SMART LICENSE GENERATION IN RTO

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Abstract : *The project is about the automation of driving license, by digitalizing a mechanical work into computerized format. Aim of the project is to automate the inspection of driving test by examining the driving capability through technology and to avoid brokerage. The current existing system involves human intervention, starting from applying, verifying, inspecting and issuing the license. In driving test, the candidate has to drive over a closed loop path in front of the authorities on the land surface and if they fail to finish the test they will be disqualified. The proposed system will automate the driving test by replacing human intervention with the sensor device in the lane and vehicle and this sensor is communicated by WSN (Wireless Sensor Network and the observation is updated in web page by IOT. The entire process is evaluated without an additional supervisor. This helps to reduce manual interference and gives accurate results.*

Key words: (computerized format, brokerage , sensor, WSN , IOT)

1. INTRODUCTION

1.1.   0BJECTIVE

At present era in our country there are so many people who are not having the original driving license with them. Instead of they are handling the fake license due to this problem the ratio of accidents increasing day to day. The objective of this project,

•The fake license ID's can be detected by using the fingerprint reader

• The respective details will be collected from the candidate like fingerprint recognize, photo, Aadhar card number these are maintain along with the driving license database

• Whenever the officers want to check the driving license of vehicle users, the verification system is used to authenticate liability of the vehicle user license

1.2. BENEFITS

- Issuing license for unauthorised person are avoided
- Third party(agent) involvement is not necessary
- Maintaining the records manually are avoided
- The ratio of accidents are reduced by providing license to eligible person

1.3. CHALLENGES

From the existing system we overcome the challenges like maintaining the records manually, avoid issuing license for un authorized persons and abolishment of third party .Thus it improves the efficiency by providing license only to the authenticated persons.

2. LITERATURE SURVEY

The existing system works by maintaining the records. The enhanced IoT technology paved a way to provide license by avoiding bribery and helps in issuing license only to the authorized candidates.

[1] V.Mangayarkarasai "Finger Print based license checking system "2018 international Journal for Scientific Research & Development

This project is designed for checking license based on persons fingerprint. It uses components like Microcontroller, Fingerprint sensor, Arm Processor circuit and EEPROM. The microcontroller Atmel AT89C52 is used to receive data from the fingerprint sensor when the person places the finger, the sensor sends the corresponding data to microcontroller .the microcontroller stores the data in the EEPROM. The ARM processor is activated when the finger is placed in the sensor all these components are interfaced together with the microcontroller .The data stored is compared with the database and the information is displayed in PC if the data is not matched, microcontroller will display the authentication failed message on the PC.

[2] Monika Kashyap, Vidushi Sharma, Neeti Gupta "Taking MQTT and Node Mcu to IoT Communication in Internet of Things " ScienceDirect International Conference on Computational Intelligence and Data Science (ICCIDS 2018)

Internet of things allows connections among devices using internet with the ability to gather and exchange data. These devices are usually attached with microcontroller like arduino, sensor, actuators and internet connection .In this system MQTT(Message Queuing Telemetry Transport) plays an major role in exchange of information between the devices in IOT without knowing the identities of each other .In this system section A uses a serial USB as transmission medium and section B uses a MQTT which deploy A Wi-Fi module to connect with internet .Here the concept of publisher and subscriber is used . Messages are

published or subscribed with the help of a broker this agent is in charge of dispersing messages to intent clients.

[3] Jjun-wei hsieh Deep learning assisted portable IR active imaging sensor spots and identifies live humans through fire 2017 IEEE international conference on advanced video and signal based surveillance

To capture clear image through fire is a highly pursued goal and various portable devices are introduced to improve the capabilities of thermo graphic cameras. In this combination of an Infrared active imaging sensor and artificial intelligence to obtain automatically detect people behind the hidden flames. We also use Convolutional Neural Network (CNN) in recognizing a static or moving person through fire .This network is able to detect the person even when the fire is spread around. These results in development of automatic surveillance systems to generate alerts. In the case a fire spreads, persons are detected inside rooms invaded by flames, without relying on the subjective human interpretation of the videos.

