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Smart Vehicle Routing System and Finger Print Based Licensing System

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ABSTRACT: Many projects have been developed previously that is related to all type of vehicles such as cars, two wheeler etc. 1. GPS vehicle tracking 2. Anti-theft prevention 3. Accident detection and auto informing ambulance and hospital. 4. Traffic light control system etc., but in this paper, we are going to give solutions to recent problem statement in road transport by implementing wireless sensor networks. 1. Real-time routing of vehicles that also helps to find the person involved in criminal activities 2. Fingerprint licensing system 3. The profusion of traffic management system. Driving license system is a very difficult task for the government to monitor. While traffic police are in checking we can see many criminal activities in this scenario. The crime will be done by both the side (people and police). To avoid such cases we are implementing one more portable fingerprint sensor module that is given to the traffic police. Which is integrated with IOT where the person license information is stored. If the person places his finger then the device will tell you whether they had a license or not. The Vehicle routing concept is used for finding the person who are all involved in criminal activities. This is done by interlinking the vehicle details with the IOT.

KEYWORDS: Finger print sensor, ZigBee, License, Traffic management, IOT

I. INTRODUCTION

The proposed system mainly consists of ZigBee WSN nodes, IOT, fingerprint sensor, RFID, PIC microcontroller, LCD display and power supply. In the vehicle section, a smart reader is fixed to save the vehicle registration detail like vehicle number, registered name, insurance policy number, license no., date of expiry, etc., issued by the Government. Receiver ZigBee WSN nodes are located in traffic signals so that it receives all the vehicle information wirelessly. The received information sent to the government through IOT. Because of this strategy, we can get the database from the server at any time of cost. By implementing our concept the traffic is efficiently controlled and overloading of vehicles are controlled.

A fingerprint sensor is used in Licensing system. The fingerprint-based licensing system helps the traffic police to find the person whether he is having a license or not. The person is also not needed to take license with him. It reduces burden and minimizes the license checking period for both the person and the traffic police. In this system, the Aadhar number is interlinked with a licensing system which also includes the following details like license identification number, address detail of the authorized vehicle driver and a photo of the person. The above details are interconnected with the IOT. So the traffic police can get the details of the person at any time.

The concept of real-time routing is based on the RFID. By implementing our concept the traffic is efficiently controlled and overloading of vehicles are controlled. The persons who are all involved in criminal activities are easily identified and finding the person of police is quickly achieved.

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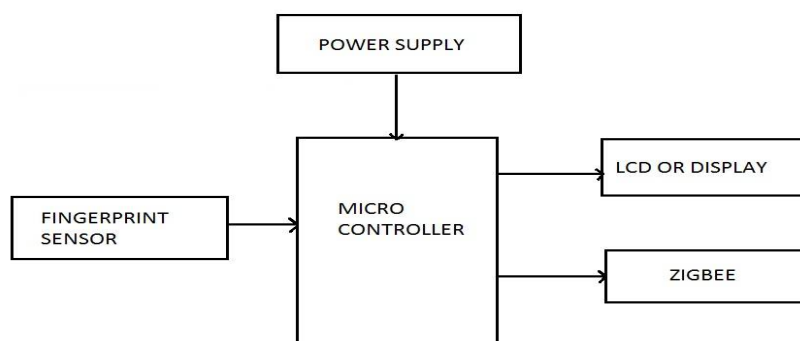
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II. LICENSE VERIFICATION SECTION

BLOCK DIAGRAM



FINGER PRINT SENSOR

The R303a unique finger impression per user is a delicate gadget that is utilized to catch the computerized picture of the finger impression design (3). Fingerprints are broadly utilized with the end goal of security more than many years because of its possibility, precision, unwavering quality and adequacy (2).

Unique mark handling incorporates two sections: unique finger impression enlistment and finger impression coordinating (the coordinating can be 1:1 or 1: N). When selecting, the client needs to enter the finger two times. The framework will process the two-time finger pictures, create a layout of the finger in light of preparing results and store the format. While coordinating, the client enters the finger through optical sensor and framework will create a format of the finger and contrast it and layouts of the finger library. For 1:1 coordinating, the framework will contrast the live finger and particular layout assigned in the Module; for 1: N coordinating, or Searching, the framework will look the entire finger library for the coordinating finger. In the two Circumstances, framework will restore the coordinating outcome, achievement or disappointment.



