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CONTROLLING ILLEGAL PARKING OF VEHICLE: AN ALTERNATIVE SOLUTION TO TOWING

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Abstract — *Parking management and enforcement of parking laws can increasingly perceived as a key features of urban transport policy worldwide to mitigate parking related issues.*
In absence of poor supply with respect to parking demand, unauthorized parking shoot up in metro cities and it goes in increase as there is tremendous growth in vehicle ownership. On the other side parking management and enforcement is observed very poor in Indian cities. Unauthorized parking can lead to reduced traffic speeds, congestion, changes in modal choice, loss of revenue from valid parking line in respect for the law and even to accidents.
User are also not ready to pay and park which leads to increment in unauthorized parking. There is no effective mechanism to deal with current situation and existing methods to cope up with.
On the basis of literature review it is observed that present scenario in which system of towing and manually lock system has the limitations of capacity and not more effective and because of that loses to the government also results which creates many problems to traffic rules and regulations.
So the study is focusing on unauthorized parking issues and suggesting an alternate solution or effective mechanism to unauthorized parked vehicles..

Keywords- *Parking Demand, Penalty, Vehicular Ownership, Illegal Parking, Enforcement.*

I. INTRODUCTION

Parking is an important component of the transportation system. Vehicles must park at every destination. It is convenient in reaching destinations if Parking is properly maintained and therefore affects overall accessibility.
Parking facilities are a expensive to society, and fights for parking are among the most common problems facing designers, operators, planners and other officials. Such problems can be often defined either in terms of *supply* (too few spaces are available, somebody must build more) or in terms of *management* (available facilities are used inefficiently and should be better managed).
Managerial solutions tend to be better than expanding horizon because they have more planning objectives strategically:

- Reduced development costs and increased affordability.
- More compact, multi-modal community planning (smart growth).
- Encourage use of alternative modes and reduce motor vehicle use (thereby reducing traffic congestion, accidents and pollution).
- Improved user options and quality of service, particularly for non-drivers.
- Improved design flexibility, creating more functional and attractive communities.
- Ability to accommodate new uses and respond to new demands.
- Reduced impervious surface and related environmental and aesthetic benefits.

II. COMPONENTS OF DIGITAL LOCK SYSTEM

2.1 DIGITAL LOCK SYSTEM: An electronic lock is a locking device which operates by means of electric current. Electric locks are sometimes stand- alone with an electronic controlled assembly mounted directly to the lock. Electronic lock can also be remotely monitored and controlled, both to lock and unlock.
Digital lock system is an open sure prototyping platform based on easy to use hard ware and software. This consists of both physical programmable circuit board (often referred to as a micro controller) and a piece of software, or IC that runs on your computer, used to write and upload computer code to the physical board.

2.2 PROPOSED SYSTEM OF DIGITAL LOCK SYSTEM:
(a) **Power supply:** A power supply is an electronic device that supplies electric energy to an electrical load. The primary function of a power supply is to convert one from of electrical energy to another and, as a result, power supplies are sometimes referred to as electrical power converts.

(b) **Keypad:** A keypad is a miniature keyboard or set of buttons for operating a portable electronic device.

Figure 1 4x4 Matrix membrane keypad

(c) **Arduino UNO:** Arduino UNO is an open-source prototyping platform based on easy-to-use hardware and software. Arduino consists of both physical programmable circuit board and piece of software, or IC that runs on computer, used to write and upload computer code to physical board.

