

Biometric Based E-License Sysytem

Snehal Khade, Mayur Mali

^{1,2}*Dept. of Electronics and Telecommunication Engineering,*

Dhananjay Mahadik Group of Institutions, Vikaswadi

Shivaji University, Kolhapur (India)

ABSTRACT

Driving license system is a very difficult task for the government to monitor. In this project, all the citizens' images will scan and recorded. The main objective of this project is to prevent non-licensees from driving and also details of person will be displayed, a new system is proposed. Fingerprint identification is one of the most popular and reliable personal biometric identification methods. Most important and very unfailing person recognition system is biometric verification. This system consists of a some amount of memory capability to store the thumb print of particular person. The particular candidate's thumbprint reader is to be stored in the memory.

Keywords—*Arduino ATMEGA328, Computer, Fingerprint Module, GSM, LCD, etc.*

I.INTRODUCTION

For a country comprising with almost one sixth of the global population keeping the track of each person is very essential. Developed countries like USA, England, and Germany etc. Have implemented 24 hours traffic surveillance but the cost incurred is too high. Instead of that it is necessary to implement "finger print based wireless terminal for driving license verification". The fingerprint scanning is most convenient method and has lot of advantages, such as its unique, permanent, good, anti-fake and easy to use. So it is recognized increasingly by people. Recently while "Adhar card" was introduced the finger prints were collected. The data of fingerprints of each person is stored. So we have an advantage that the database is already available. The most prominent feature is that we can track the previous violations so that the data can be used while dealing with the situations like "high alert". The working conditions in which it is to be used creates most of the complications as we can't make the device delicate and bulky. So the wireless technology is used so that the device can be used as a handheld device which enhances its usability. License is used for checking whether person is eligible to drive the vehicle or not. License is valid for 18 years and above in India. If person driving the vehicle is found without license legal action is taken against it. Under law enforcement person can be punished. E-licence in accident case we can already manage the blood group of the person also we can identify the dead body.

II.LITERATURE SURVEY

As the driving license system is a very difficult task for the government to monitor. In this project, all the citizen's images will scan and recorded. Whenever a citizen crosses the traffic rules, the police can scan his

image and can collect penalty / fine from the defaulter. Using this method, the police can track the history of the driver. This biometric based driving license monitoring system is very easy and convenient to monitor [1].

In this project, we use the Finger print authentication scheme which is a non-imitable biometric authentication scheme. While issuing the license, the specific person's finger print is to be stored in the card. At the time that person's details are fully stored in that database. So at anywhere the person should place on his finger on the finger print reader. [2].

The proposed system was designed on keyless car instead of going with key based authentication we are providing with biometric based authentication. A person, who wishes to drive the vehicle, should verify with their face reorganization and finger print whether he was having license or not, once verification done then ignition unit of car will start automatically. If the person is not verified in the Face recognition the alarm unit will be on, SMS and MMS will be sent to the owner. Drawbacks of this system is it is time consuming process an also if the person who is going to drive is stuck in a no network area SMS or MMS will be difficult to send to the owner. E-LICENCE[3].

Most important and very unfailing person recognition system is biometric verification. Biometric verification is one of the most well-liked and personal biometric verification system. This system consists of a some amount of memory capability to store the thumb print of particular person. Although providing the license, the particular candidate's thumbprint reader is to be stored in the memory of reader. Vehicles like cars, bikes etc. must have a reader capable of reading the particular license. The similar vehicle should have the capacity of thumbprint reader component. A man, who is going to drive the vehicle, should keep the thumb on the reader the card (license) in the vehicle and then swipe his/her finger. If the thumb print stored in the module and thumbprint swiped in the device matches, he/she can drive the vehicle, or else ignition will not work. In addition, and also the system is having the seat belt then prompts the user to wear the seat belt before driving. So that system increase the safekeeping of vehicles and also ensures protected driving by prevent accident. [4].

III.PROPOSED SYSTEM

Here in this project block diagram represents a system which will be carried by traffic police which includes finger print module along with GSM module. Whenever traffic police wants to check license of someone he/she will take impressions of thumb which consequences request in terms of msg to RTO OFFICE .then details of person will be provided by RTO OFFICE to traffic police so that he can check for valid driver.

With This system Control Room will be able to track the location of the Traffic police and can make an effective communication. There are two sections in this project. First transmitting and the other one is receiving.

- Transmission Section

The controller used here is the Arduino ATmega328.In this system, in transmitting section take the finger image from fingerprint Device. Then the output of fingerprint module will be given to the Microcontroller kit. GSM is connected to MSP using RS232. Then through GSM the data is in the form of hexadecimal is transmitted to the base station. And based on the server authentication received by the reply sms from receiver the acknowledgment of the License status.

