# Smart RTO Action on Wrongly Parked Vehicle

## Poonam R. Salunke[1], Sana M.A. Nadaf[2], Aasma N. Shaikh[3], Prof. Jatin M. Patil[4]

[1,2,3]*UG Student, Department of Electronic &Telecommunication Engineering, Brahmdevdada Mane Institute of Technology, Solapur, Maharashtra*
[4]*Head of department, Department of Electronics & Telecommunication Engineering, Brahmdevdada Mane institute of Technology, Solapur, Maharashtra*

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**Abstract -** *Finding a parking space in urban areas is a daily challenge for drivers across the world, due to the increasing amount of vehicles. Drivers who are looking for a parking space in peak hours are often forced to drive around city blocks until they found a free spot for parking. Using a smart RTO action such congestion making parked vehicles are control by developing an intelligent system through which the messages automatically send to the vehicle owner. The message consists of address from where the vehicle is picked and fine details. After paying the fine the owner can bring their vehicle.*

*Keywords*: **Arduino, Display, Keypad, GSM Modem, GPS, Power supply.**

## 1. INTRODUCTION

A parking violation is the act of parking a motor vehicle in a restricted place or for parking in an unauthorized manner. It is against the law virtually everywhere to park a vehicle in the middle of a highway or road. Parking on one or both sides of a road, however, is commonly permitted. A motorcycle is parked on a sidewalk or grass or in a bike rack. Moving or driving around a barricade. A vehicle is parked within a barricaded area without permission. A number of educational institutions and community organizations are also taking part in the campaign. There are also calls for stringent action against drivers who park incorrectly it is very difficult to find appropriate parking in public places due to traffic congestion in the Kingdom's major cities. There needs to be a comprehensive review of the matter because the situation is getting worse. This is especially true because of the huge increase in the number of vehicles and the growing trend of drivers to ignore traffic rules and regulations. To solve these problems the RTO office makes the several rules regulation but the people still not obey these rules there for RTO takes the action such" towing wrongly parked vehicle" and make a mark to inform the vehicle owner about his vehicle in normal case it will know directly that his vehicle is under the traffic know he has to bring it by paying some amount of fine but the problem will be in case of rainy season mark will vanish it will be difficult to find vehicle so making the solution for this a digital work is done by sending automatically a message to vehicle owner.
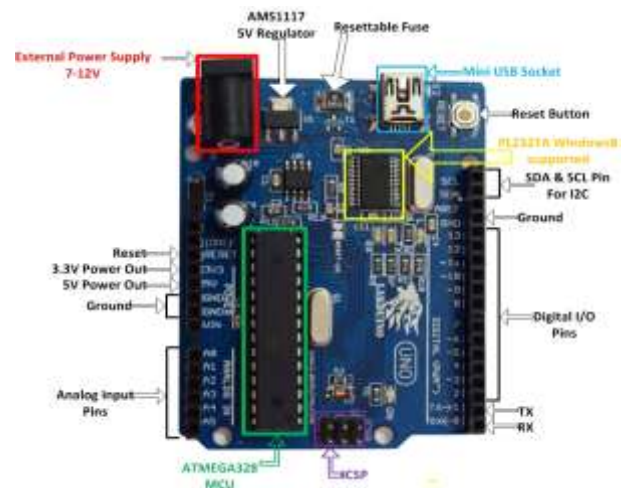
## 2. HARDWARE AND SOFTWARE REQUIREMENTS

### 2.1 Arduino Uno

Arduino Uno is a microcontroller board developed by *Arduino*.cc which is an open source electronics platform mainly based on AVR microcontroller Atmega328. The current version of Arduino Uno comes with USB interface, 6 analog input pins, 14 I/O digital ports that are used to connect with external electronic circuits. Out of 14 I/O ports, 6 pins can be used for PWM output.

Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.

The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board – you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the micro-controller into a more accessible package.



Picture 2.1: Arduino Uno

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## 2.2 GSM Modem

This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. Advantage of using this modem will be that you can use its RS232 port to communicate and develop embedded applications. Applications like SMS Control, data transfer, remote control and logging can be developed easily.

