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A Smart Secured License based Vehicle Driving System

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***Abstract*: This paper presents methodology for checking driver license within the automobile by victimization image process method. Approaches from the progressive system, that work properly in controlled situations, are valid victimization bit of sequences and while not tougher realistic conditions. The projected system has been designed for realistic situations considering totally different cases of occlusion, illumination changes. By this methodology we have a tendency to are stopping vehicle stealing and additionally preventing from most of the accidents created by license less driver. The role of the driver's license plays a crucial role in checking the driver's eligibility. And hence the tactic uses the main points of the license of the driving force for the reduction of automobile stealing. For style and validation, a camera information is employed. The biometric sensors plays a significant role of individualism. The iris matching is one such sensing methodology to test the individuality. The results clearly show that the projected system works properly in difficult situations together with nearly total occlusions, illumination changes, and totally different weather.**

***Keywords*: RFID tag, RFID reader, Car theft, Driver's license, IR, iris comparison.**

1. Introduction

In the contemporary world the road communication has become the key half within the transportation. In nowadays usage of automobile transportation has become high and additionally the car stealing and therefore the drivers while not license has become the key concern in our country. within the statistics 2017, motorcar stealing rate for Asian country was thirteen cases per one hundred,000 population. Motor vehicle stealing rate of Asian country hyperbolic from seven. 2 cases per one hundred, 000 population in 2004 to seventeen cases per one hundred,000 population in 2017 growing at a mean annual rate of half dozen.95 %. And additionally to it rate of drivers driving the automobile while not license ends up in the deaths of the innocent individuals. Out of the five hundred thousand odd & nbsp; accidents &n bsp; across the country, near four hundred thousand of them concerned individuals with a daily license whereas the remainder involved those with a learner's license or while not a license. In alternative words, one out of each five accidents concerned those while not a daily license. Out of the accidents that concerned persons while not a license, twenty-five occurred in Madhya Pradesh and seventeenth in province. So, the govt. has no advanced technique to prevent the automobile stealing and therefore the drivers while not the license that is outcome of our project.

2. Methodology

In our project the IR sensor is used, which can find whether or not the person is sitting on the driving force seat and also the details are sent the microcontroller(ATMEGA-328) and if the IR sensing element detects the person then he must insert the key. The user must keep the RFID tag within the RFID reader and the driving force's license details is fed therein and it reads the main points of the driver and send the details to the atmega controller. From the ATMEGA-328 the command is sent to the camera and it'll capture the iris of the driving force and so the captured iris will be compared with the iris that fed within the RFID tag. If each the main points are matched, then the automobile mechanism will activate the car and if the details doesn't match then there'll be a buzzer which can offer the alarm. By this setup we will check the driver's license.

3. Block diagram

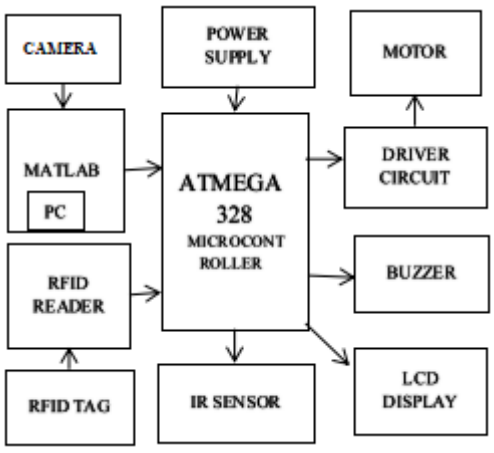

Fig. 1. Functional block diagram of the proposed system

A. Microcontroller- Atmega 328

The ATmega328 is a single-chip microcontroller created by Atmel in the mega AVR family (later Microchip Technology acquired Atmel in 2016). It has a modified Harvard architecture 8-bit RISC processor core. The Atmel 8-bit AVR RISC-based

microcontroller combines 32 kB ISP flash memory with read-while-write capabilities, 1 kB EEPROM, 2 kB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter (8-channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal oscillator, and five software selectable power saving modes. The device operates between 1.8-5.5 volts. The device achieves throughput approaching 1 MIPS per MHz. The superior silicon chip 8-bit AVR RISC-based microcontroller combines 32KB ISP nonvolatile storage with read-while-write capabilities, 1KB EEPROM, 2KB SRAM, twenty three general purpose I/O lines, thirty two general purpose operating registers, 3 versatile timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI interface, 6-channel 10-bit A/D convertor (8-channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal generator, and 5 package selectable power saving modes. The device operates between one. 8-5.5 volts. By execution powerful directions during a single clock cycle, the device achieves throughputs approaching one unit per MHz, equalization power consumption and process speed.

