Iot based smart parking system

A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF B.E IN COMPUTER SCIENCE AND ENGINEERING.

BY

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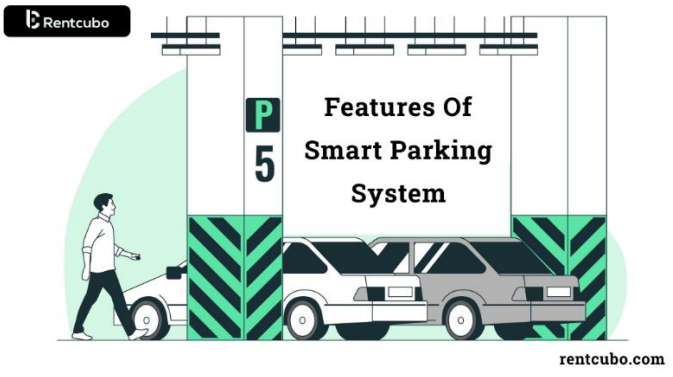
SMART PARKING SYSTEM

PHASE 4: DEVELOPMENT PART 2

- Lack of proper parking spaces is a major problem in many metropolitan cities. Which often leads to traffic jams and accidents.
- That is why we need to adopt this latest smart parking system software. This will make things easier for car drivers.
- Often when we go to movie theatres, shopping malls, stadiums, and offices we did not find the proper place for vehicle parking.
- It consumes too much time while searching for an appropriate space for parking.
- There is no proper parking system in major cities nowadays. But now with the help of the latest technology, we can build to more benefit to a smart vehicle parking system that will solve the daily parking issues for many users.

Performing different activities like feature engineering:

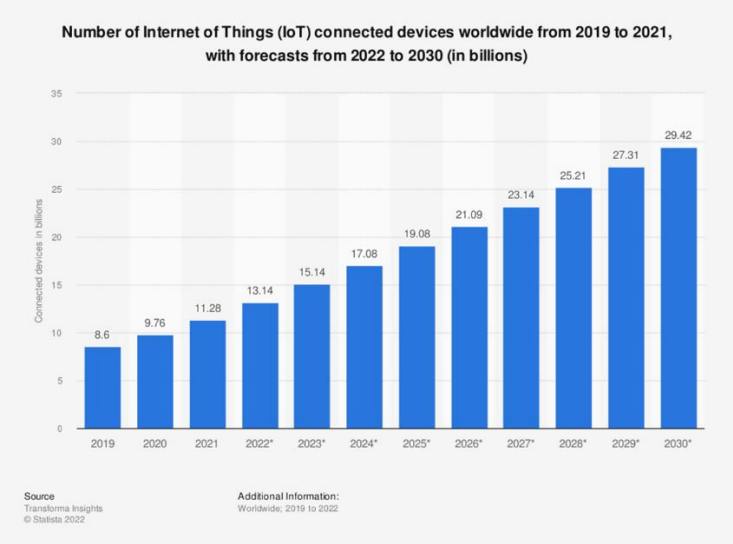
- The advanced features in the smart vehicles can now capture real-time traffic flow statistics, maps, infotainment, remote access to emergency services within seconds, detect potholes and speed bumps, heavy rain, fog, slippery roads and communicate these messages to cars within a radius of three kilometers.



Evaluation of smart parking system using IoT:

- IoT-based smart parking system offers real-time slots, parking procedures, information and improves users' ability to save time on proper parking.
- It helps to solve growing traffic congestion concerns. As for future work, users can book parking in a remote location

Develop and build the smart parking system last few years:



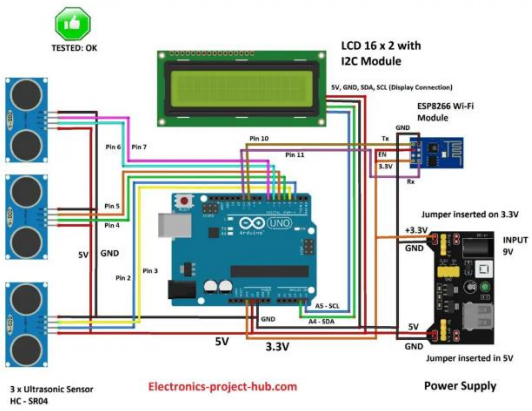
HOW TO BUILD THE SMART PARKING SYSTEM:

- Making three devices in Artik Cloud Platform.
- Making one application in Artik Cloud.
- Making one rule in Artik Cloud.
- Preparing & Programming Arduino.

- Connecting the Sensors to Arduino.
- Preparing Raspberry Pi.
- Preparing Intel Edison.
- Developing Web Application.

TO BUILD THE SMART PARKING SYSTEM USING IN ARDUINO:

- The system utilizes an Arduino Uno board along with an ultrasonic sensor, IR sensor, servo motor, and object counter to efficiently park vehicles.
- This prototype aims to optimize parking space utilization, reduce human error, and enhance overall parking efficiency.
- The servo motors, LCD display, and IR sensor are all connected to an Arduino Uno microcontroller unit.
- The LCD shows how much space is available, and the IR sensors keep track of how many automobiles enter and exit the parking place.
- The IR sensors identify whether or not a parking place is available.



ADVANTAGE OF USING ARDUINO DEVICES:

- Resources such as fuel and time of the user can be saved.
- The web page will display is there any parking slots available even before the user enters the parking space.
- There is no need of image processing in this and this means a lot of time can be saved.

BUILD THE SMART PARKING SYSTEM:

- This study proposed an automated parking system to function on a real-time basis to detect all empty parking places based on the internet of things platform, with help of sensors.
- Arduino UNO platform brings automation to this system on per priority basis to all the users with scheduling techniques.

BUILD THE SMART PARKING SYSTEM USING SOME DEVICES:

- Huawei
- Place Pod
- Siemens

USING UNIQUE FEATURES TO BUILD THE SMART PARKING SYSTEM:

USGPS Vehicle Tracking : It's necessary to allow GPS monitoring to make the program easier to use. This technology allows the location of the car to be found and the distance to the closest parking lot to be calculated.

Booking: This function enables a parking space to be reserved. On a regular, weekly, and monthly basis, the user can select parking spots that suit the budget and pre-pay it. It helps daily boring reservations to be avoided.

Price Comparison: It helps drivers to conveniently compare prices and locate the cheapest lot in their smart city. Parking locator applications with the vehicle sensor notify consumers in advance of the price and equate a more cost-effective price at the closest destination.

MAP Searching: Maps help drivers to locate the precise location for street parking and the fastest way to reach their destination. And this method of searching

should be as simple as possible like it must be possible in one tap to locate the closest location.

Heat Map View : In real-time mode to the parking space availability monitoring, this app feature help to display the busiest route on the street. App integrated with vehicle detectors enable consumers to make an acceptable booking decision for the parking availability in that smart city.

In-App Payments: It is necessary to incorporate in-app multiple payment options, such as Paypal, credit card, and cash, keeping the customer happy and secure. This also helps companies to increase customer retention.

- The build of a smart parking system is more than a trend nowadays.
- It is in need of the increasing population and requirement for proper parking spaces.
- However recently there are very few car parking apps in the market.
- But in the coming years, the demand will be high and it will be beneficial if you start today and create a better user base than others.
- If you have any queries regarding this car parking app, then you can contact us for better advice.
- We are the best choice for app development, as we have years of experience in the same.

THANK YOU