



Automatic Two Wheeler Driving Licence System by Using Labview

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ABSTRACT: This paper presents about the automation of driving license test system. Normally, in driving test a candidate applied for license have to drive over a closed loop path 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 watch candidate manually. In this project, a lab view system with sensor has been developed for watching the candidate for getting license by using lab view. By using this, the candidate who fails to keep their foot in the vehicle by differential output from the sensor can be monitored. Then it was processed by the microcontroller to the lab view with the help of laptop or PC and number of count detection while a person entering for license test was authenticated by using finger print sensor. So that they will automatically select or reject by the system.

KEYWORDS: Finger print sensor, lab view, limit switch, transmitter, receiver and sensor driver.

I. INTRODUCTION

In recent days life technology has been developed and people are interested to do everything in shortcut. The growing technology introduces many advances in day to day life. Its reduces the manpower and time consumption. So this project also helps to get driving license for the candidate without any authorities. In existing system consists of four wheeler license system with many sensors are used in the H track ^[2]. So, there may be a chance of signal interruption.

In this project only two sensors are used in the track. So, the signal interruption is less. And also the authority person needs not to monitor the candidate who enters for the license test. Before entering for the driving license test normally LLR is applied for training and experience. It's not needed in this project. If the candidate knows driving well then the candidate can fill the form for driving test and drive the vehicle. During driving license test the person has to wear the shoe which was given by the authority before driving the vehicle. Then the person is identified by limit switch sensor and proximity sensor with the help of lab view which is connected to laptop or PC. During driving the person is monitored by the sensors. If candidate gets qualified he can get license within two days. Suppose if the candidate fails to drive properly then that test is postpone for next particular day. By using Labview software it should be monitored and data stored without the help of licensing authorities.

In this paper Section 2 deals with literature review about various existing techniques for vehicles licensing authentication system. In Section 3 deals with system representation and various driving circuits used for the automatic two wheeler driving license system is been discussed in detail. In Section 4 deals with working principle and operation of the proposed system with expected Labview output.

II. LITERATURE REVIEW

In day to day life many modern transporting vehicles coming in to the market. As like population Increases the usage of these vehicles also increases in a wider scale. Most of them prefer for two wheeler transporting systems. For operating the vehicles the license is compulsory. Normally, in driving test a candidate applied for license have to drive over a closed loop path 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. In existing system consists of four wheeler license system with many sensors are used in the H track ^[2]. So, there may be a chance of signal interruption. In this project only two sensors are used in the track. So, the signal interruption is less and also it should be reduces the cost.

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Second existing system consists of a data base it storing the fingerprint of particular person. While issuing the license, the specific person’s fingerprint is to be stored in the data base. Vehicles such as cars, bikes etc. should have a finger print reader and have capable to read the particular persons license details. A person, who wishes to drive the vehicle, should swipe his/her finger (license) in the vehicle. If the finger print stored in the card and fingerprint swiped in the device matches, he/she can proceed for ignition, otherwise ignition will not work. They are used FPGA^[3] in that project to interface the vehicle and PC. In this proposed system used Labview software instead of FPGA. So, we can easily identify the unauthenticated driver by using Labview outputs.

III.COMPONENTS OF PROPOSED SYSTEM

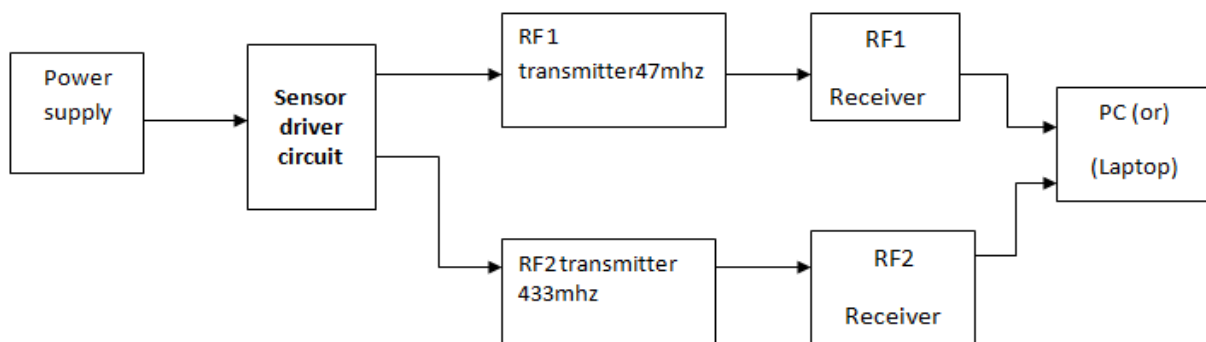


Fig. 1 Main Block Diagram of Proposed system

The 5V power supply is given to sensor driven circuit. This project consists of two Radio frequency transmitter and two receiver circuits. The output is viewed through the laptop using Lab view.