LIQUID CRYSTAL DISPLAY (LCD)

LCD is a kind of show utilized as a part of computerized watches and numerous versatile PCs. The fluid precious stones can be controlled by a connected electric voltage with the goal that light is permitted to pass or is blocked. Via painstakingly controlling where and what wavelength (shading) of light is permitted to pass, the LCD screen can show pictures. A backdrop illumination gives LCD screen's brilliance. One of the most recent such progression is connected



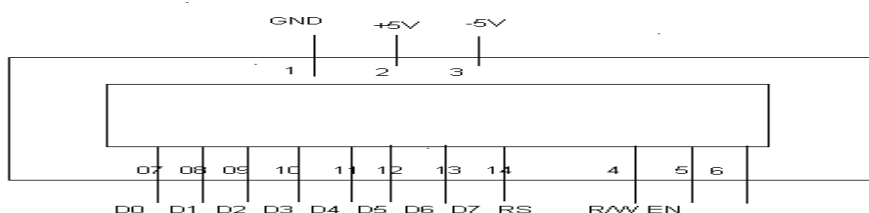
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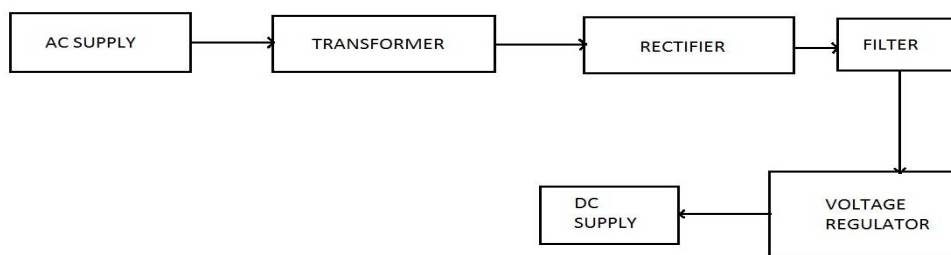
to glass amid goes about as switch permitting control of light at the pixel level, enormously enhancing LCD's capacity to show little-estimated text styles and picture obviously.



While Vcc and Vss give +5V and ground individually, Vee is utilized for controlling LCD differentiate. There are two vital registers inside the LCD. The RS stick is utilized for their choice as takes after. In the event that RS=0 the direction charge code enroll is chosen, enabling the client to send a summon, for example, clearly show, cursor at home, and so on. In the event that RS=1 the information enlist is chosen, enabling the client to send information to be shown on the LCD. R/W input enables the client to compose data to the LCD or read data from it. R/W = 1 for perusing. R/W= 0 for composing. The LCD to hook data introduced to its information pins utilizes the empower stick. The 8– bit information pins, DO – D7, are utilized to send data to the LCD or read the substance of the LCD's inside registers.

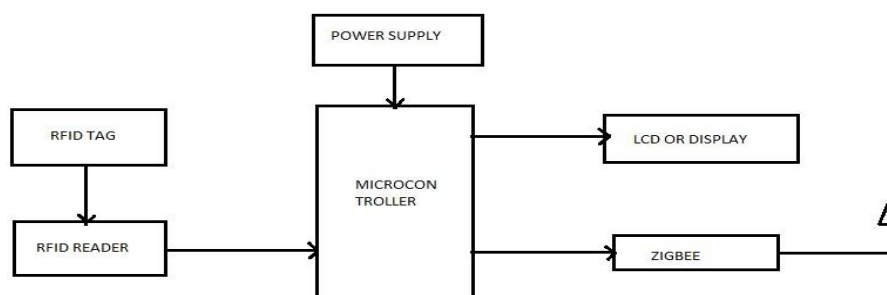
POWER SUPPLY

A power supply (once in a while known as a power supply unit or PSU) is a gadget or framework that provisions electrical or different sorts of vitality to a yield load or gathering of burdens. The term is most usually connected to electrical vitality supplies, less regularly to mechanical ones, and once in a while to others. The power supply comprises of AC supply, Transformer, Rectifier, Filter, Voltage controller and DC supply.



