

SMART PARKING USING IOT TECHNOLOGY

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Abstract: Our daily lives in City have become faster with Wider roadways and Faster Vehicles. Things that come along is maintenance, traffic and parking. With 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 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 admin to generate QR Code. Considering there are more than one person on/in 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 vehicle. Now simply scan QR Code at the entrance of the Parking with 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 user to find the car.

Keywords: Cloud of Things; Smart Parking; Smart City; Arduino

I. INTRODUCTION

In busy run of urban life, parking is a huge pain point. More over the location of an individual's parked vehicle sometimes is a great pain since there are multiple things going in Human brain. Hence we stand to solve problem using Technology that is by using Shared QR code mechanism for user with shared secret key. With every technology, there comes some dis-advantages, that is what if some-one 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 system. This is android application with web portal application services by using HTTP protocol over internet.

In this user has to use android application where a secret number is generated and this secret number will be given to admin to generate QR Code. Considering there are more than one person on/in vehicle, the number of QR Code will be generated. Admin will now give the parking allotment for that vehicle on its registration. Admin uses web portal over internet. Whenever user want to find his car from this system it simply scan 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 user get help to park his car with security and easily find park location of park car.

Smart city uses the information, communication and technologies to improve the operational efficiency for the public, helps in accelerating towards the improvement quality of life for citizens. Internet of Things (IOT), Automation, and Machine Learning are the emerging trends which drive towards smart city adoption. Any city can be considered for smart city initiative, by introducing system like, smart parking system uses a mobile app to help the drivers to locate parking slots, smart traffic management to track and analyze the traffic flows,

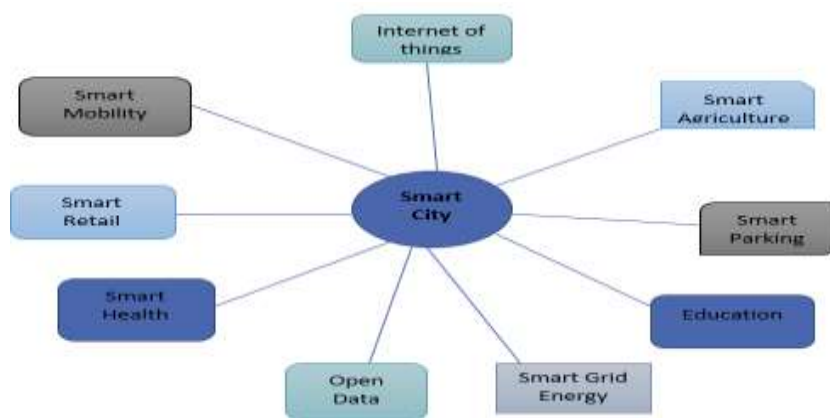


Fig 1. Smart City Components

II. LITERATURE REVIEW

1. Reversible data hiding with histogram based difference expansion for QR code applications:-

In this paper, new algorithm is proposed in reversible data hiding and application associated with the quick response (QR) codes. QR codes are random patterns, which are observed on the corner of web pages. QR codes aims at convenience-oriented applications for mobile phone users. Mobile phone cameras are used for scanning QR code. As they are present at the corners of web pages it may reduce the quality or value of the original image. Main purpose of this paper is to get the original value of image and hiding QRcode into original image and increase its embedding capacity. Corresponding hyperlink is accessed first when image with QR code is browsed.

2. A Novel Secret Sharing Technique Using QR Code:-

In this mobile devices uses barcode tag to read the content directly. There is a risk of security problem in barcode. For this purpose QR code is designed for secret sharing mechanism. Due to this data privacy during data transmission is enhanced. The secret data is further divided into some shadows and they result into embedded barcode tags. They must be equal or greater than the threshold. The main advantage of this technique improves data security for data transmission. Barcode provides a convenient way for people labeling a tag n product. Barcode is basically of two types: - 1- dimensional and 2- dimensional. 1-dimensional puts emphasis on product identification. 2-dimensional puts emphasis on description. The main disadvantage of barcode is limited storage in 1-d & 2-D.

3. Nested Image Steganography Scheme Using QR-Barcode Technique:-

In this paper nested steganography scheme is done by using image processing and QR-barcode technique. Basically two types of secret data are covered under barcode that are lossy and lossless data. In this paper median filter is used to avoid the distortion of secret data. So this can also help to protect the data from the JPEG attacks.