Fig. 2. Microcontroller-ATMEGA-328

B. *RFID reader*

A frequency identification reader (RFID reader) may be a device wont to gather info from associate RFID tag, that is employed to trace individual objects. Radio waves are wont to transfer information from the tag to a reader. A radio-frequency identification system uses tags, or labels attached to the objects to be identified. Two-way radio transmitter-receivers called interrogators or readers send a signal to the tag and read its response. RFID tags can be either passive, active or battery-assisted. Connectivity Devices Identify, Locate, Authenticate, and Engage Endpoints. RAIN RFID readers and gateways are devices that power and communicate wirelessly with tags and deliver tag data to operating-system software. Signaling between the reader and the tag is done in several different incompatible ways, depending on the frequency band used by the tag. Tags operating on LF and HF bands are, in terms of radio wavelength, very close to the reader antenna because they are only a small percentage RFID may be a technology similar in theory to bar codes. However, the RFID tag doesn't should be scanned directly, nor will it need line-of-sight to a reader. The RFID tag it should be inside the vary of associate RFID reader, that ranges from three to three hundred feet, so as to be browse. RFID technology permits many things to be quickly scanned and allows quick identification of a specific product, even once it's encircled by many alternative things. RFID tags haven't replaced bar codes thanks to their price and therefore the must individually separately singly severally one by one on associate individual basis RFID technology uses digital information in an RFID tag, that is created of integrated circuits containing a little associate antenna for transferring info to an RFID transceiver. the bulk of RFID tags contain a minimum of associate microcircuit for modulating and demodulating frequency and an antenna for transmission and receiving signals. Frequency ranges vary from low frequencies of a hundred twenty-five to 134 rate and a hundred and forty to 148.5 kHz, and high frequencies of 850 to 950 Mc and a pair of.4 to 2.5 GHz. Wavelengths within a pair of 4 gigahertz vary are restricted as a result of they will be absorbed by water identify each item.

Fig. 3. RFID reader

C. *RFID tag*

RFID tags are a sort of pursuit system that uses sensible bar codes so as to spot things. RFID is brief for “radio frequency identification,” and in and of itself, RFID tags utilize often technology. RFID tagging uses small radio frequency identification devices to track and identify objects. An RFID tagging system includes the tag itself, also known as a transponder; a scanning antenna and receiver, often combined into one reader, also known as an interrogator; and a host system application for data collection, processing and transmission. RFID Tag is a UHF Gen2 Tamper evident long range passive tag. It is ideal for Automatic Vehicle Identification (AVI), Electronic Toll Collection (ETC), Electronic Vehicle Registration, parking & security access applications. RFID tags, a technology once limited to tracking cattle, are tracking consumer products worldwide. Many manufacturers use the tags to track the location of each product they make from the time it's made until it's pulled off the shelf and tossed in a shopping carts These radio waves transmit data from the tag to a reader, that then transmits the data to associate degree RFID malicious program. RFID tags are oftentimes used for merchandise, however they will even be wont to track vehicles, pets, and even patients with Alzheimer’s malady. associate degree RFID tag may additionally be referred to as an RFID chip. There are 2 main types of RFID tags: battery-

operated and passive. because the name suggests, battery-operated RFID tags contain associate degree on board battery as an influence provide, whereas a passive RFID tag doesn't, instead operating by exploitation magnetic force energy transmitted from associate degree RFID reader. Battery-operated RFID tags may additionally be referred to as active RFID tags. The frequency used affects the tag's vary. once a passive RFID tag is scanned by a reader, the reader transmits energy to the tag that powers it enough for the chip and antenna to relay data back to the reader. The reader then transmits this data back to associate degree RFID malicious program for interpretation. There are 2 main varieties of passive RFID tags: inlays and exhausting tags. Inlays are sometimes quite skinny and might be stuck on varied materials, whereas exhausting tags are even as the name suggests, manufactured from a tough, sturdy material like plastic or metal. Passive RFID tags are a far a lot of economical alternative than active RFID tags. whereas a passive RFID tag doesn't need an immediate line of sight to the RFID reader, it's a far shorter scan vary than a full of life RFID tag. they're little in size, light-weight, and might doubtless last a period.

