

AUTOMATIC DRIVING LICENSE TEST 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 the license have to drive over a closed loop path in front of the authorities. For that, the authorities watch candidate manually. In this project, a LabVIEW with sensors and RFID module has been developed for watching the candidate for getting a license by using Lab VIEW. By using this, the candidate who fails to drive vehicle in 'H' track is monitored.

The purpose of this project is to develop a system for improving the standards of license issuing mechanism presently followed in order to provide road safety to reduce bad driving habits as well as corruption. In the present test process, the examiner must be on the field during the test. This includes a dedicated officer like the regional transport officer (RTO) himself fixing his stare at many numbers of test takers undertaking their license test. This, in fact, leads to common human errors like observation, favouritism and corruption. Presently the movements of a light motor vehicle like a car, jeep are guided along an 'H' track. The test tracker has to move his vehicle along the 'H' track in order to complete his driving test. One or more inspectors from the motor vehicles department have to stay long hours in the field wasting a lot of man-hours. A real good test taker cannot be accurately found from the existing driving licence test. The proposed technological solution of existing manual test process enables the elimination of human intervention and improves the driving test accuracy while going paperless with the driving skill evaluation system. As a contribution to the society, this technological solution can reduce the number of road accidents because most accidents result from a lack of planning, anticipation and control which are highly dependent on driving skill. This system is aimed at phasing out the current manual test procedure with help of IR sensors and RFID module and also by using Lab VIEW software it should be monitored and data stored without the help of authorities. So that it will automatically select or reject the system.

Keywords—LabVIEW; Sensors; Driving licence; RFID Module

I. INTRODUCTION

According to the study conducted by International Finance Corporation(IFC), the process of obtaining the driving licence in India is a distorted bureaucratic one. In recent days life technology has been developed and people are

interested in doing a shortcut. The growing technology introduces many advances in the day to day life. It reduces the manpower and time consumption. The study conducted by IFC also highlights the complex nature of corruption that exists in the process of issuing driving licences. Hence we can say that corruption in obtaining a driver's licence can be minimised to a very large extent by developing an automated system which eliminates tampering of a driving test results and this project also helps to get a driving licence for the candidate without any authorities. In existing system consists of many photo sensors are used in 'H' track. So, there may be a chance of signal interruption. In this project, only IR sensors are used in 'H' track. So, the signal interruption is less and also authority person need not monitor the candidate who enters for the driving licence test. Before entering for driving licence test normally LLR is applied for training and experience. It's not needed in this project. If the candidate knows the driving well then the candidate can register by filling form then they will give tag for him and at the time of the licence, test candidate should bring that tag. If it matches then only he will be allowed for driving licence test. During driving the person is monitored by the sensors. If the candidate gets qualified he can get the licence. Suppose if the candidate fails to drive properly then the test is postponed for next particular day.

II. RELATED LITERATURE

According to Motor Vehicle Act 1988, the candidate aspiring for a light motor vehicle the licence has to take up a theory test and a road test. The theory test is a computer based test which involves the understanding of the different road signals. Learner's licence is issued after passing theory test. Then after the permanent driving licence is issued to those who become eligible for it after thirty days from the date of issue of learner's licence. In order to get the permanent driving licence, the candidate should drive the vehicle on 'H' Track and also need to take up a road test. The road test is to evaluate candidate's ability in controlling vehicle. If the candidate completes the 'H' Track without hitting metal poles and also without crossing line of intersection then only candidate get the driving licence. In this proposed system used

LabVIEW software with IR sensors and RFID module. So we can easily identify candidates who get qualified.

A. Block Diagram

The hardware block diagram is as shown in figure 1

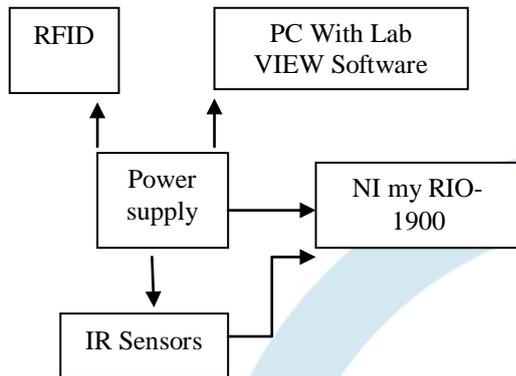


Figure 1

Whenever any candidate comes for driving licence he should come with a tag which is given for him at the time of registration. So we use RFID module, which is used as Id card and only registered candidates must allow for driving test. IR sensors are used for detecting whether the candidate completes the track without hitting metal poles and also without crossing line of intersection. If the vehicle moves perfectly in proposed track then it displays test is passed otherwise it displays test is failed.

