Smart Parking Application

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Abstract: Today, most parking lots operate on a manual parking system, where vehicles enter, find an available space, pay for parking at the counter, etc. In contrast, parking booking apps allow users to save time and money. People use these sites to provide parking for Light Motor Vehicles (LMV). Users and owners of parking spaces will be located directly using the Global Positioning System (GPS) API. In addition, the software will assign a unique identification number (UID) to the parking space and display a live list of available parking spaces. This paper will discuss building an application that covers all the features and aspects of vehicle parking and the basics used to build it.
Keywords: Available Slot (GUI), Online payment, Live location (GPS), Data Records, Web application;

I. INTRODUCTION

Parking management system to manage the records of vehicles entering and exiting the parking lot. It is easy for the administrator to retrieve the information if the vehicle has been visited by a number that can retrieve the information. Nowadays, parking is a major problem in public places like malls, multiplex networks, hospitals, offices, and markets. The parking lot has several lanes/spaces for parking. So, you have to find all the paths to stop the vehicle. Also, it involves a lot of work and investment. Instead of towing the car, you can park it in a safe and secure place at a low cost. Parking control system, parking control gate, toll gate, time and attendance machine, car counting system, etc. Finding a free parking space thus takes a lot of time and cars can use up to 80% more gas than necessary. These problems occur more frequently during festivals, holidays, and weekends, making it impossible for vehicles to park safely and in a free space. The goal of this project is to create a Smart Parking Application that allows time management and vehicle management through license plate recognition. A system that tracks the entry and exit of cars, maintains a list of cars in the parking lot, and determines whether the parking lot is full. It will determine the amount of time it takes to get to the car.

II. LITERATURE SURVEY

Aims This project can be applied to any university campus, scanning the availability of parking spots to reserve parking spots. [2] QR code to access parking construction and park at assigned spot, reworking and networking traditional parking system into a smart system by integrating IoT technology, this will help us to remember that with this approach, traditional parking decal / paper can be eliminated. And it can be replaced with a digital QR code. Moreover, the prototype smart parking system is in step with the smart campus initiative and cashless society theme that is being implemented in many college campuses around the region.

It was an assignment in which a useful resource handling module takes the place of the users and provides suitable options for the individual through thinking. [3] About parameters including distance, cost, time and traffic while assigning a parking space to a user. In this machine they showed. A basic allotment of car parking was done. First, the current user location is retrieved. After that, the use of this location, places near the peak 3 said that the three main levels for parking are reserved, waiting, free This enables us to identify the needs of the person and a way to fulfill it is quality software where to get a place to stay. helps. Which helps to register slots on or before the day without any hassle. On this project they offered machine work on real-time statistics about the availability of parking areas. [4] This gadget fulfills the reason for taking a look at the reserved or empty slot using a deep mastering version for live video feed from the camera techniques and then notifies the user of live empty parking slots; this helps us to provide a live location system. to the user when she/he is away from the destination.

III. PROBLEM STATEMENT

Nowadays, most parking areas operate on a manual parking system, in which vehicles enter the lot, look for an available slot, pay for parking at a counter, and receive a payment slip at the exit gate. In contrast, our parking slot booking application enables users to save time and money. Our proposed system will solve this problem by creating web and android- based mobile application software. The user will select a vacant slot to reserve, specify the parking period, get parking recommendations based on cost and distance, and a payment gateway for billing.

This will provide parking facilities for Light Motor Vehicles. and provide Global Positioning System to users.

This application reduces the problem of parking facilities for Light Motor Vehicles (LMVs) by recommending users based on minimum Cost and Distance and QR CODE scanner for Billing Process

IV.   SYSTEM IMPLEMENTATION

A.   Module Description

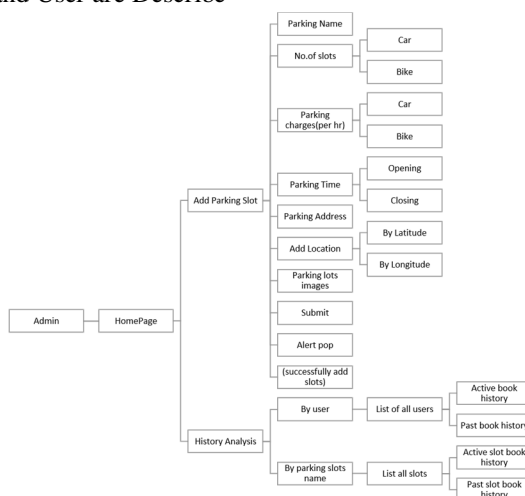In this propose Solution Role of Admin and User are Describe

Fig. 1. Admin Use Case Diagram

Once the Admin Home Page Get Open option are Given As Add Parking Slot and History Analysis

In Add Parking Slot we redirected towards Parking Name, No of slots (car or Bike) , Parking Charges per hrs.(car or Bike) , Then Parking Time(Opening and closing Time), then Parking Address , Add location (By Latitude and Longitude) , next option for Parking Lot Image Where User Actually Add Locations Image once it's get submit Alert Msg get That Admin Successfully Added Given parking space

In Another part of History Analysis , Admin actually get all history List of User (Active and Past Book history) get all history List of Parking Slot Name (Active and Past Slot Book history)
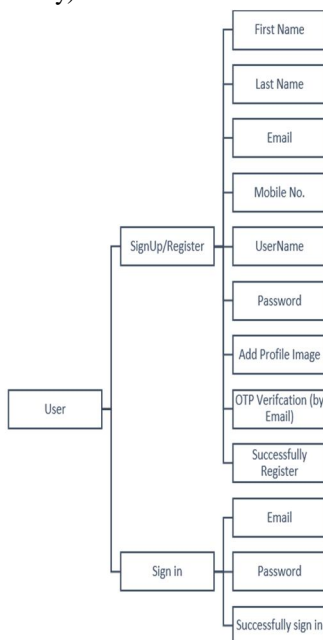