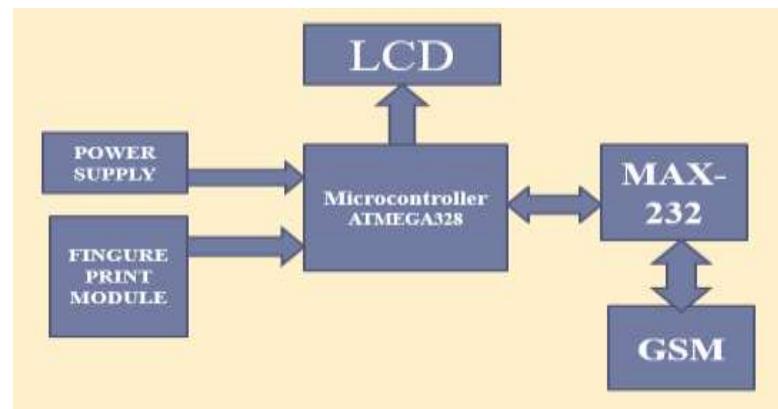


Figure 1: Block Diagram Transmission Section

- Receiver Section

At the receiver side the system key part is RTO Server in which the entire database of all the valid license holders along with the Finger print is stored. All the command message of the finger print data of will be received by the GSM at the receiving side. This string will be compare with the data stored at the database. And for the valid finger print the license details are sent to RTO Unit

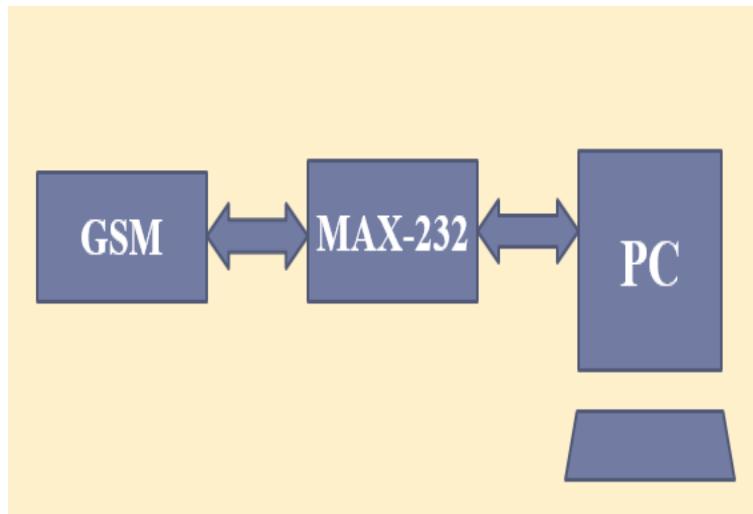


Figure 2: Block Diagram Receiving Section

The LCD 16x2 display shows either the whole system is working properly or not. Like this the whole circuitry works. This system will surely helpful for the RTO.

IV. COMPONENTS DISCRIPTION

A. ARDUINO BOARD

The arduino board is the central unit of the system. The arduino is the microcontroller board based on the ATmega 328. It is a programmable microcontroller for prototyping electromechanical devices. It has 14 digital inputs/output pins (of which 6 can be used as PWM output), 6 analog inputs, a 16 MHz ceramic resonators the arduino differs from all preceding board is that it does not use the FTDI USB to serial driver chip. As expressed some time recently, 20 of the pins work as I/O ports. This implies they can work as a contribution to the circuit or as yield. Regardless of whether they are information or yield is set in the product. 14 of the pins are computerized pins, of which 6 can capacity to give PWM yield. 6 of the pins are for simple information/output. 2 of the pins are for the precious stone oscillator. This is to give a clock heartbeat to the Atmega chip. A clock beat is required for synchronization so correspondence can happen in synchrony between the ATmega chip and a gadget that it is associated with.



Figure3: Arduino Board

• SPECIFICATIONS

- | | |
|----------------------------|-----------|
| 1. Microcontroller | ATmega328 |
| 2. Operating Voltage | 5V |
| 3. Input Voltage | 7-12V |
| 4. Input Voltage (limits) | 6-20V |
| 5. Digital I/O Pins | 14 |
| 6. Analog Input Pins | 6 |
| 7. DC Current per I/O Pin | 40 mA |
| 8. DC Current for 3.3V Pin | 50 mA |
| 9. SRAM | 2KB |
| 10. EEPROM | 1 KB |
| 11. Clock Speed | 16 MHz |

E. FINGER PRINT SCANNER (R305)

1. Integrated image collecting and algorithm chip together, All-in-one.
2. Fingerprint reader can conduct secondary development, can be embedded into a variety of end products.
3. Low power consumption, low cost, small size, excellent performance.
4. Good image processing capabilities, can successfully capture image up to resolution 500 dpi.



Figure 4: Fingerprint Module

D. GSM MODULE

GSM/GPRS Modem-RS232 is built with Dual Band GSM/GPRS engine- SIM900A, works on frequencies 900/1800 MHz. The baud rate is configurable from 9600-115200 through AT command. The GSM/GPRS Modem is having internal TCP/IP stack to enable you to connect with internet via GPRS. It is suitable for SMS, Voice as well as DATA transfer application in M2M interface.