III.A.RF Transmitter circuit

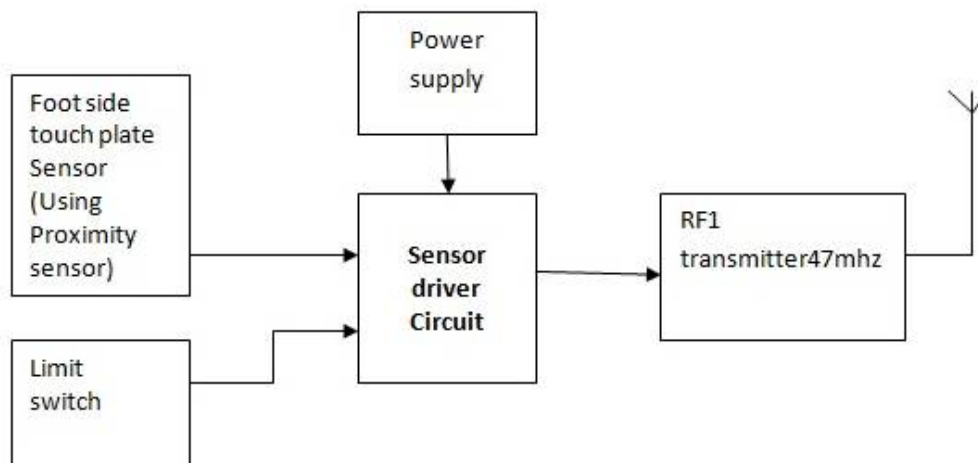


Fig. 2 Block Diagram representation of RF transmitter

The fig 2 shows the Foot side transmitter block diagram. Here two transmitters are used. One is foot side transmitter and another one is ground side transmitter. In foot side transmitter the proximity sensor is used to identify the candidate placed his foot on the vehicle’s pedal. And one limit switch is used to detect whether the candidate wear the shoe or not. The 5V power supply is given to the sensor driver circuit. Then the signal is transmitted to the receiver side through the 47 MHz range of RF transmitter.

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GROUND SIDE BLOCK

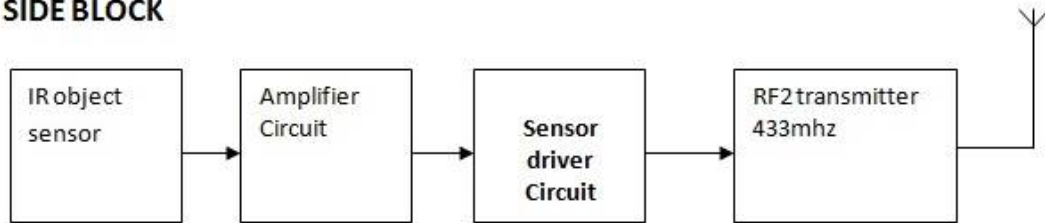


Fig 3 Ground side transmitter block diagram

The fig 3 shows the ground side block diagram. In ground side two PIR sensors are used to identify the entering and leaving of the candidate. PIR sensor send the signal to the amplifier circuit. This circuit amplify signal and given to the sensor driver circuit. Then the signal is transmitted to the receiver side through the 433 MHz range of RF transmitter.