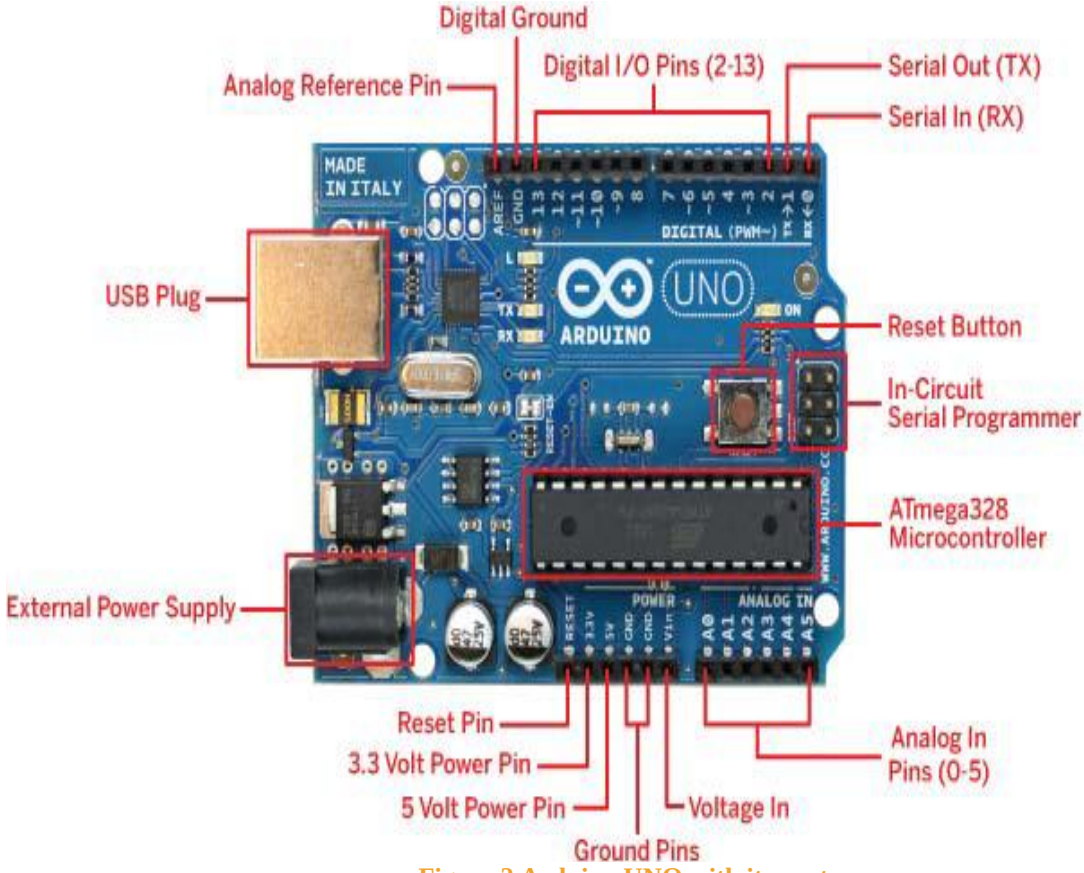
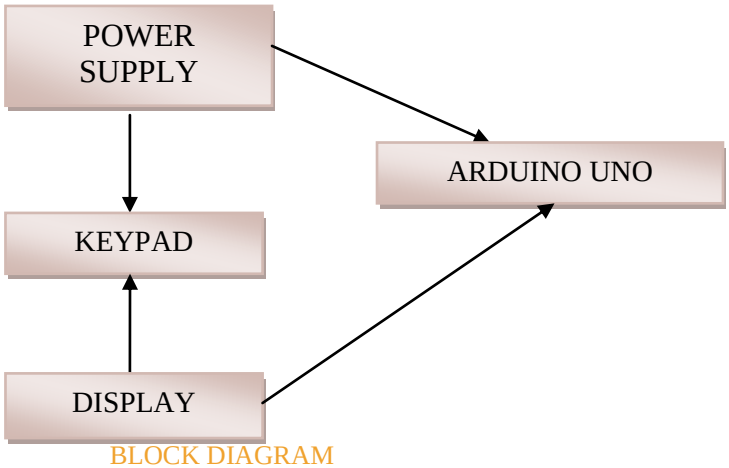


Figure 2 Arduino UNO with its parts

(d) **Display:** The LCD display is used to see whether the entered password is correct or not. It is also used to interface with the project output lock status.



BLOCK DIAGRAM

III. WORKING MECHANISAM OF THE CIRCUIT:

When the device is switched on, it rests to servo angle to lock the vehicle. Now the users are prompted to enter the password. The user enters the password to keypad which is read by the Arduino UNO. Now the entered password is checked with the predefined password. If the password matches, then the servo motor defects and the vehicles unlock.

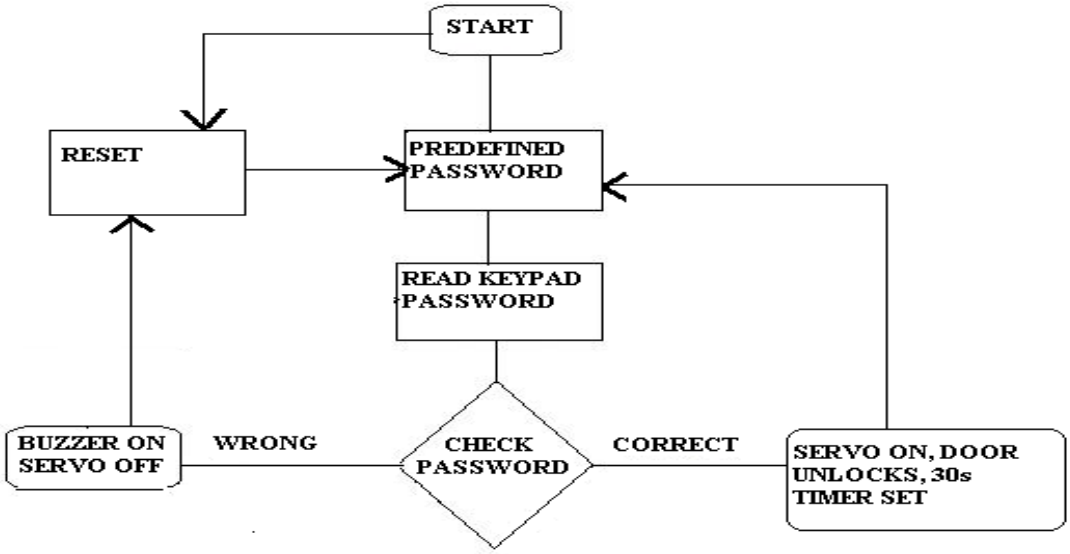


Figure 3 Flow chart of the working circuit

The step by step working as given below, When the Arduino UNO is switched on , the LCD display the entry screen message by initializing and confirming the LCD pins to Arduino UNO.