[4] Shiv kumar, L . Kalicharan, R.S. Selvanithila"Smart Vehicle Insurance Verification System "international conference on inventive computation technologies 2019

Vehicle Insurance is issued by the Road Transport Offices (RTOs) and the Vehicle Registration Certificate (RC) are used by the citizens to drive vehicles across the country. Vehicle Insurance is mandatory while driving. The driver should carry the vehicle insurance while driving. The major constraint is to carry the insurance paid certificate while driving otherwise, the driver has to pay penalty for not having the insurance certificate as per the driving laws. In this paper, propose an idea about online security protocol to verify the insurance certificate and further to authenticate the vehicle's insurance to the traffic police. Also, security services are providing to maintain the personal details present in the insurance certificate during the transmission of data via the Internet. The proposed protocol is simple and easy to implement in real time..

3 .MODULE DESCRIPTION

The modules of the proposed system are based on the three cases,

a. Sensing the vehicle

b. Interface with external devices

c. Interface with web

a. MODULE SENSING THE VEHICLE

In this vehicle module, the IR sensor are placed in the footrest of the vehicle and that corresponding signals are transmitted to lane section through WSN by this the candidate can be monitored

IR SENSOR:

An infrared (IR) sensor is an electronic device that is used to sense characteristics of its surroundings. It works by either emitting or detecting infrared radiation. Infrared sensors are capable of measuring the heat emitted by an object and detecting the motion. The infrared waves ranges from 0.75 to 1000µm.The infrared spectrum can be split into near IR, mid IR and far IR. This IR sensor is used to detect the driver puts his feet on the ground and the vehicle crossing the test track in a proper direction

WSN :

Wireless sensor network (WSN) is a wireless network. It used in distributed autonomous devices to monitor physical environmental conditions by transmitting sensor signals. This is used to collect information from vehicle and laneto update in IOT webpage

MICRO CONTROLLER UNO:

The Arduino UNO is a microcontroller board based on the ATmega328.It has 14 digital input/output pins and 6 analog inputs. This is placed in the vehicle section to control the IR sensors and WSN module. It contains all the required support needed for microcontroller. Arduino UNO is an open-source electronic platform which is easy-to-use hardware and software.

b. INTERFACE WITH EXTERNAL DEVICES

In this lane section, the biometric is placed to recognize the candidate entry. As in the vehicle, the IR sensor is also placed in the lane to monitor the flow of driving these sensor information are gathered and sent through WSN

BIOMETRIC:

A biometric sensor is a transducer that changes a biometric of a person into an electrical signal. This biometric device is a security identification and authentication device used to verify the information of the candidate which is already collected during the LL. Once the verification is done the candidate is allowed to take the test. These biometrics are mainly used to increase security and accuracy.

LCD :

LCD (Liquid Crystal Display) is a flat panel display which uses liquid crystals in its primary form of operation. LEDs have a large and varying set of use cases for consumers and businesses, as they can be commonly found in smart phones, televisions, computer monitors and instrument panels. Liquid crystal display technology works by blocking light. Specifically, an LCD is made up of two pieces of polarized glass (also called substrate) that contain a liquid crystal material between them. A backlight creates light that passes through the first substrate. It is used to display current status of the monitoring process.

IR SENSOR :

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ARDUINO ATmega
The Arduino Atmega is an 8-bit microcontroller that has 32K of flash memory, 1K of EEPROM, and 2K of internal SRAM. The system is connected with the microcontroller to display the result of the sensors and trackers. A buzzer

is integrated with the microcontroller, whenever disruption occurs it beeps. It is connected in the lane section to control the IR sensors and with WSN for communication purpose. The open-source Arduino Software (IDE) makes it easy to write code and to upload. It runs on Windows, Mac and Linux. IDE software can be used with any Arduino board.

BUZZER

A Buzzer Alarm is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric. It generates a single consistent tone sound by applying D.C voltage. Piezo sounders contain a piezo electric vibration plate within a moulded case. Piezo buzzers uses less current, have a higher sound output and wider operating voltage. The alarm beeps when an object is detected.