III. TRAFFIC SIGNAL CONTROL

VEHICLE SIDE:



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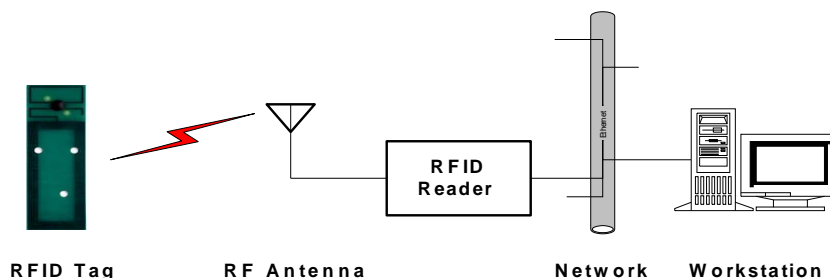
CONTROL ROOM SIDE:



The density of the road is identified by the RFID. Then the traffic light is automatically controlled. The poles near the diverging roads are mainly considered so that the driver has the option to switch roads, thus avoiding any further addition to the jam (1).

RFID

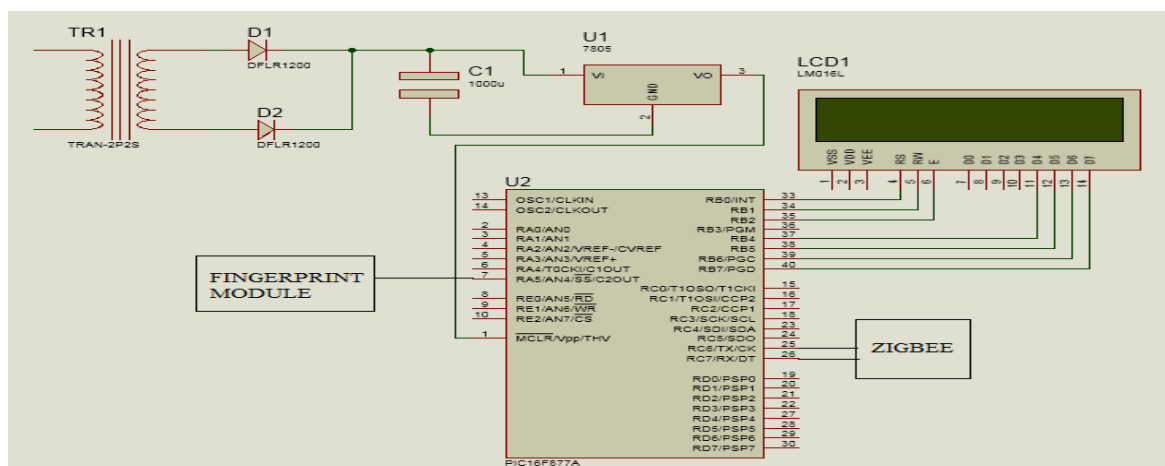
An ADC (Automated Data Collection) innovation that utilizes radio-recurrence waves to exchange information between a peruser and a mobile thing to recognize, order, track. Is quick and does not require physical sight or contact between peruser/scanner and the labeled thing. Plays out the task utilizing minimal effort segments. Endeavors to give remarkable recognizable proof and backend mix that takes into account extensive variety of uses. Other ADC innovations: Barcodes, OCR.



IV. RESULTS AND ANALYSIS

The analysis of fingerprint sensor is made by the simulation. Verification of fingerprint is shown in the LCD display. It shows the License ID and the person details in the output. In Vehicle routing Zigbee is used to transmit the vehicle details through IOT. Output of the vehicle is shown in the Display.

