

# A SMART AUTOMATION SYSTEM FOR MONITORING LICENSE TEST DRIVE USING EMBEDDED SYSTEM

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## ABSTRACT

Driving license system is a very difficult task for the government to monitor. Normally, in license tests a candidate applied for license have to drive over a closed loop path like the number (8) in front of the authorities. The candidate has to drive over the path without any support over the land surface and if he fails to do he will be disqualified. For that, the authorities have to watch him/her manually. But in this project is about the automation of driving license test system.

**Keyword:** - Load cell, Proximity Sensors, Fingerprint Sensor, LCD, PC with VB Software.

## 1. INTRODUCTION

In our project, we have developed a system for watching the candidate whether he/she is eligible for getting license by using a load cell. The load cell changes its output when there is any pressure change over the surface. Thus, we can detect the candidate who fails to keep his/her foot in the vehicle by differential output from the load cell. Then, it was processed by the micro-controller and the output can be obtained and we placed ultrasonic sensor for hand signal detection and no of count detection. While a person entering for license test he was authenticated by finger.

## 2. EXISTING METHOD

Driving license system is a very difficult task for the government to monitor. Normally now a day's candidate have to appear along with her vehicle for test drive in front of RTO and put closed loop like a number 8. In this process RTO is necessary to monitoring the candidates. If the candidate is passed in this test then he can eligible to get license. If the candidate is fail then the disqualified candidate provide some amount as corruption to RTO thus by he getting license illegally.

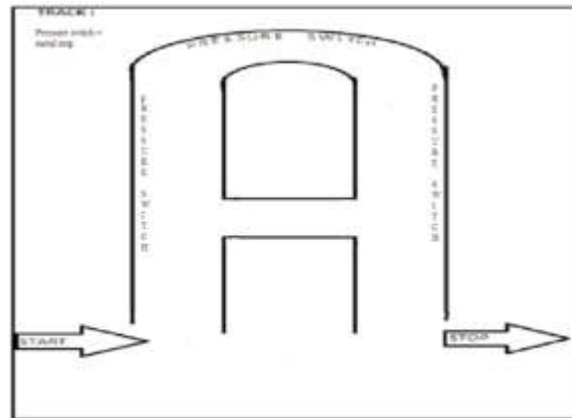


Fig -1: Track

### 3. PROPOSED METHOD

But in this smart automation process if they candidate want to get license means. First candidate want to keep finger in finger print sensor then it shows the history of the candidate that history contains candidate bio data, address, number of appearances for this license test and how many times he failed in this test. After this analysis candidate have to take a test drive on load cell based panel then the load cell senses the weight of the candidate and bike. If candidate have any foot touch on panel then there will be some mismatches occur due to deviation in weight it is calculated by load cell. Proximity sensor senses whether the candidate indicates the turning via hand or not if it not then it is noted as a mistake Finally computer will decide based on the candidate performance and it generate license to the qualified candidate.

### 4. DESIGN

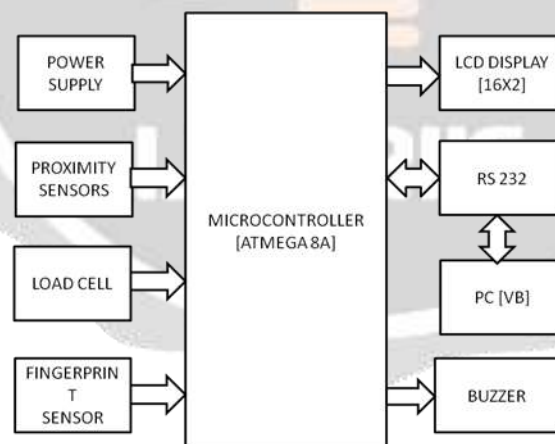


Fig -2: Block Diagram

### 5. POWER SUPPLY UNIT

#### 5.1. Transformer

A transformer is an electro-magnetic static device, which transfers electrical energy from one circuit to another, either at the same voltage or at different voltage but at the same frequency.

### 5.2. Rectifier

The function of the rectifier is to convert AC to DC current or voltage. Usually in the rectifier circuit full wave bridge rectifier is used.

### 5.3. Filter

The Filter is used to remove the pulsated AC. A filter circuit uses capacitor and inductor. The function of the capacitor is to block the DC voltage and bypass the AC voltage. The function of the inductor is to block the AC voltage and bypass the DC voltage.

### 5.4. Voltage Regulator

Voltage regulator constitutes an indispensable part of the power supply section of any electronic systems. The main advantage of the regulator ICs is that it regulates or maintains the output constant, in spite of the variation in the input supply.

## 6. SENSORS

There are 2 types of sensors are used in this

- A. Finger print sensor.
- B. Proximity sensor.

### 6.1. Finger print sensor

In this we are using “U 4000B” sensor for getting the Fingerprint image and to store that in the database. It is an excellent fingerprint input device can be widely applied in social security, public security, attendance, fingerprint encryption, embedded, and many other applications. U 4000B miniature fingerprint scanner to automatically read the fingerprint image, and through USB interface to transfer digital fingerprint images to the computer-controlled technology to support the Bio key SDK development tools. Require authentication for laptop computers, desktop computer or other personal computing devices, it is the ideal accessory.



