QR CODE IMPLEMENTATION IN CAR PARKING LOCATOR

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Abstract : The moment you move out with your car & need to halt somewhere finding place to part your car becomes a problem. Parking a vehicle is a problem these days parking. Although various traditional PGIS (Parking Guidance Information System) exist, but there are few users follows proper parking system because it is difficult for such static systems to disseminate information on a wider scale. So it is to provide a dynamic solution by introducing the concept of Car Parking Guidance System over the internet and also using one of the latest techniques available today i.e. the QR code for the user's ease. The system is basically designed for a parking which can further be extended as per required. This system enhances parking system available in the colleges, school & companies. This system runs on a cell phone platform and provides a visual screen of parking lots available to the user so that the user can book space . The android application will be developed that can incur the parking information which will upload on the web map server. This system reduces the time which is involved in searching the parking space for reducing the fuel consumption and user's frustration and it helps to maintain proper parking system.

IndexTerms **- Smart Parking System (SPS), JAVA(JDK), .net , Android Studio,QR.**

I. INTRODUCTION

In this chapter, we would shortly describe on the introduction of the project and its requirement needed for Smart System Parking and its purpose and aim. And also, a development plan with its design. An overview of the parking system basically planned to be developed is also being presented here.

II. AIM AND OBJECTIVES

This project will be located on a special parking area with the help of QR code based Smart Parking System. And to reduce traffic as well as energy consumption and air pollution. Thus, this project has the optimal solution that gives liberty to the people to book their own parking space as per their need and specification of the vehicle.

The purpose of this project is to make people more convenient to park their vehicle, which in this case is Reservation Based Smart Parking System, The question to be addressed here in this module is, how to give parking slots to the drivers?, The project is to mainly answer this particular question addressed by providing an Android application to reserve parking slot as per drivers need.

III. LITERATURE SURVEY

In this chapter we will see several smart parking system which helps driver to park the vehicle but there were some disadvantages in that system which are overcome in our paper. We mainly focusing on designing a new smart parking system that assists drivers to find vacant parking spaces in the region they are going to a specific parking area or district.

In [1] Blind Search

Blind searching is the simple system applied by users while there are no parking instructions. In this case, the drivers keep travel slowly for parking spaces within a certain distance to their destination. The drivers will stop searching until finding any suitable and available space. Otherwise, the drivers will extend the searching area and continuously look for available spaces in the neighboring parking space .

Driver can park the vehicle at the allotted zone, and this is valid up to certain booked time only after that the priority will be given to next user.

In [2] Existing Parking Systems
 In the Vision Based Method

Monitoring detection technology can be divided into two systems. The first estimates the number of remaining available spaces for the entire parking lot by counting incoming and outgoing vehicles. The second monitors the status of each individual space and can be used to guide a car to a available space. To detect the position of an individual parking space different technique have been utilized, (thus it requires many sensors), or CCTV cameras placed at a high position.

Sensor Based Method

Another detection technology uses sensors to detect available spaces in a parking slot. Different factors play a role in choosing the proper sensor, including size, reliability, adaptation to environmental changes, robustness and prices. Sensors methods are categorized as either intrusive or non-intrusive. Intrusive sensors need to be installed directly on the placement surface, so digging and tunneling under the road surface are required. Non-intrusive sensors only require fixing on the ceiling or in the ground. Ultrasonic sensors are categorized as non-intrusive sensors. The range of Ultrasonic sensors will be transmitting sound waves between 25 kHz and 50 kHz. The ultrasonic sensors will used for reflected energy to examine and detect the status of a parking space. The head of an ultrasonic vehicle detection sensor are emitted ultrasonic waves in every 60 mill seconds and the presence of vehicles is determined by time differences between the emitted and received signals.

IV.   PROBLEM STATEMENT

1. Now a days parking is a bigger problem to the driver for parking the vehicles due to QR code Implementation of Car parking it becomes easy to park the vehicles.

2. Due to very busy schedule of the peoples, work hour, rush hour people park at anywhere and anyhow.

3. People may face many difficult problem while parking at malls, colleges, cinemas.

4. So, to solve this all problem we developed a QR Code for car parking, which can be easily allotted place for vehicles for parking.

5. 5 .For QR Code the authentic user only can find the car.

6. If the user has to find his car then he has scan the QR code in his system at the entrance of the parking which will be the secret code then the user will find the location where the has been parked .

