

## License based Vehicle Ignition System

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**Abstract** - Nowadays, we can see that many people who doesn't have license (specially children below age 18) are driving vehicles without thinking about the accident or problem it can create for them and as well as others. Our goal is to make a system which will allow driving only to the person who has license. For this purpose we plan to install a system in vehicle. For input we use keyboard and for output digital screen will be used. Now the person who wants to drive has to type their license details (numerical & alphabets) and the system will verify it with the central data. If the input details are wrong then the system will not allow ignition to turn on and the person cannot drive the vehicle. If the input details are right then the system will allow ignition and the person can drive the vehicle now.

**Key Words:** Driving License, Ignition System of IC engine, Microcontroller device, User Authentication, Theft Prevention

### 1. INTRODUCTION

Nowadays children below age 18 drive vehicle without license. Driving without license is against the rules and is also very dangerous for that children and others around him. The life of children and people around him is at risk. So we found a way to stop children from driving without license and also increase vehicle safety.

#### 1.1 Aim

To build a system which will stop the people, who are driving the vehicle without valid driving license (Mostly children under age 18).

### 1.2 Problem

#### 1.2.1 Violation of the rules of government

We all know that driving vehicle without license is crime according to the rules of government. But most of the people don't care about it. The children who are below 18 are using vehicle frequently even though they don't have a license. They just take the keys and run away with the vehicle without thinking about the consequences.

#### 1.2.2 Accidents

Many accidents happen in the world because the driver has less experience, in handling the vehicle.

Mostly the children below age 18 should not drive the vehicle because of their poor judgment and immature behaviour. And because of their immaturity they don't think about the consequences, they just want to have fun anyhow. Most children's mind is not ready for spontaneous reaction and their decision making capabilities are also not good. So when the times comes, where they have to take decision to avoid accident, they will panic more than an adult and make mistakes like not pressing breaks or pressing breaks too hard or increase speed of the vehicle etc.

#### 1.2.3 Prevention of the vehicle from theft

Many vehicles get stolen every day in the world. And most of the vehicles doesn't come with the in-built security system to prevent this theft.

#### 1.2.4 Laziness in people

It is good to have a bike or car which will help you reach your destination faster. But for a children who is below 18, he should not be relying on the bike or car and obviously

doesn't ride one too soon. The parents need to learn something that they should not give the privileges of having bike or car to the children below 18, if it is necessary or emergency. And it can also effect his speed of doing things. Because now he wants to go out on bike or car wherever he goes, because he doesn't have to put a lot of effort in driving them and he will get used to it. And if he is not curious about his fitness he will become lazy over a period of time. He will be too lazy to walk. Now we have to ask ourselves, that is what we want the future of India to learn at the teenage age, to be lazy???

So this is not just about the government rules. This is also about teaching children to use bicycle or walk to the place they want to go. So that they should understand the benefits of walking and don't became lazy over a period of time. This lazy thing looks silly at first but it can make a huge difference in the life of anyone over a period of time.

### 1.3 Objectives

- i. To stop unauthorized people to drive the vehicle.
- ii. To stop the people from violating the rules of government.
- iii. To minimize the number of accident happening due to under-age driving.
- iv. To stop the underage children from driving the vehicle.
- v. To build a system which is effective to solve the problems and change the current scenario.
- vi. To build a system of minimum prize possible but should also be very effective.

### 2. Literature Survey

Most of research papers we found were not done practically. They were just using software for the simulation. In a research paper they did research by making the actual product and succeeded but their network structure was not able to handle the large amount of data. Researchers used different type of method for identification of the person. They used QR code scanner, biometric data, OTP verification etc. Each paper had some new features added to it. Improving safety, stopping drunk people to drive etc.

### 3. Procedure

The ignition system is connected with the relay and the relay is attached to the Arduino Uno. Keypad and LCD screen is attached with the Arduino Uno. They are connected to each other with the help of jumper wires.

1. The user will input his license details (number) in the keypad.
2. The details entered via keypad will be checked with the data stored in the memory of the Arduino Uno.
3. The LCD screen will show what the user is typing so, if he/she typed wrong then he/she can see the mistake.
4. Now if the details entered are wrong and doesn't match with the data stored in the memory, then the user will have to type again.
5. If the details are right, then Arduino Uno will send signal to the relay.
6. Relay will allow the current to pass through the ignition switch to the ignition coil. And allowing the vehicle to start.