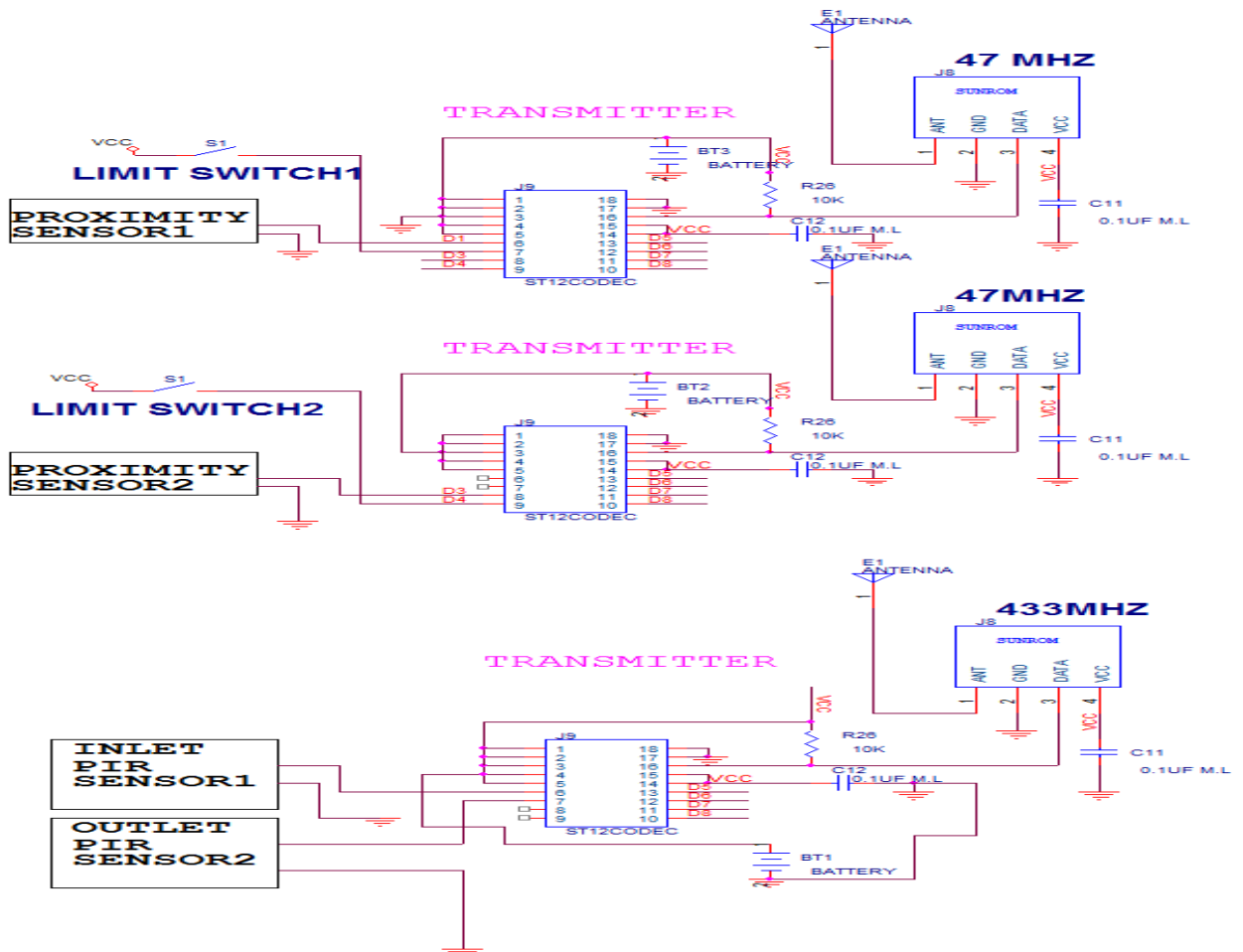


Fig. 4 Circuit diagram of RF transmitter

The fig 4 shows the Circuit diagram of RF transmitter. Here two transmitters are used. One is foot side transmitter and another one is ground side transmitter. In foot side transmitter the proximity sensor is used to identify the candidate placed his foot on the vehicle's petal. And one limit switch sensor is used to detect whether the candidate wear the shoe or not. The 5V power supply is given to the sensor driver circuit. Then the signal is transmitted to the receiver side through the 47 MHz range of RF transmitter.

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In ground side two PIR sensors are used to identify the entering and leaving of the candidate. PIR sensor send the signal to the amplifier circuit. This circuit amplify signal and given to the sensor driver circuit. Then the signal is transmitted to the receiver side through the 433 MHz range of RF transmitter.

Whenever the high output pulse is given to base of the transistor BF 494, the transistor is conducting so tank circuit is oscillated. The tank circuit is consists of L2 and C4 generating 433 MHz carrier signal. Then the modulated signal is given LC filter section. After the filtration the RF modulated signal is transmitted through antenna.