7. From this QR Code user can easily parked the vehicles and find the car where the car is parked at which location.

V. PROPOSED METHODOLOGY

In this section, we are representing the architecture and design of proposed OR code based smart parking system, which implements a reservation service and gives the details information of generation of the QR code algorithm.

i.   The Fig. shows three components in the smart parking model, including admin, user and the Database. The app will show the parking slot as per the region selected with is price, type and time. According to location verified of that region specific region of parking slot is been showed.
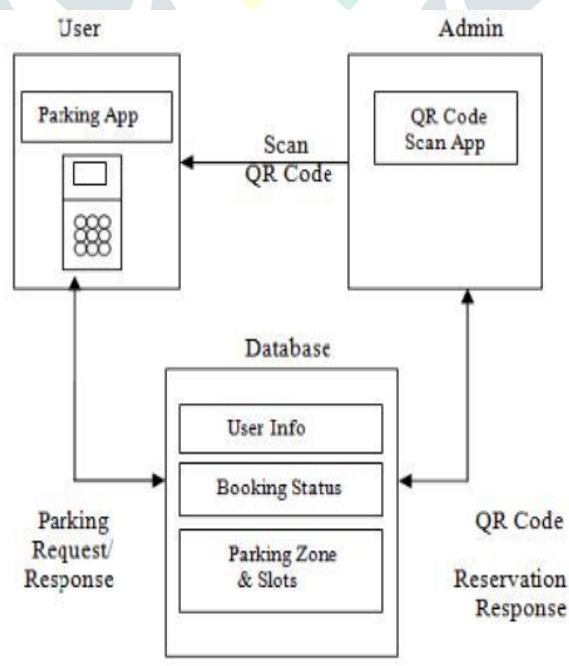

fig. 1. block diagram of proposed system

The user will receive the information as per the selection of the parking slot and region for a selected period of time. It will also check if there any space is available at that particular location. As per the user information unique QR codes is generated by SPS in which the identity of the user is encrypted which can be used for authentication process and send it to the user. After each user booking the database is updated which shows which slots are occupied and which are empty. The Ethernet Network identifies each user by the randomly generated unique QR code, Ethernet network directly scan the QR code by QR code scanner and verify the details and authenticated user. Due to this the time consumption is less and there is no need of communication between the user and Ethernet network making authentication fast and convenient.

    ii.   QR code (Quick Response Code)

In QR Code (Quick Response Code) is developed by Denso Corporation in 1994. These involved 40 versions in QR Code, the four levels of error correction, and the
highest version symbol can encoding 7089 numeric data or 4296 alphanumeric data. The highest level of error correction allows 30% of the symbol code words. In addition to, QR Code have many advanced features:

1) Data is the high capacity encoding of high-capacity encoding of QR code, its maximum symbol can encode 7089 characters; While PDF417 only encodes 2710 characters.

2) Optimized with high speed reading reading CCD, it can recognize more QR code symbols per second than PDF417 symbol for encoding the same data capability.

3) Readable matrix in any direction with 360 degree QR code is two-dimensional barcode; It can be read from 360 degrees in any direction. But stack two-dimensional barcode, for example, PDF417, 360 degree readable is difficult to realize.

fig. 2. qr code

Algorithm

QR Code Generation Algorithms: (GenQR)

STEP 1: Get started

STEP 2: Input the source file(infile) or Text.

STEP 3: Call GenSig (infant)

STEP 4: Compress 'suepk','sig' and 'infile' in 'test.zip' file

STEP 5: Create an empty string data

STEP 6: Change 'test.zip' to string and store in 'data'

STEP 7: QR code image format and resolution input to generate

STEP 8: Input error correction level

STEP 9: Zxing [1] Use 'Library Data' to convert 'Data' into bitmatrix matrix 'bitmatrix'.

STEP 10: Write bitmatrix in an image

STEP 11: End

BitMatrix represents the 2D matrix of bits.

QR code decoding Algorithm: (Decode_QR)

STEP 1: Get Start

STEP 2: Input

STEP 3: Create a binary bitmap object 'bitmap' from the source image

STEP 4: decoding 'bitmap' using the zoxing library method and storing it in 'result'

STEP 5 Change the 'result' to string and write it on 'result.zip'.

STEP 6: Remove result.zip

STEP 7: If the user is called, VerSig ('supek', 'sig', infile)

STEP 8: End

VI. AKNWOLEDGEMENT

VII. CONCLUSIONS

In this project,we will develope a QR Code implementation for car parking.
We will also provide all the services for the user requirement. We will store all the details of the user for the car parking and the details of the user .
By this people can easily park the cars and it may reduce the traffic congestion and it reduces the traffic due yo the parking
And it helps people to find location of parking slot.

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