### 4. Components

- Ignition System
- Arduino Uno
- Relay
- Keypad
- Jumper Wires ( male-female & male-male)
- LCD Screen
- Laptop or PC for programming the code for circuit

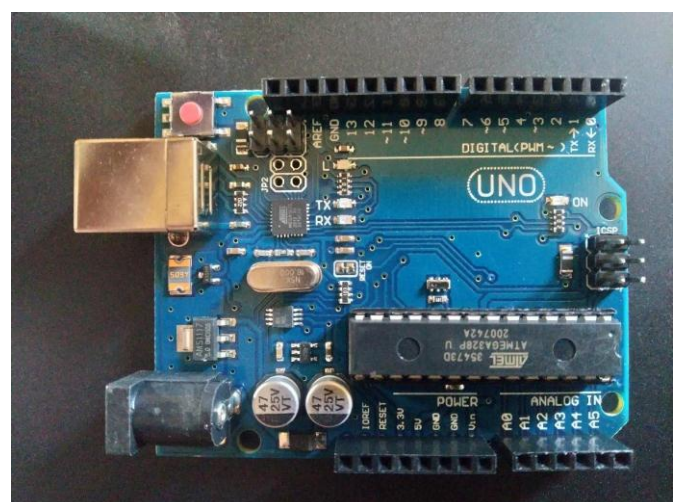


Fig -1: Arduino Uno frontside

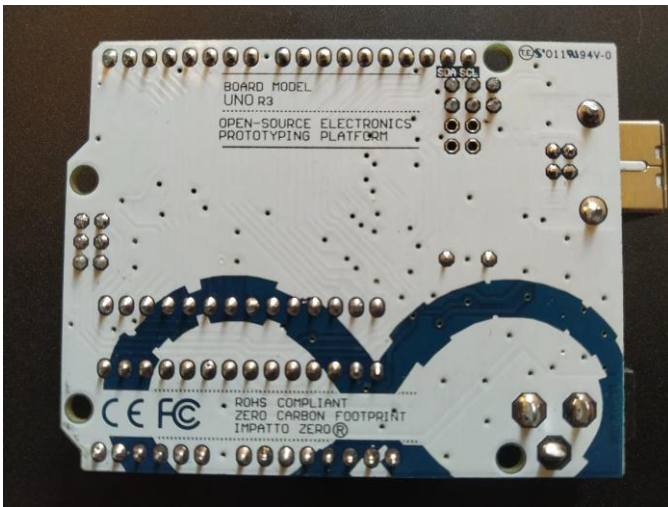


Fig-2: Arduino Uno Backside

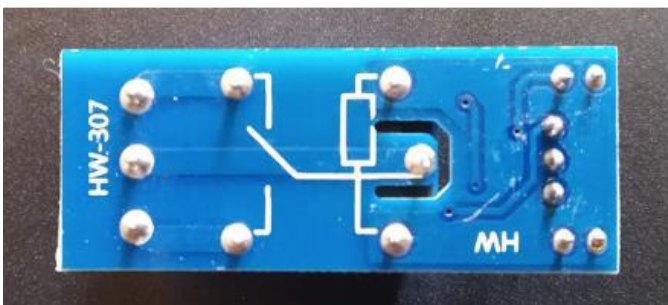


Fig-3: Front & backside of the 1 channel relay module

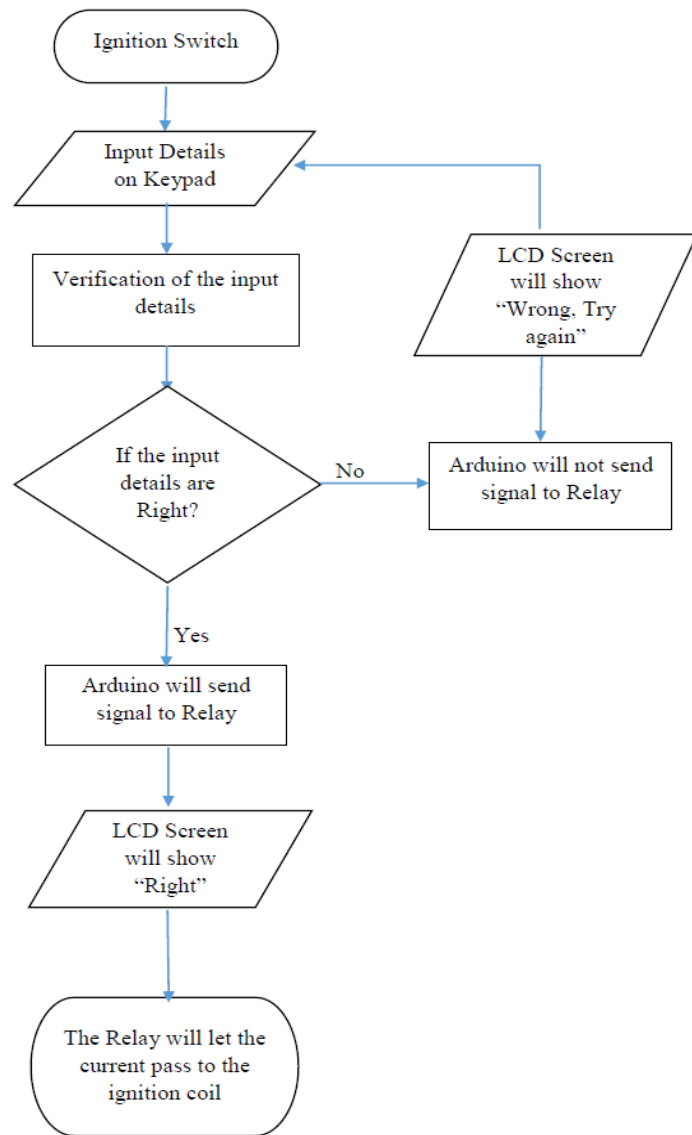


Fig-4: Flowchart of License Based Vehicle Ignition System

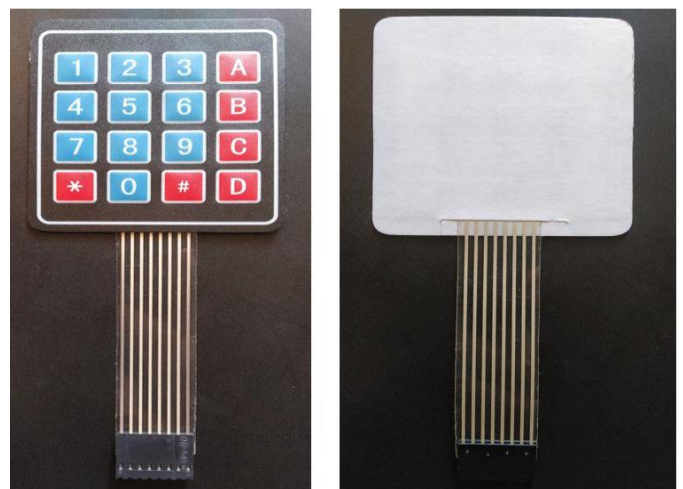


Fig-5: Front & backside of 4x4 Keypad