III.B. RF Receiver circuit

RECEIVER BLOCK:

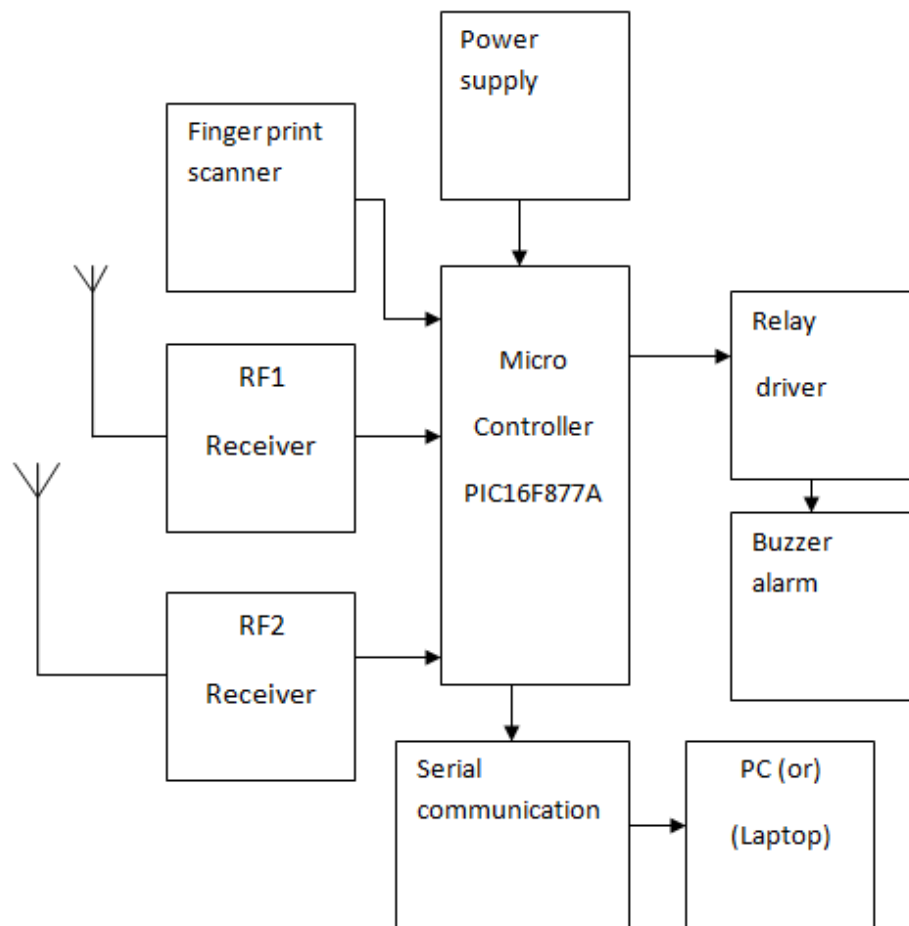


Fig. 5 Block Diagram representation of RF receiver

The fig 5 shows the block diagram of the receiver side. The RF receiver is used to receive the encoded data which is transmitted by the RF transmitter. Then the received data is given to transistor which acts as amplifier. Then the amplified signal is given to carrier demodulator section in which transistor is turn on and turn off conducting depends on the signal.

In Receiver side Finger Print Sensor is used to detect the entry of the candidate. For the first time the candidate details are entered in Lab view manually .Then the next times the candidate details are generated automatically. Two receiver side signals and finger print signal is given to the microcontroller circuit. Here PIC16F877A microcontroller is

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used. PIC is a general purpose device, which integrates a number of components of a microprocessor system on to single chip. They are smaller in size, consumes less power and inexpensive.

Various PICs offer different kinds of memories. EEPROM, EPROM, FLASH etc. are some of the memories of which FLASH is the most recently developed. Technology that is used in PIC16F877 is flash technology, so that data is retained even when the power is switched off. Easy Programming and Erasing are other features of PIC 16F877. The controlled signal is given to the Lab view through the RS-232 Serial communication. In telecommunications, RS-232 is a standard for serial binary data interconnection between a DTE (Data terminal equipment) and a DCE (Data Circuit-terminating Equipment). It is commonly used in computer serial ports.

Details of character format and transmission bit rate are controlled by the serial port hardware, often a single integrated circuit called a UART that converts data from parallel to serial form. A typical serial port includes specialized driver and receiver integrated circuits to convert between internal logic levels and RS-232 compatible signal levels.