Fig. 4. RFID tag

D. IR sensor

An infrared detector is AN device, that emits so as to sense some aspects of the environment. AN IR detector will live the warmth of an object moreover as detects the motion. These varieties of sensors measures solely infrared emission, instead of emitting it that's known as a passive IR detector. typically, within the spectrum, all the objects radiate some variety of thermal radiations. These varieties of radiations are invisible to our eyes, which will be detected by an infrared detector. The electrode is solely AN IR crystal rectifier (Light Emitting Diode). A passive infrared sensor is an electronic sensor that measures infrared light radiating from objects in its field of view. They are most often used in PIR-based motion detectors. An infrared sensor is an electronic device, that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measures only infrared radiation, rather than emitting it that is called as a passive IR sensor. Infrared technology addresses a wide variety of wireless applications. The main areas are sensing and remote controls. In the electromagnetic spectrum, the infrared portion is divided into three regions: near infrared region, mid infrared region and far infrared region. Infrared waves are invisible to human eyes. The wavelength region of 0.75μm to 3 μm is called near infrared, the region from 3 μm to 6 μm is called mid infrared and the region higher than 6 μm is called far infrared. This detector is analogous to human's visionary senses, which may be wont to notice obstacles and it's one among the common applications in real time. This circuit contains of the subsequent part. In this project, the transmitter section includes AN IR detector, that transmits continuous IR rays to be received by AN IR receiver module. AN IR output terminal of the receiver varies relying upon its receiving of IR rays.

Fig. 5. IR sensor

E. DC motor

Electrical DC Motors are continuous actuators that convert electricity into energy. The DC motor achieves this by manufacturing endless angular rotation that may be wont to rotate pumps, fans, compressors, wheels, etc. A DC motor is meant to run on DC power. When a current carrying conductor is placed in a magnetic field, it experiences a torque and has a tendency to move. In other words, when a magnetic field and an electric field interact, a mechanical force is produced. A motor is an electrical machine which converts electrical energy into mechanical energy. Construction of a DC motor is same as that of a DC generator. The DC Motor or DC Motor to relinquish it its full title, is that the most typically used mechanism for manufacturing continuous movement and whose speed of rotation will simply be controlled, creating them ideal to be used in applications were speed management, servo kind management, and/or positioning is needed. A DC motor consists of 2 components, a "Stator" that is that the stationary half and a "Rotor" which is the rotating part. The result's that there are essentially 3 kinds of DC Motor offered. 2 samples of pure DC styles are archangel Faraday's homo polar motor (which is uncommon), and also the bearing motor, that is (so far) a novelty. out and away the foremost common DC motor sorts are the brushed and brush less types, that use internal Associate in Nursing external commutation severally to form an oscillatory AC current from the DC source-so they're not strictly DC machines in an exceedingly strict sense. The brushed DC Motor is employed, which is able to operate within the ratings of 12v DC zero.6A which is able to drive the flywheels so as to form the mechanism move. This type of motor produces a force field wound rotor (the half that rotates)

by passing an electrical current through an electric switch and carbon brush assembly, thence the term “Brushed”. The stator coils (the stationary part) force field is made by victimization either a wound stator field coil or by permanent magnets. typically brushed DC motors are low-cost, tiny and simply controlled.

Fig. 6. DC motor

4. Experimental results

The results obtained from the chassy with the motor are shown below,

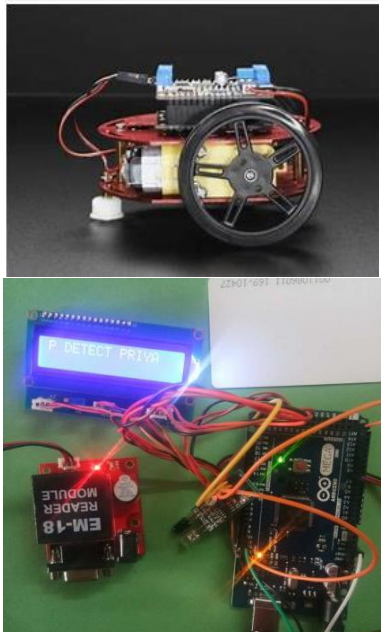

Fig. 7. Experimental results (Hardware setup)

5. Conclusion and future scope

In this paper we introduced a system for the reduction in the car theft. The role of the driver’s license plays a major role in the proposed system and hence it also refers with the eligible drivers and the car theft in the society. By the usage of such system the car theft can be stopped totally. Only the drivers can use the car by the usage of the proposed system. This system improves the overall driving system.

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