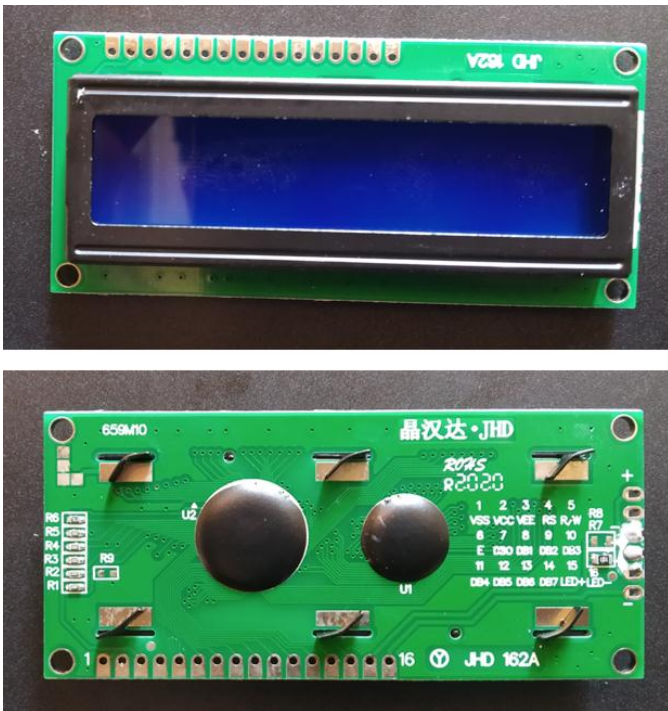


Fig -6: Front & backside of LCD screen

## 5. Conclusions & Future scope

Up till now from our project we can conclude that a system which will check the details of license of a person and verify it can be made, it is possible. The ignition system can be controlled by our license based ignition system. It will also help in preventing the theft of vehicle.

We can use biometric authentication devices to recognise the user which will be more accurate. We can also use mobile phones for recognition of user.

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