

# Car Parking Locator Using QR Code

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**ABSTRACT:** Our daily lives in the City have become faster with Wider roadways and Faster Vehicles. Things that come along are maintenance, traffic and parking. With the rise in number of vehicles parking is getting a bigger pain point for every driver. Due to rush hour, peak work time and tasks running in mind, People park anywhere and vaguely. Be it in Malls, Cinemas, Nearby Shops people tend to forget their parked vehicle. We propose an idea which can help solve the problem of parking allotment and searching the allocated parking area of the vehicle. In this system, Admin can be any parking vendor; who maintains the Parking space. The Driver has the android app, where a secret number is generated and this secret number will be given to the admin to generate QR Code. Considering there are more than one person in the vehicle, the number of QR Code will be generated. Admin will now give the parking allotment for that vehicle on its registration. Although the Mall parking areas do have Alphanumeric postings to remember the parking location, this project focuses on all types of parking. Once the vehicle is parked, the time comes when we depart to home from work, you need to find a vehicle. Now simply scan the QR Code at the entrance of the Parking with the Secret code entered into that system, that will show the location where your car is parked. The concept of Shared QR Code, allows only authentic users to find the car.

**KEYWORDS:** QR-code, Parking allotment, authenticated users, User login.

## I. INTRODUCTION

In the busy run of urban life, parking is a huge pain point. Moreover, the location of an individual's parked vehicle sometimes is a great pain since there are multiple things going on in Human brain. Hence we stand to solve problems using Technology that is by using Shared QR code mechanism for users with shared secret keys. With every technology, there comes some disadvantages,

that is what if someone tries our secret code with different QR code! Well, again that is taken care of. We propose to develop QR code based car parking locator systems. This is an android application with web portal application services by using HTTP protocol over the internet. This user has to use an android application where a secret number is generated and this secret number will be given to the admin to generate QR Code. Considering there are more than one person in the vehicle, the number of QR Code will be generated. Sensors will check the empty parking slots and will now give the parking allotment for that vehicle on its registration. Admin uses a web portal over the internet. Whenever a user wants to find his car from this system it simply scans the QR code at the entrance of the Parking with Secret code entered into that system that will show the location where the car is parked. From this application, users get help to park his car with security and easily find the parking location of a park car.

## II. MOTIVATION

So the parking system has to provide security to the coming user and safely park his/her car. Under parking, while the user parks vehicles, the parking system has to provide security from car thief or unauthorized access, and hence car parking observes problems. Be it in Malls, Cinemas, nearby Shops people tend to forget their parked vehicle. We propose an idea which can help solve the problem of parking allotment and searching the allocated parking area of the vehicle. Everyone wants to park his/her vehicle safely and under security. From this application the user saves his time for parking and avoids the problem of traffic and parking of cars anywhere on road and unauthorized access through it save and from this you easily get your car under security and you know your car location from this android application.

### III. LITERATURE SURVEY

The author proposes the idea of a QR based Attendance system. The student needs to scan the QR code so as to mark their presence in the lecture. The output is displayed for the student at the beginning of each lecture thereby avoiding any discrepancy in the attendance system. The paper shows an Android-based system for identification of objects based on reading of QR codes. The system is developed to facilitate identification of various items that exist in already created inventory. The designed system is composed of a database, Web service for intermediary access to the database via Web, and the client Android application, that can be run on mobile phones or tablet computers. The system brings forward the idea of smart bus tracking system that any passenger with a smartphone or mobile device with the QR (Quick Response) code reader can scan QR codes placed at bus stops to view estimated bus arrival times, buses' current locations, and bus routes on a map. Anyone can access these maps and have the option to sign up to receive free alerts about expected bus arrival times for the interested buses and related routes via SMS and emails.

### IV. QR CODES

QR code stands for Quick Response Code. QR code is a machine-readable code consisting of an array of black and white squares arranged in horizontally and vertically components typically used for storing information for reading by the camera on a smart-phone or some imaging device. It is formatted algorithmically by underlying software using Reed-Solomon error correction until the image can be appropriately interpreted. Data is then extracted from patterns present in both horizontal and vertical components of the image.

A QR code, as shown in Fig.1 is read by an imaging device, such as a camera, and formatted algorithmically by Underlying software using Reed-Solomon error correction until the image can be appropriately interpreted. Data is then extracted from patterns present in both horizontal and vertical components of the image.

The QR features are listed in table 1 below.

TABLE 1: CAPACITY, FEATURES, AND STANDARDS FOR QR CODE

	QR Code
Developer (Country)	DENSO (JAPAN)

Numeric	7.089
Alphanumeric	4.296
Binary`	2.953
Kanji	1.817
Major Features	Large Capacity Small Printout Size High Speed Scan
Standards	AIM International JIS ISO



Fig- 1: QR Code

### V. ALGORITHM

**Step 1:** Accept user details and vehicle info.

**Step 2:** Parking Allotment.

Step 2.1: Get parking slots information.

Step 2.2: Will check for the free slots.

Step 2.3: Allocate free slot to the vehicle.

Step 2.4: show allotted slot to user

**Step 3:** QR code

Step 3.1: user will add his information on App

Step 3.2: Android App will generate a QR code for users info with vehicle information and parking details.

**Step 4:** Parking Exit

Step 4.1: User will have to show QR code to the checker.

Step 4.2: checker will scan QR code with his android app.

Step 4.3: information from checkers app will be sent to system by the sensor

credentials.

**Step 5:** if user details match user will be able to leave otherwise not

**Step 6:** Stop.

## VI. CONCLUSION

These days it is important to make use of technology to ease our lives. Simple day to day problems which are increasingly becoming massive obstacles can be solved by making use of technology. QR being the unique codes brings in a lot of information and solves the problem allocation of spaces in parking slots digitally using existing and basic technologies to achieve a more compatible and user-friendly system. System is proposed on QR-code based car parking locator which helps making ease in parking and the ensured safety of parking by avoiding technological breach by making use of Shared QR Code & Secret key for verification of genuine owner.

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