WIRELESS SENSOR NETWORK

Wireless sensor network (WSN) is a wireless network distributed autonomous devices using sensors to monitor physical or environmental conditions. This is used to collect information from vehicle and lane and updated in the IOT web page. ZigBee technology works on IEEE standard 802.15. 4, which can be used in wireless sensor network (WSN). The low data rates, low power consumption, low cost are the main features of ZigBee. WSN is composed of ZigBee coordinator, ZigBee router and ZigBee end device.

C . INTERFACE WITH WEB

An IOT module is a is a system of interrelated computing devices that connect to wireless networks and sends and receives data. This IOT module is used to receive the information from track and vehicle through WSN and send the data to RTO and DTO web page and the information will be stored. This ESP8266 Wi-Fi Module is a self contained with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. Also capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor

IOT MODULE (ESP8266)

An IOT module is a small electronic devices which is embedded in objects, machines and things that connect to wireless networks and sends and receives data. This IOT module is used to receive the information from track and vehicle through WSN and send the data to RTO and DTO web page and the information will be stored. This ESP8266 Wi-Fi Module is a self contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. Also capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor.

4. SYSTEM DESIGN

The model consists of micro controller, IR sensor, WSN, fingerprint sensor, IOT module Buzzer.

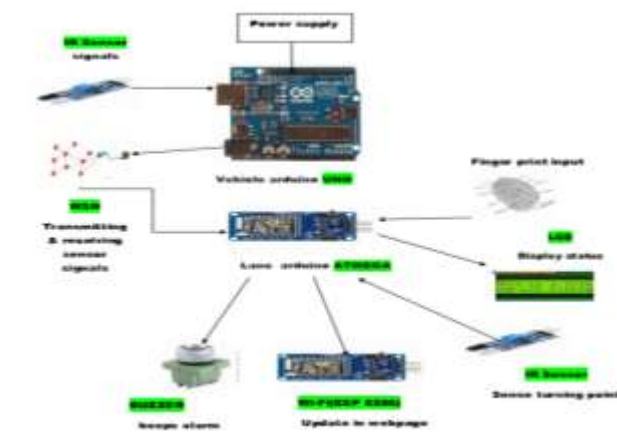## 4.1 ARCHITECTURAL DESIGN

Fig -4.1: Architecture diagram

The Figure No.4.1. Shows the architecture diagram with sensors namely IR sensors and WSN. The sensors are in turn connected to the microcontroller (Arduino UNO) which is the core part of the system and other components

like buzzer, IR sensor, WSN(Zigbee), LCD and IOT module (ESP8266) in the lane section are connected to the microcontroller board (Arduino Atmega). Each sensor has a specific function in monitoring the idol in the environment. The IR Sensors in the vehicle section senses weather the foot is on the foot rest or not. The WSN Communicates with the Arduino UNO and sense the single to IOT module. when the candidate comes for test drive the finger print sensor gets the information and checks it with the database, then the candidate is allow to take the test. The Arduino ATMEGA in the lane section controls the sensors and senses whether the vehicle is going in the correct direction. If the vehicle does not go in proper direction the buzzer alarm beeps. The singles are communicated via WSN. The status is displayed in the LCD Display. The information are updated in the web page through IOT module.

5. CONCLUSION

The proposed system has the potential to extend the monitoring driving quality of the driver during the test to provide the license .This also includes monitoring and updating the information the webpage . By this process the examiner can accurately view the candidate performance at the same time the information about the candidate is updated in the RTO and DTO

5.1 FUTURE WORK

In future for a more reliable and less complex system the controller section can be swapped with other Advanced Microcontrollers. In enhancement to this system it can be further carried out as E-license where the all information about the driver are stored. So that it can be viewed by the police or any emergency condition. That should contain the details of the candidate from the day of applying LLR to receiving the license. Additionally mobile applications can be developed to view the parameters that are yet to come.

REFERENCES

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