4. Advanced Steganography Algorithm:-

Due to excessive raise in communication technology, now it is a actual problem / challenge to send some confidential information data through communication network. For this reason, Nath et al. developed some information security systems, combining cryptography and steganography simultaneously, and the present method, Advance Steganography Algorithm QR, is as well individual of them. In the present paper, the authors present a new steganography algorithm to hide any minute encrypted confidential data inside QR Code, which is then assemble in random order and then, finally embed that randomized QR Code inside some ordinary image. Quick Response Codes are a category of two-dimensional matrix barcodes used for encoding data. It has become very popular in recent times for its high storage ability. The present technique is Advance Steganography Algorithm QR is a arrangement of strong encryption algorithm and data hiding in two stages to make the whole method very hard to break.

III. PROBLEM STATEMENT

In QR code based parking locator system aim to provide help to park car without wasting driver time. Provide security to user's from car thief or unauthorized access From QR code, user's easily find his car location.

IV. PROPOSESED APPROACH

In metropolitan areas, people prefers cab or car as convenient to go to shopping centers, theaters or hotels. Finding place to park vehicles in densely populated area would waste time and consumes fuel during searching for parking space. Hence there is a need for assistive technology, which would communicate the availability of parking slots to the registered user's. Mobile app would allow the users to register for the service and if the destination and estimated arrival time is specified, app need to find the free parking space and send the

location to the user. User makes the online payment to book the parking slot. Figure 2, illustrates the architecture of smart parking system.

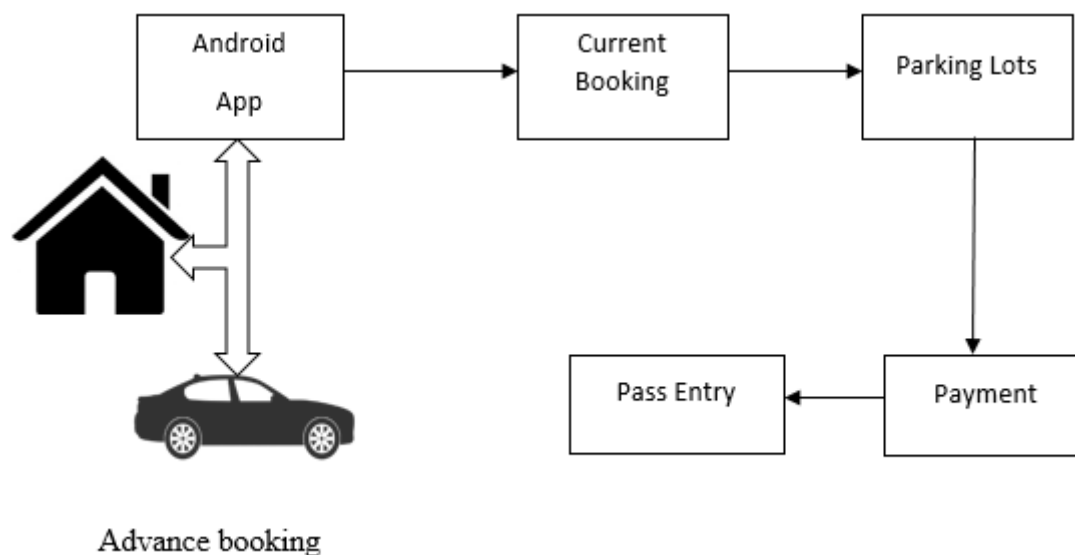


Figure 2. Architecture of Online booking for parking slot

In Proposed system we are developing QR-code based car parking locator system in this admin manages application by web portal using web services over internet. In this Android Application, user all has to do is Login – Secret code generates Shares to admin & Car parking is allotted with QR Code. To elaborate, User Login on application by providing info as Car number, person name, secret key. Show QR Code- Generated QR Code is shown on user's mobile app. Location User requests to admin then admin gives location of parking and for QR Code checking, has info (Person Checking-In)Checker Enter person name. Scan QR Code Checker scan user app QR code send to server and retrieve info on mobile. Validate Bike Checker checks all information given from server then validate with Name if information no valid then show message else exit from parking.

CONCUSION

In this we have discussed about QR code and it can be captured using mobile phones cameras. We proposed new algorithm in reversible data hiding. This algorithm has the capacity of hiding the information and bit side information. But in practical the existence of such code may reduce the value of original image and may also conceals some information contained in original image. User can access the image on web page with QR code and then remove the QR code from corner of the image and original image can be recovered. It can be used in online shopping sites and can also be used in many more applications in future.

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