B. Working Principle of the proposed system

We proposed system consists of following components:

- NI my RIO
- IR sensors
- RFID Module

a) NI my RIO

My RIO is a real-time embedded evaluation board made by national instruments. It is used to develop applications that utilise its onboard FPGA and a microprocessor. It requires LabVIEW software which geared towards students and basic applications. NI My RIO-1900 is a tool you can use to teach and implement multiple design concepts with one reconfigurable I/O device. Featuring I/O on both sides of the device in the form of MXP and MSP connectors, it includes 40 digital I/O lines, wifi, led's, onboard accelerometer, a Xilinx FPGA, and a dual -core ARM Cortex-A9 processor. You can program NI my RIO-1900 with Lab VIEW or C.

b) IR Sensors

An Infrared Sensor is an electronic device, that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of IR sensors measures only infrared radiation, rather than emitting it. Usually, in the infrared spectrum, all the objects radiate some form of thermal radiations. These types of radiations are invisible to our eyes, that can be

detected by an infrared sensor. In this project, IR sensors are used to detect the vehicle.

c) RFID Module

Radio Frequency Identification uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information. Passive tags collect energy from a nearby RFID readers interrogating radio waves. Active tags have a local power source such as a battery and may operate at hundreds of meters from the RFID reader. In this project, RFID module is used to check whether registered candidate is coming for driving licence. If a tag doesn't match with given information then it won't allow that candidate to attend driving licence test.

C. Implementation :

By using this project we can avoid corruption because everything here is computerised. Normally driving licence test is the ground test, here in the ground will place IR sensors at margin outside which is used to detect every time when the vehicle crosses margin.

IR sensors embedded in 'H' Track is as shown in figure 2

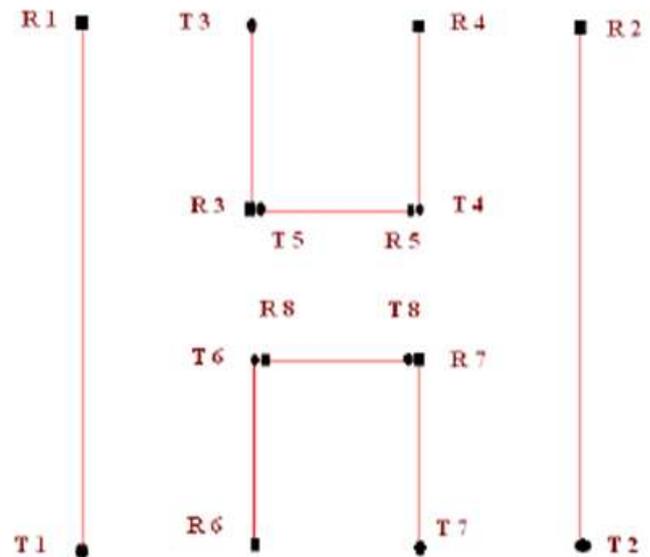


Figure 2

D. Software

Software used for coding and designing the circuit is Lab VIEW. Laboratory Virtual Instrument Engineering Workbench(LabVIEW) is a dataflow programming language. It is a system design platform and development environment for a visual programming language from National Instruments. Its execution is determined by the structure of a graphical block diagram on which programmer connects different function nodes by drawing wires.

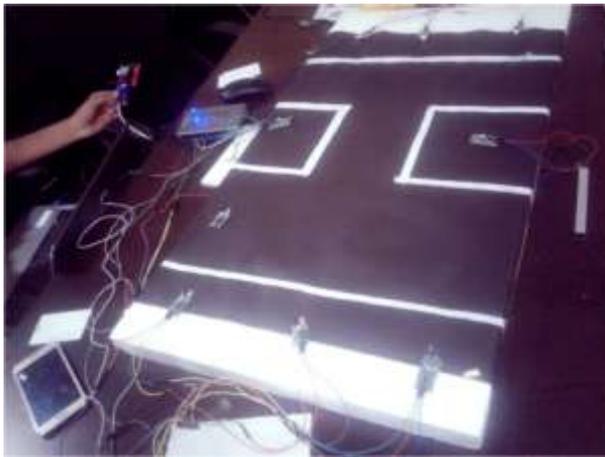
E. Prototype Of Automatic Driving Licence Test Using LabVIEW

ACKNOWLEDGMENT

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F .APPLICATIONS :

1. In real time driving licence test.
2. It involves no corruption so we can select efficient drivers.

III. CONCLUSION

Monitoring the person who applied for licence whether the candidate is eligible for getting a licence by using Lab VIEW. So that they will automatically select or reject the system. It should reduce the manpower and there is no chance for any illegal activity.

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