

PARKING REPORTER

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Abstract— The project entitled “Parking Reporter” presents a system which provides a solution for reporting of illegally parked vehicles at unowned parking spaces. Due to rapid increase in vehicle density and less availability of free parking spaces vehicle owners use to park at any free unoccupied areas which causes problems for other people. Those free spaces are owned and it is considered as illegal parking’s which is very difficult to report live. The study proposes an easy and simple approach to report those users and alert them to move their vehicle and free that space. This system is based on the usage of GPS and an application of real time data transferring through web sockets and this all implemented in a mobile application. The Parking Reporter will make finding illegal parking’s easy and quickly emptying of unauthorized parking spaces.

I. INTRODUCTION

Unauthorized parking of vehicles has been an issue for a long time, several ways have been tried to report these types of parking. But, the main problem is that live reporting of a parked vehicle is difficult, so the driver is unaware of the issue and takes time to reach the location and free that space. Another problem is that if the owner empties the space before comes in vision of the traffic department so officials cannot take any legal actions against vehicle owners because they are not caught red handed. These illegal parked vehicles cause gathering of private spaces, block paths and generate traffic. Our design is simply built on the usage of GPS technology and real time computing to capture vehicle information and reporting of issues to the vehicle owners so they get aware of the problem caused at that instant. The main idea revolves around a mobile application which uses mobile GPS and sockets for real time data transfers and reports. Web Socket is a communication protocol providing full duplex communication channels over a single TCP connection. It provides two-way interaction between client and server, means server can send content to the client without being requested and keeps the connection open for as long as needed unlike HTTP.

This project is an application of sockets technology, due to which we are able to generate real time alerts on the owner’s mobile from the server. The mobile GPS will provide latitude, longitude and we can capture addresses from this data (with the help of Google Maps API) which will be saved for any further actions. This data can be utilized by Government officials to take necessary legal actions against the owner, also it will be helpful for analysis

II. RELATED WORKS

Government of every state has their own way for reporting such illegal parking, almost all of them are implemented by filling an online form with the necessary details like brand and model, license plate number with some clicked pictures of the parked vehicle and then the traffic department will take care of the issue. This procedure cannot guarantee the actual location of the vehicle therefore judgment is questionable.

These measures have been taken for reporting vehicles parked at non parking zones, government spaces and causing problems to people. But there are situations when people park at private spaces that belong to someone like in front of houses, paid parking and at owned properties. No step or solution had provided for these cases.

III. PROPOSED SYSTEM

The proposed system is covering two main scenarios discussed: report of illegal parking at non-parking zones and alert vehicle owners to free private parking spaces.

A. System Design

The design of the system presents the skeleton of the project upon which the system relies. The goal of design is to produce a module of the system which is used to build the system.

A single app is used for the whole system. First the user downloads and registers himself after validation by providing necessary information.

A vehicle owner can list his owned vehicles in the app and printable QR codes will appear.

If a person encounters a parking issue that should be reported then he just needs to scan the QR with the app and an alert is popped on owner’s mobile by the app.

B. System Architecture

- User downloads the app and registers himself with the information asked (full name, mobile number), and verifies the mobile number with OTP.

- Owner will add vehicles to the app with their name, plate number and mobile number of the person who drives it. A unique QR is generated by the app which he has to paste on the respective vehicle.

- When a person wants to report a parked vehicle he just scans the QR code attached to the vehicle.

- A 1 minute timer starts and after that user again scans the QR, during the whole procedure the reporter needs to be

close to that vehicle, this ensures a valid request and then the request is sent to the server.

- Server will send an alert to the owner's app in real time(with the help of web sockets) and the app will pop a notification on the owner's mobile. Also there will be a text message to the mobile number mentioned on registration to ensure delivery in case of bad internet connectivity.

- Now the owner can report to the location at instant and fix the issue.

If still the owner does not come to the location then the request is recorded for further legal procedures and the reporter has the authority to confirm it so that it will be automatically sent directly to the traffic department via email

IV. APPLICATIONS

1. Owned parking spaces can be cleared quickly.
2. A parked vehicle in front of someone's house can be reported to the driver.
3. Vehicles gathering roadside areas or improperly aligned that cause roadblocks and traffic can be reported.
4. Owners get caught for illegal parking with their live location and time so that the traffic department can take necessary legal actions against them.

V. CONCLUSION

The problems that have been arising during day to day life situations are described as well as the solution that our system provides fits into the problem with an easy and automate approach. With the implementation of our system:

- reporting of illegally parked vehicles becomes easy and quick
- alerts are generated in real time at instant of reporting for the owner
- the traffic department can easily take actions against them by having proof with GPS.

REFERENCES

1. This page shows the already available ways for reporting illegal parked vehicles.
<https://www.wikihow.com/Report-Illegal-Parking>
2. Here is an app which files complaint by clicking pictures and reports the issue.
<https://www.snapsendsolve.com/report-illegal-parking/>