Fig.2.1. User Use Case Diagram

In The Above Diagram , User have Two Options Sign Up /Sing In options All the basic options like name , Email, Mobile No, User Name , Password, user also get options of Add profile image , Otp verification then msg received as successfully added msg of registration all this options for sign up and few like email , password for sign in
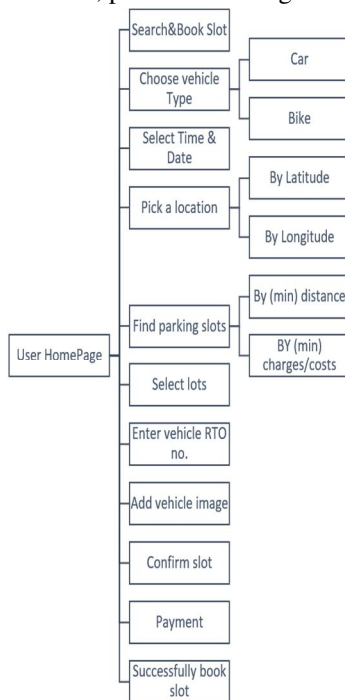

Fig.2.2. User Use Case Diagram

After Successful Registration Users Home Page Get Opened searching options for preferable location, Vehicle type, Select Time and Slots there will be options for pick location By(latitude and longitude) ,Parking slots by distance and cost . For the verification purpose, users have to add their Vehicle RTO number and vehicle image. After This user confirms the slot, payment through QR code Scanner and receive final registration msg on mail.

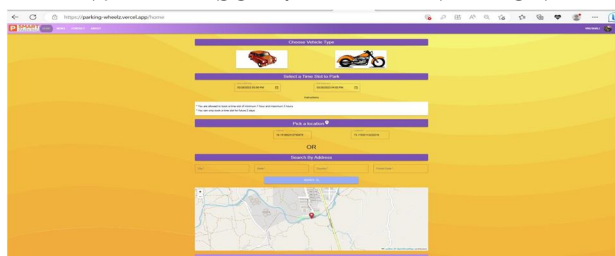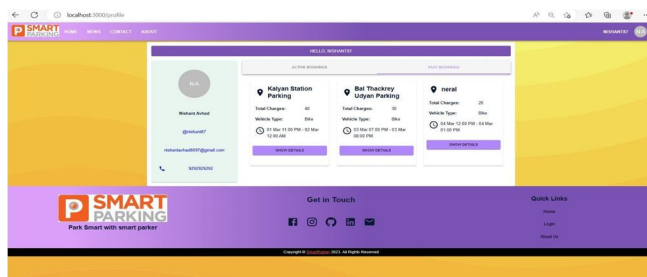## V.   RESULT/IMPLEMENTATION

Fig.3. user book a slot

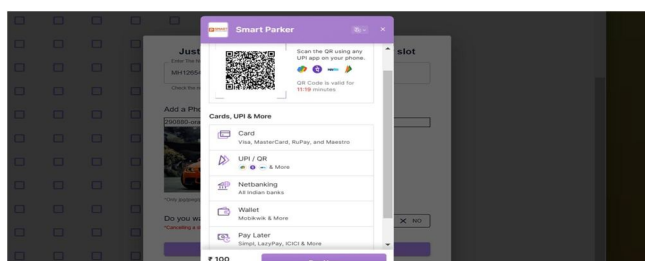Fig.4. user past booking history

Fig.5. Admin Homepage
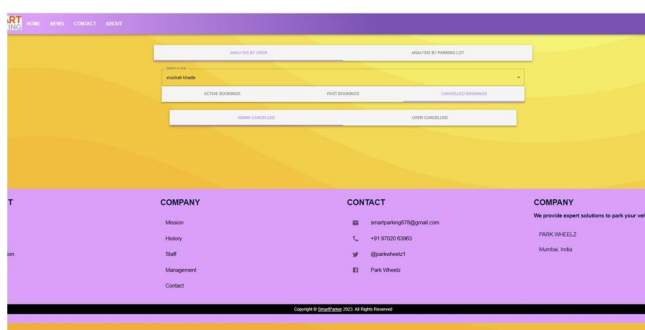

Fig.6. Here QR and other option for Payment

Fig.7.Here Admin Analysis all User and Parking lots history

The application will provide an interactive and user friendly Graphical User Interface (GUI), providing an all-in-one, well-rounded app, 3rd Party application as all functionalities will be defined. Users from remote locations could book a parking slot for them by the use of our mobile application. To improve the parking facilities of a city and thereby aiming to enhance the quality of life of its people and Help them To Drive Safety And Smoothly

VI. CONCLUSION

Overall, this project is about automation of car parking facilities. We have achieved this by using the latest technology stack and conducting supreme research. Parking recommendations are one of the main features of our project. This project basically addresses the problems of efficient and orderly management of parking spaces. The system displays a welcome message and provides information about parking space availability. With the use of this system, the cost of hiring personnel to control the traffic in the parking lot will be significantly reduced and the problem of traffic congestion will be solved through faster check in and check out. Successful implementation of this project will result in less traffic and chaos in congested parking spaces such as malls and business buildings.

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