bluetooth module transmits the command to the Microcontroller. The main part of controlling the car is played by the ATmega 328. Microcontroller work on the command and checking the input condition and then signal transmitted to the relay circuitry. Relay will receive the signal. Relay is device which acts as switch and use to control the 230V AC supply. Then relay circuitry switching after checking the condition of received signal. If the received signal is related to the glass motor relay1 will switch on and relay2 get cut off. and if the received signal is related to door unlock then relay2 will switch on and rela1 will cut off.

LCD display is used for showing the condition of the or the result for door locking and unlocking. LCD display use here 16 character by two line display. LCD character is displayed in 5x7 pixel matrix. LCD has two registers command and data. Command registers stores the command instructions given to the LCD. The data register stores the data to be displayed on the LCD.

IV. EXPERIMENTAL RESULT AND DISCUSSION

This proposed system will help, if we forgot our car keys inside the car, it can make helps to get our car keys back. This system is also provided security if small baby stuck in the car and the car gets locked and baby can't open the door then using this system, we will take out the baby safely outside the car.



Fig 1.2- LCD Display

In future, we can apply also the following advance techniques to make the project better.

- It can also be applied on different types of smartwatches.
- Development can be done to control ignition, music system, and other types of common features.
- Advancement in app to locate the car via GPS can be added.
- Provide the location of the car in a parking lot in terms of light blinks upon request from the user mobile phone.
- Using database, we can add a thumb impression of an owner.

V. CONCLUSION

Using android application, we implement wireless-based car locking system and designing is done through this project. We will operate this system through Bluetooth device. Using Bluetooth device, we can successfully lock or unlock the car door. This project is feasible for the following function and which are beneficiary of

- Various control mechanism away from vehicle
- Low cost
- Time saving
- Comfortable to user
- Secure

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ISSN INTERNATIONAL
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