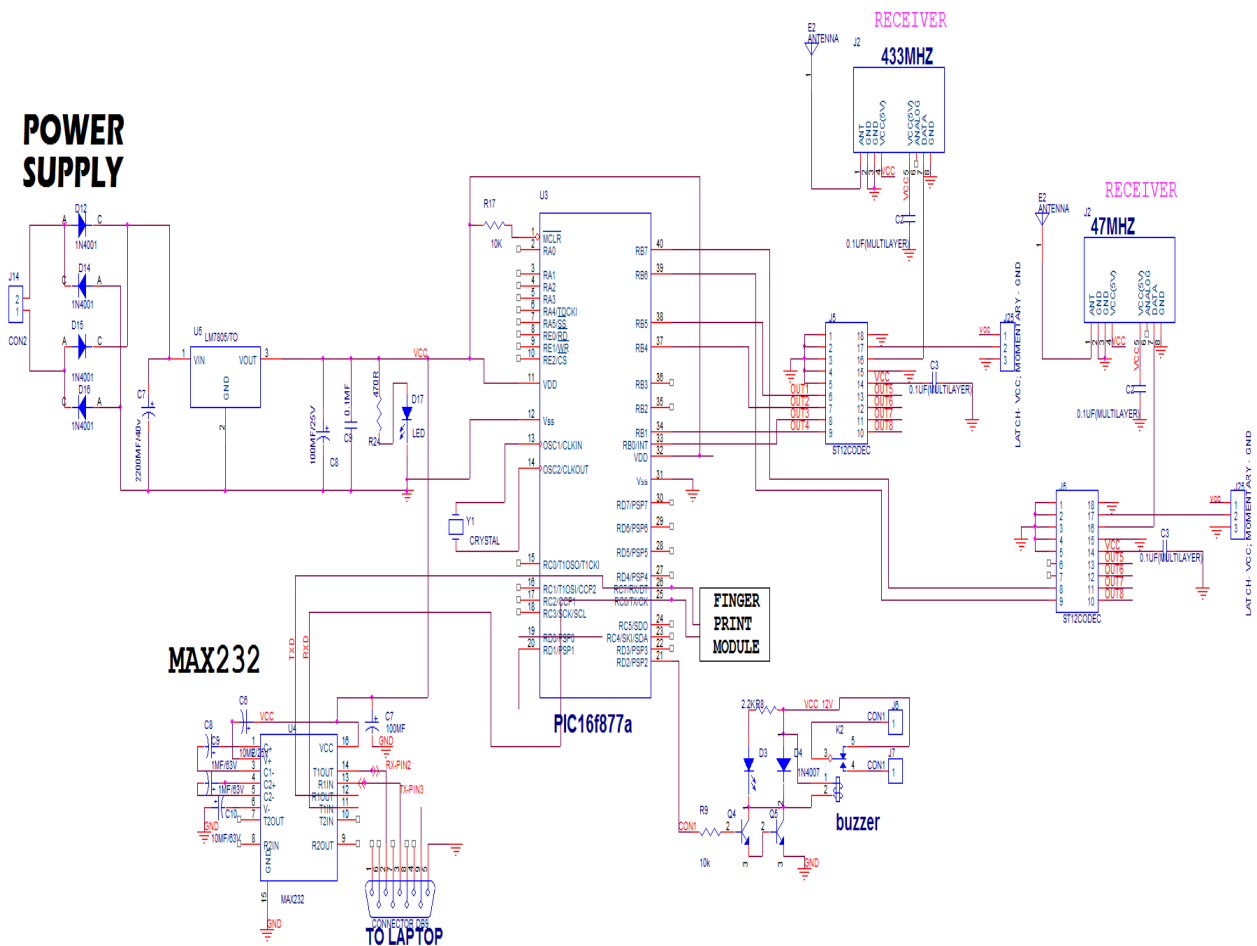


Fig. 6 Circuit diagram of RF receiver

The RF receiver is used to receive the encoded data which is transmitted by the RF transmitter. Then the received data is given to transistor which acts as amplifier. Then the amplified signal is given to carrier demodulator section in which transistor Q1 is turn on and turn off conducting depends on the signal. Due to this the capacitor C14 is charged and discharged so carrier signal is removed and saw tooth signal is appears across the capacitor. Then this saw tooth signal is given to comparator. The comparator circuit is constructed by LM558. The comparator is used to convert the saw tooth signal to exact square pulse. Then the encoded signal is given to decoder in order to get the decoded original signal.