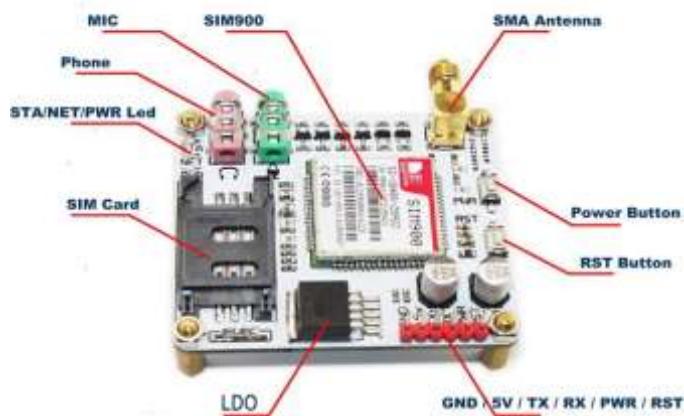


Figure 5: GSM Module

• SPECIFICATIONS

1. Dual band GSM/GPRS 900/1800MHz.
2. Configurable baud rate.
3. SIM card holder.
4. Built in network status LED.

5. Inbuilt powerful TCP/IP protocol stack for internet data transfer over GPRS.

E. LIQUID CRYSTAL DISPLAY

Liquid crystal display screen is the electronic display module and find a wide ranges of applications. A 16*2 LCD display is very basic module and it is very commonly use in various devices and circuit. These modules are preferred to seven segments and other multi segments LEDs. The reason being: LCDs are economical; easily programmable; have no limitation of displaying special and even custom characters (unlike in 7 segments), animations and so on. A 16*2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5*7 pixel matrix. This LCD has 2 registers, namely command and data.

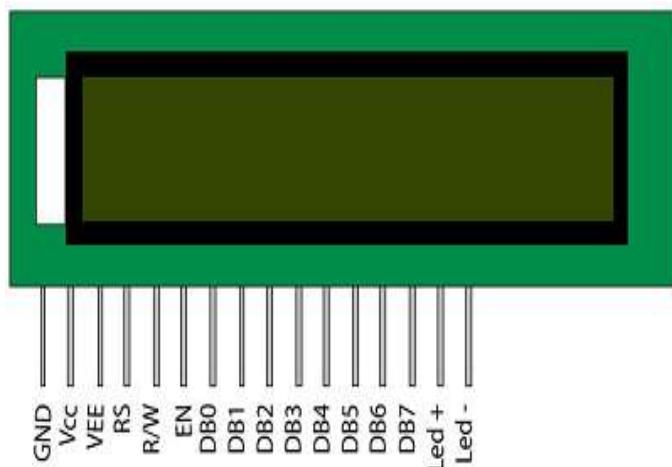


Figure 6: Liquid Crystal Display

The command registers stores the command instructions given to the LCD. A command is an instruction given to LCD to do a predefined task like initializing it, clearing its screen, setting the cursor position, controlling display etc. the data registers stores the data to be display on the LCD. The data is the ASCII value of the character to be displayed on the LCD.

V. CONCLUSION

Thus the proposed system provides a solution for E-License system will be the best invention which will definitely help in maintaining the centralized national database and again as the finger will act as a license it is not required to carry the license. It is also helps in reducing the corruption.

REFERENCES

- [1] J.Angeline Rubella, M.Suganya1, K.Senathipathi, B.Santhosh Kumar, K.R.Gowdham, M.Ranjithkumar (2012) “*Finger print based license checking for automobiles*” IEEE Fourth International Conference on Advance Computing MIT ,Anna University,Chennai Paper No. 978-1-4673-5584-1.

- [2] D. ArchanaThilagavathy, Prasanna R., PriyadarshineePatnaik and Rama P.(2015)“*Finger print based license authentication scheme for Indian scenario*” Scholars Research Library Archives of Applied Science Research Vol.7 No.5 PP 1-5.
- [3] M. Vijay Kumar1, S. Ranjith Kumar (September 2014) “*Fingerprint Based Licensing System for Driving*” International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 9,PP 1-4.
- [4] G.SWAPNA1, G.PALLAVI GEETHA DEVI (2015) “*PROTOTYPE OF A FINGER PRINT BASEDLICENSING SYSTEM FOR DRIVING*” International Journal of Computer Science and Mobile Computing Vol. 4, Issue. 7, July 2015, PP.567 – 570.
- [5] KaranamGeethanjali, PoolaSireesha, RavuruPrathima Student (B.E), ECE, SCSVMV University, Kanchipuram, India “*Fingerprint Based Licensing System for Driving*” ISSN 2394-3777 (Print) ISSN 2394-3785 (Online) Available online at www.ijartet.com International Journal of Advanced Research Trends in Engineering and Technology (IJARTET) Vol. 2, Issue 5, May 2015.
- [6] G Santhosha, Pursuing M.Tech, ES, Visvesvaraya College of Engineering and Technology (VCET), B Santosh Kumar M.P.Patelguda, Ibrahimpatnam, RangaReddy, Telangana, (India) “*SECURE DRIVING SYSTEM BASED ON FINGERPRINT DETECTION*” International Journal Advance Research in Since and Engineering Vol. No.4 Issue 07, July 2015.