The modem can either be connected to PC serial port directly or to any microcontroller through MAX232. It can be used to send and receive SMS or make/receive voice calls. It can also be used in GPRS mode to connect to internet and do many applications for data logging and control. In GPRS mode you can also connect to any remote FTP server and upload files for data logging.

This GSM modem is a highly flexible plug and play quad band **SIM300A** GSM modem for direct and easy integration to RS232 applications. Supports features like Voice, SMS, Data/Fax, GPRS and integrated TCP/IP stack.



Picture 2.2: GSM SIM 300 MODEM

## 2.3 GPS

This design adapts the current leading GPS technology. The receiver has a Serial Communication facility which is used to interface with the external devices like PC or ARM Controller. The Antenna of the GPS receiver receives the signals, transfers the data to the ARM controller's serial communication Pins for further processing and Location identification. The processed data can be transferred to the GSM through serial communication and to the owner.



Picture 2.3: GPS MODULE

## 3. Methodology

In this project that is "**Smart RTO action on wrongly parked vehicle** "no such things need to do, by wasting a time on making any mark on road. Instead of that here all the database of the vehicle was maintained in RTO office. The message will be send to a corresponding mobile number of vehicle owner which contain all the information such as from where the vehicle is picked and now it is where and details regarding the fine including towing charges etc.
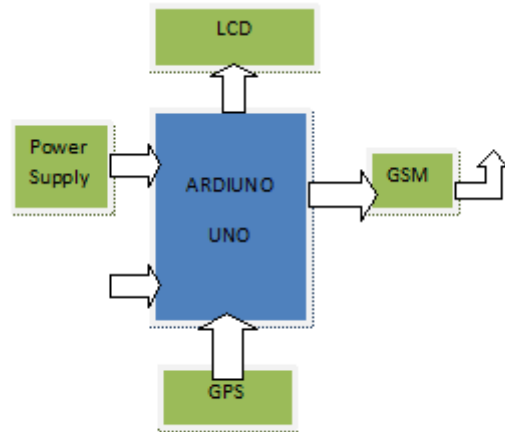


Fig 3.1: Block diagram of system

Here the process of informing the details regarding towing process to the vehicle owner will be done digitally instead of manually. After receiving the message the owner will directly get the information about his vehicle and without wasting time he will do the process he will get his vehicle after paying fine.



Picture 3.2: Pick up van will send message

**Advantages:**

➢   No need to make mark on road by RTO agent.

➢   The fine is receive on the spot may not lead to corruption.

➢   Reduce the user's wastages of time in searching RTO office where the vehicle is kept.

➤ The user will be aware about vehicle pickup details and the place address.

➤ The fine will be collected in the RTO office only so the chances of corruption will be less.
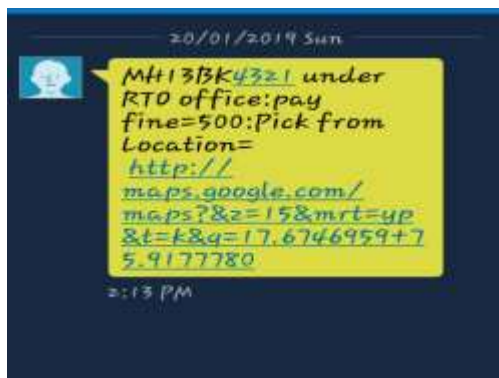
## 4. Application

Used in RTO office by RTO agent to give the information regarding the wrongly parked vehicle to the vehicle owner.

## 5. Future scope

This system will be implemented by using raspberry pi in future .hence by using raspberry pi they can capture the evidence in the form of image and send it to the both side i.e. RTO office as well as to the vehicle owner.

## 6. Result

The work of conveying message to owner of the wrongly parked vehicle is done in digital manner here the RTO agent will type the vehicle number and automatically the message will be send to the corresponding mobile number of that vehicle.



Picture 6.1: Message send by system

## 7. CONCLUSION

The purpose of review's is to converting the manually work of RTO office man into digital work by sending the message which include all the data need to receive by the receiver and reduce the human efforts by getting the information directly on the mobile phone as we all know mobile is one advance thing which help to reduce all the affordable things to make easy in within a second.

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