The Journal of Multidisciplinary Research (TJMDR)

Content Available at www.saap.org.in ISSN: 2583-0317

Secure bike start

Mathe Rama Krishna[1], Kollikondla Praneeth Kumar[2]

[1]Asst. Professor, Department of CSE, Adikavi Nannaya University Rajahmundry

[2] Department of Computer Science and Engineering, University college of Engineering, Adikavi Nannaya University

Received: 04 Feb 2021 Revised: 15 Feb 2022 Accepted: 25 Mar2022

Abstract

This project is titled "Secure Bike Start" with Arduino. This project used to propose a system that describes the concept of controlling vehicle theft by using the method of fingerprint-based authentication and which alerts the user by providing the notification to the user. This proposes a system that identifies the authenticated person for the vehicle and starts up the vehicle when the person is approved by the FingerPrint Module. If any unauthorized access to the vehicle is to be applied then the system is fully locked and there is no way to move the vehicle from the place of parking. The capability to start-ups the vehicle is initiated by the Positive Charge from the Finger Print Module. Hence, the Ignition System control is based on authentication. The existing system provides security but there is no locking system. The proposed system describes the security of the vehicle as well as locking the whole Vehicle system by the way of an authentication basis.

Keywords: Secure Bike Start, fingerprint-based authentication.

***Corresponding Author**

Kollikondla Praneeth Kumar

Produced and Published by

South Asian Academic Publications

Introduction

Vehicle safety and security has been a subject of niceanalysis over the years, thanks to the escalating vehiclestealing cases reportable everywhere the planet. Ancientlock and key has perpetually been less reliable thanksto security concern. A 2-wheeler will solely be started

once it detects distinctive Phone identity and fingerprintapportion to that and notifying owner by SMS

regarding the stealing try of the vehicle, permitting userto manage the system. Even with improved security systems and exaggerated awareness among vehiclehouse owners, vehicle stealing has not nevertheless

been checked right down to a major live. As a result ofthe pricey nature of motorcars, house owner's square measure currently being forced to pay additional andextra money on insurance and different policies.

Currently, {the solely the sole} style of safety productwide obtainable for motorcycles square measure physical locks only like padlock, wheel lock, chain lockand different physical lock.

Existing System

Vehicle ignition using Fingerprint sensor, existing system using an AVR Microcontroller for ignite the vehicle. AVR Microcontroller is a 16-bit resolution microcontroller & high expensive. Existing System was only works on very High-End car models.

Proposed System:

The purposed system provides to start the vehicle engine and ignite also. The proposed system the two wheeler's system isimplemented using finger print. A system which

describes the concept of controlling vehicle thefting byusing the method of fingerprint based authentication. This system provides the more accurate scheme recognition system. keyless ignition as well as alert through SMS via GSM.

Based on theproposed system, the vehicle can be start-ups provide using the finger print authentication of the vehicle user. Hence,the restriction of startup the vehicle is implemented. Dueto that, the unauthorized person doesn't start-ups thevehicle directly. The system ensures

the finger print ofvehicle owner and analyze the finger print whenever thesystem should be ready to start. The ignition systemshould proceed the vehicle movement when the result ispositive from the fingerprint module or else it shouldlock the vehicle. The system which includes theembedded systematic way of designing to configure thevehicle.

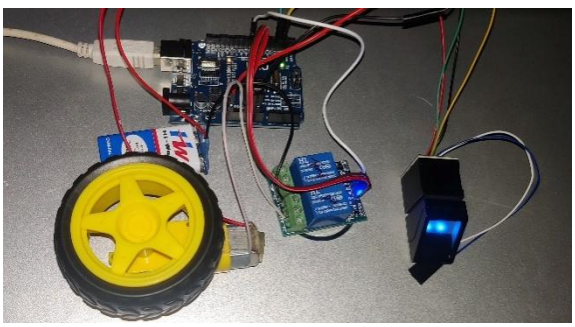
It can implement 2 wheelers, 4 wheelers and even heavy load vehicles also.

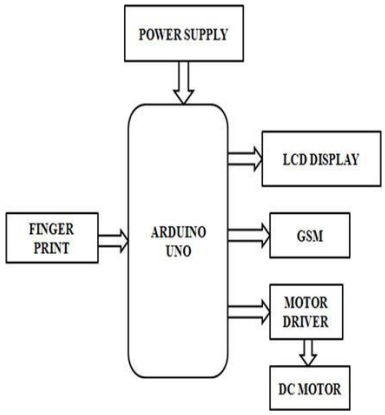
Components:

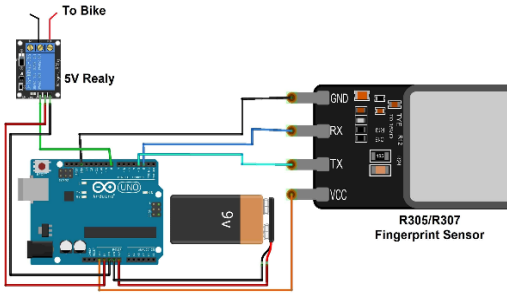
- Arduino UNO
- Fingerprint Scanner Module(R307)
- 2 Channel Relay Module
- Jumper Wires
- 15 volts DC adapter

Working Process:

- The starter circuit of the vehicle is controlled using the Arduino UNO. A fingerprint sensor is coupled with the Arduino UNO for biometric authentication. The starter circuit is initially open. When the user places his finger on the fingerprint sensor, his fingerprint is authenticated. After successful authentication, the Arduino UNO sends a trigger to the relay which closes the starter circuit to start the engine. After successful drive the engine and the Arduino UNO are simultaneously turned off which resets the program in the microcontroller



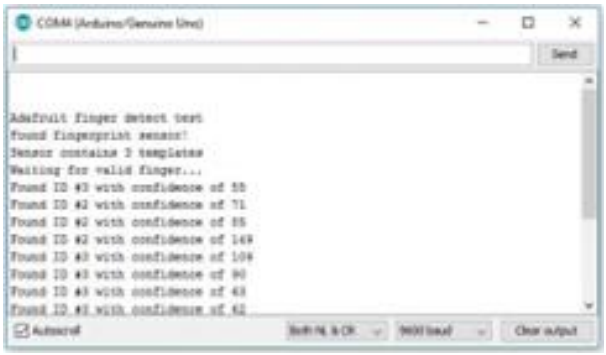




Hardware Implementation

VII. RESULTS AND DISCUSSION

The performance of the projects is tested with differentperson's finger prints and also finger prints at differentsituations and timings.



Thesystem can identify the mismatched finger print from a largedatabase, thus protect the two wheeler form theft.

PRACTICABLENESS STUDY

The practicableness study deals with all the analysis thattakes up in developing the project. Every structure hasgot to be thought of within the developing of the project,because it has got to serve the tip user during a userfriendlymanner. One should recognize the sort of data

to be gathered and therefore the system analysis includecollection, Organizing and evaluating facts a

couple ofsystem and its setting. The main objective of the system
analysis is to check the prevailing operation and to betold and achieve the process activities. Conniving cloudspace standing at a given refresh amount throughwindows application must be analyzed well. Cloudareas should be classified supported their processability. In keeping with their process and storage power,the partial job must assign to them. The small print areaunit processed through cryptography themselves. It'll becontrolled by the programs alone.

A) ECONOMIC PRACTICABLENESS

The organization has got to obtain a private pc with akeyboard and a mouse, this can be an immediate price.There are a unit several direct edges of covering the
manual system to processed system. The user may begiven responses on asking queries, justification of anycapital outlay is that it'll scale back expenditure orimprove the standard of service or merchandise thatsuccessively is also expected to supply the exaggerated
profits.

B) OPERATIONAL PRACTICABLENESS

The planned system accessing method to solves issueswhat occurred in existing system. This daily operationsof the organization may be match into this technique.Principally operational practicableness ought to embodyon analysis of however the planned system can affectsthe structure structures and procedures.

C) TECHNICAL PRACTICABLENESS

The cost and profit analysis is also all over thatprocessed system is favorable in today's fast-pacedworld. The assessment of technical practicablenessshould be supported a top level view style of the systemnecessities in terms of input, output, files, programs andprocedure. The project aims to assign multiple nodeswhen the duty is split in keeping with the nodes

Conclusion

This work is a well operating prototype of a fingerprint-based vehicle staring system. The system intelligent agents were able to communicate well and appropriate output is given under user input. The system requests for user's finger, process it and give appropriate output based on if the finger is stored in the fingerprint module or not. The system is also able to enrol new user's finger at request but prompt for pass code before it could be done. Pass code editing can also be done on request in the system. Hence, fingerprint technology improves the security of an automobile making it possible for the car to be used by only authorized users. Therefore, implementing this system on vehicles makes the achievement of our car security system comes in a cheap and easily available form.

Biometric recognition systems present security and convenience than conventional methods of personal recognition

References

[1] R.M.Vithlani, SagarShingala and Dr. H.N.Pandya, BiometricAutomobile Ignition Locking System, International Journal ofElectronics and Communication Engineering and Technology, 7(5),
2016, pp. 28–37

[2] Shanmughanathan J, B. C. Kavitha, "Tracking and Theft PreventionSystem for Two wheelers using Android", International Journal ofEngineering Trends & Technology (IJETT)-volume 21 Numbers 7-March
2015, page no. 355-359.

[3] Prashantkumar R., Sagar V.C., Santosh S., SiddharthNambiar,"Two
Wheeler Vehicle Security System", International Journal ofEngineeringSciences& Engineering Technologies (IJESET), Dec2013,
Volume 6, Issue 3, pp: 324-334.

[4] Nitin Kumar, Jatin Aggarwal, ChaviSachdeva, Prerna Sharma, MonicaGuar, "Smart Bike Security System", International Journal of Educationand Science Research Review, Volume-2, Issue-2, April-2015, Pg.No.28-32.

[5] R.Ramani, S.Valarmathy, Dr. N.SuthanthiraVanitha, S.Selvaraju,M.Thiruppathi, R.Thangam, "Vehicle Tracking & Locking System Basedon GSM & GPS", I.J.Intelligent System and Applications, 2013,09,86-93.

[6] Sukeerti Singh and AyushiMhalan, "Vehicle Theft Alert System usingGSM", Int. Journal of Engineering Science and Technology (IJEST), May2013

[7] Z. M. Win and M. M.Sein, "Fingerprint recognition system for low qualityimages, presented at the SICE Annual Conference, Waseda University,Tokyo, Japan, Sep. 13-18, 2011.

[8] UpendranRajendran and Albert Joe Francis, "AntiTheft Control SystemDesign Using Embedded System", Proc. IEEE, vol. 85, page no. 239- 242,2011