Step 1: Configure the LCD pins.

Figure 4 Password display

Step 2: Initialize the correct password.
Next, the password entered by the users compared with the correct password. If the password entered by the user matches with the correct password, then the following set of statements will be executed.

Figure 5 Showing correct password

Step 3: The servo motor defects to an angle of 90 enabling the user to unlock. Unlocks the vehicle for a specified amount of time reset the password enabling the user to enter a new password. After a time exceeds the servo defects the angle back to 0 degrees.

Figure 6 Time activated

Else, the following set of statements will be executed. Due to the entry of wrong password, the servo does not defect and hence the vehicle will be locked invalid code. Message of invalidity will be display to the user while LCD and return to the start. The password is reset enabling the users to enter of fresh password. In the above cases, the vehicle will be unlocked by the moment of servo to particular angle or remaining still depending upon the user`s entered password.

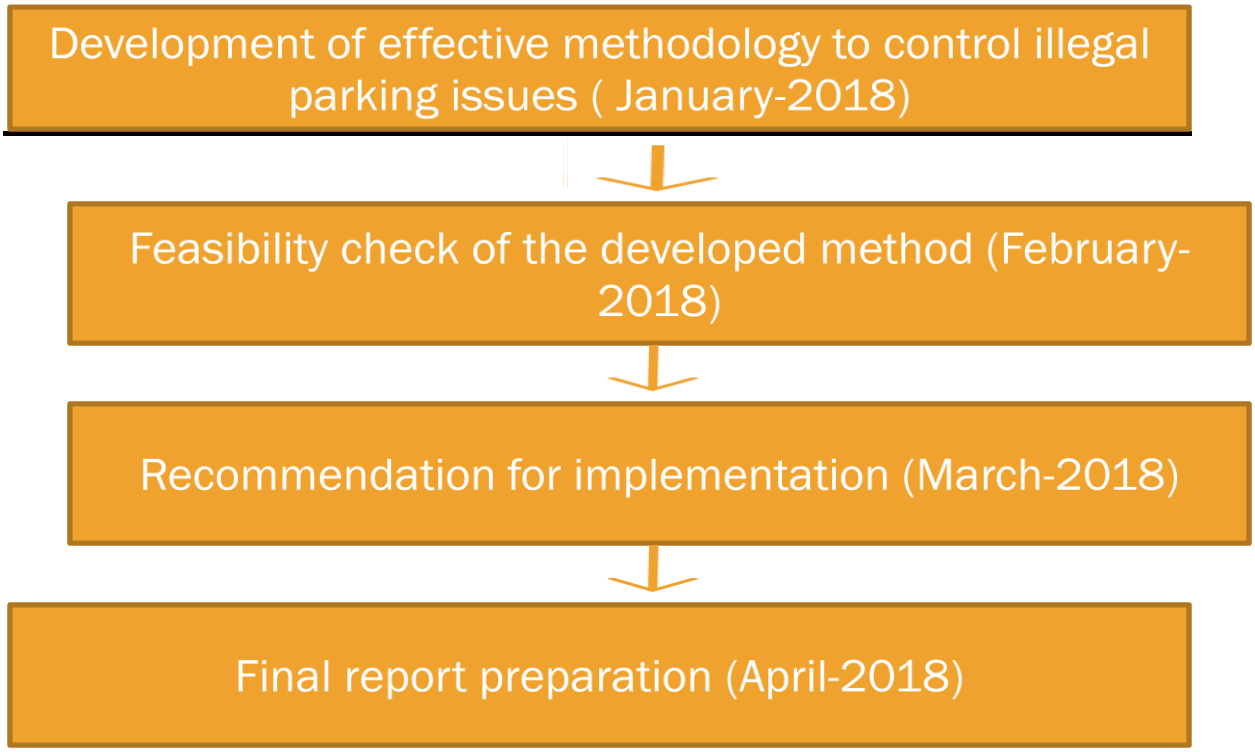
Figure 7 Dead line timer

Figure 8 Incorrect password enter

IV. COMPARISON OF DIGITAL LOCKING SYSTEM WITH EXISTING PARKING FACILITIES

Wireless sensor networks have attracted increasing attentions from both academic and industrial communities. Our project aimed at developing an intelligent parking system that is more cost effective and user friendly than the already existing systems. The first phase aimed at making cars detectable in the parking lot through the use of sensors, while the second phase aimed at communicating the collected data to the user remotely. The system was created and tested in two ten-lot parking lots where it was tested physically in section and in a simulation mode in both car park sections. 90% accuracy was achieved by the project, which is inside of the satisfactory levels of utilization.

Future Scope



V.CONCLUSION

- No issues of capacity for parking zone.
- It gives better effectiveness as compared to the existing parking facilities.
- Lesser manpower required for digital or coding system.
- Higher penalty charges are required.
- Strict rules and regulations against condemned.

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