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IV. WORKING PRINCIPLE AND OPERATION OF PROPOSED SYSTEM

IV (A). Introduction to Labview

Lab VIEW is a highly productive development environment for creating custom applications that interact with real-world data or signals in fields such as science and engineering. The net result of using a tool such as Lab VIEW is that higher quality projects can be completed in less time with fewer people involved. So productivity is the key benefit, but that is a broad and general statement. To understand what this really means, consider the reasons that have attracted engineers and scientists to the product since 1986. At the end of the day, engineers and scientists have a job to do – they have to get something done, they have to show the results of what they did, and they need tools that help them do that. Across different industries, the tools and components they need to succeed vary widely, and it can be a daunting challenge to find and use all these disparate items together. Labview is unique because it makes this wide variety of tools available in a single environment, ensuring that compatibility is as simple as drawing wires between functions.

IV (B). Operation of the proposed system

First the person enter into the license test means put the finger print in the finger print sensor. At first time the candidate details are enter in the lab view manually. Then the person entering into the test location. First the PIR sensor is sensing the candidate entry. It gives the signal to the Lab view. That the time the candidate entry will be noted in the Lab view. Then the candidate should wear the shoes. The limit switch is fixed in the shoes for the purpose of identify the candidate wear the shoe (or) not. Proximity sensor is used to identify the candidate legs placed in the vehicle (or) ground. After completing the test the signal is send to the receiver through the transmitter. The output can be viewed in the lab view. If the same candidate appears the license test for next time, that person put the finger print. The details will be automatically generated. The same candidate appears for the license test, more than three times means, license will be cancelled. That will be automatically indicated by lab view.

IV(C). Benefits of proposed system using labview

- No need of any authorities to monitor the candidate.
- There is no chance for any illegal activity like bribe.
- We can count the no of times the candidate applied for the license test that will be noted in lab view.
- Only well known driving person can get license.

V. RESULT AND DISCUSSION

Fig. 7 shows the labview output display for the automatic two wheeler license system. In Receiver side Finger Print Sensor is used to detect the entry of the candidate. For the first time the candidate details like name, address, enrollment ID are entered in Lab view manually .Then the next times the candidate details are generated automatically.

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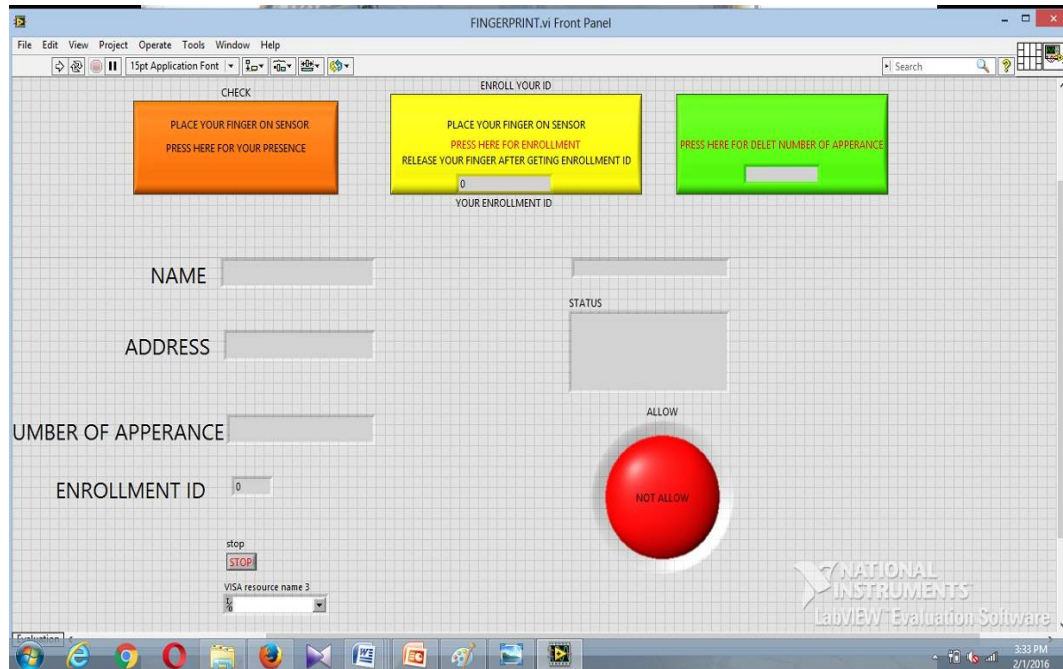


Fig.7 Expected output in Labview

VI.CONCLUSION

Monitoring the person who applied for two wheeler license whether the candidate is eligible for getting license by using lab view and also the system is used to count the number of attempts without any authorities. So that they will automatically select or reject by the system. It should reduce the manpower and there is no chance for any illegal activity.

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