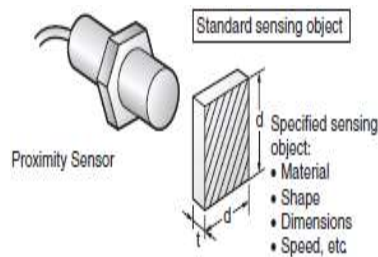
**Fig -3: U 4000B**

### 6.2 Proximity sensor

A proximity sensor is a sensor able to detect the presence of nearby objects without any physical contact. A proximity sensor often emits an electromagnetic field or a beam of electromagnetic radiation (infrared, for instance), and looks for changes in the field or return signal. The object being sensed is often referred to as the proximity sensor's target. Different proximity sensor targets demand different sensors. For example, a capacitive or photoelectric sensor might be suitable for a plastic target; an inductive proximity sensor always requires a metal target.

The maximum distance that this sensor can detect is defined "nominal range". Some sensors have adjustments of the nominal range or means to report a graduated detection distance.

Proximity sensors can have a high reliability and long functional life because of the absence of mechanical parts and lack of physical contact between sensor and the sensed object.



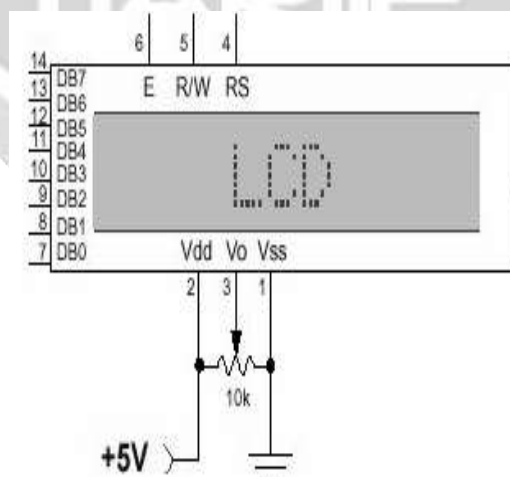
**Fig -4:** proximity sensor

## 7. MICROCONTROLLER

The ATmega8A provides 8K bytes of In-System Programmable Flash with Read-While- Write capabilities, 512 bytes of EEPROM, 1K byte of SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible Timer/Counters with compare modes, internal and external interrupts, a serial programmable USART, one byte oriented Two-wire Serial Interface, a 6-channel ADC (eight channels in TQFP and QFN/MLF packages) with 10-bit accuracy, a programmable Watchdog Timer with Internal Oscillator, an SPI serial port, and five software selectable power saving modes. The Idle mode stops the CPU while allowing the SRAM, Timer/Counters, one SPI port, and interrupt system to continue functioning. The Power-down mode saves the register contents but freezes the Oscillator, disabling all other chip functions until the next Interrupt or Hardware Reset. In Power-save mode, the asynchronous timer continues to run, allowing the user to maintain a timer base while the rest of the device is sleeping. The ADC Noise Reduction mode stops the CPU and all I/O modules except asynchronous timer and ADC, to minimize switching noise during ADC conversions. In Standby mode, the crystal/resonator Oscillator is running while the rest of the device is sleeping. This allows very fast start-up combined with low-power consumption.

## 8. LCD DISPLAY

A liquid crystal display (LCD) is a thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector. Each pixel consists of a column of liquid crystal molecules suspended between two transparent electrodes, and two polarizing filters, the axes of polarity of which are perpendicular to each other. Without the liquid crystals between them, light passing through one would be blocked by the other. The liquid crystal twists the polarization of light entering one filter to allow it to pass through the other.



**Fig- 5:** Pin Diagram of LCD

## 9. CONCLUSIONS



License is very necessary to drive on highways if some persons doesn't know well driving they are getting license by bribe on RTO.

By this project we can provide license only for eligible candidates. The proposed automated driving license test is advantageous over existing manual test.

## 10. REFERENCES

- [1]. Komal A. Margale, priyanka M. Pawale, Amruta , A. Patil, Jyotiwaykule "Driving license test Automation using VB", International Journal of Engineering and science (IJAES) Vol.2 pp.2394- 3661,2015.
- [2]. Archana R.Raut, Dr.L.G.Malik "ZigBee Based Industrial Automation Profile for Power Monitoring Systems", International Journal on Computer science and Engineering (IJCSE) Vol.3pp.2028-2033,2011.
- [3]. D. ArchanaThilagavathy, prasana R "Finger Print Based License Authentication Scheme for Indian Scenerio", Archives of Applied Science Research Vol.7pp.49-53,2015
- [4]. AfazUddin Ahmed, TaufiqMahumadMasum, Mohammad Mahbuar Rahman "Design of Automated Secure Garage System Using License Plate Recognition Technique" IEE Transaction on Intelligent Systems Vol.2 pp.22-28, January2014.
- [5]. Shin-Ting Jeng and Lianyu Chu "Tracking Heavy Vehicle Based on Weigh-In-Motion and Inductive loop signature Technologies"IEE Transactions on Intelligent Transportation System,Vol.16, pp.632-641, April 2015.
- [6]. Francisco Moraesoliveira-Neto, Lee D. Han, and MyongKeeJeong, "An Online Self-Learning Algorithm for License Plate Matching" IEE Transactions on Intelligent Transportation System, Vol.14 pp.1806-1816,December 2013.
- [7]. M. Suganya, K. Senathipathi, K.R.Gowtham " Finger Print Based License Checking for Auto- Mobiles" IEE- Fourth International Conference on Advance Computing, December 2012.

## BIOGRAPHIES

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