License verification



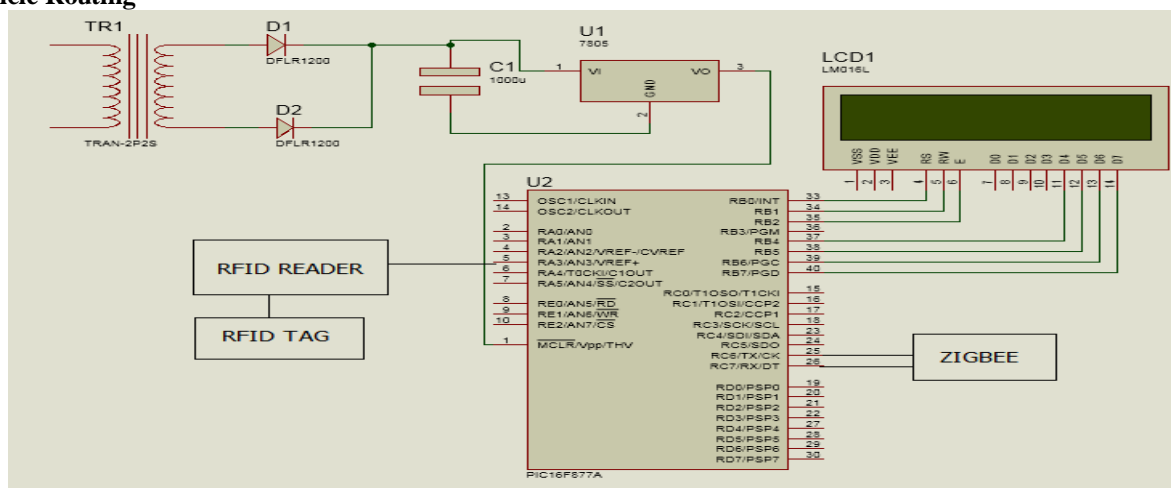
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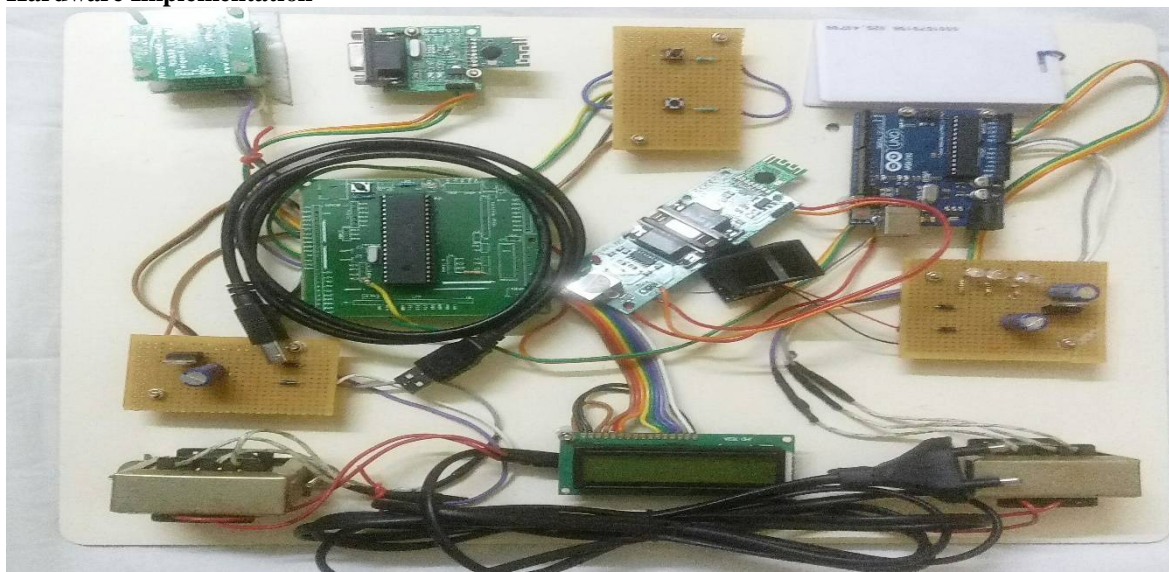
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Vehicle Routing



Hardware Implementation



V. CONCLUSION

The proposed system will improve the traffic management system Efficiently without changing the overall existing system. This concept will implemented by minimum modifications with the existing traffic management system. Due to this traffic will be efficiently monitored and accidents due to heavy traffics are also reduced. The licensing system which will improve the license checking process and reduces the checking time duration. So the people who has fake licenses are also identified.



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VI. FUTURE SCOPE

In future, the traffic management system will improve by introducing new technologies. In this concept, CCTV monitoring is also included in the future. That will help to find the traffic information and also to find the people who are all violating the traffic rules.

The fingerprint license checking system can interlink with the authorized person's personal details like voter ID, Aadhar card number, and educational certificates. That will result in the smooth operation of traffic management.

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