

# **AUTOMATIC CAR PARKING SYSTEM USING IOT**

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*ABSTRACT:* Vehicle Parking observance and Management has become a giant challenge everywhere the globe with increasing enrolment's, high share of car possession and decreasing parking provide that in result triggering blockage of car, congestion, wastage of your time and cash. In metropolitan areas, vehicle parking observance and management drawback is obtaining worse and additional frustrating attributable to the actual fact that majority of the folks own cars and drive through them to the height traffic areas. These common issues embrace sorting out folks (evidence) UN agency area unit to blame for the damages (hitting, scarping, scratching and dents) to a different automotive and also the blockage of automotive attributable to wrong automotive parking that takes a lot of time to find the owner of the automotive. Moreover, locating or forgetting their parking lot location another issue that's typically featured by the folks everywhere the globe.

The present cameras settled at the parking heaps area unit just for video police work and can't facilitate in such things as there's an absence of correct vehicle parking observance and management system.

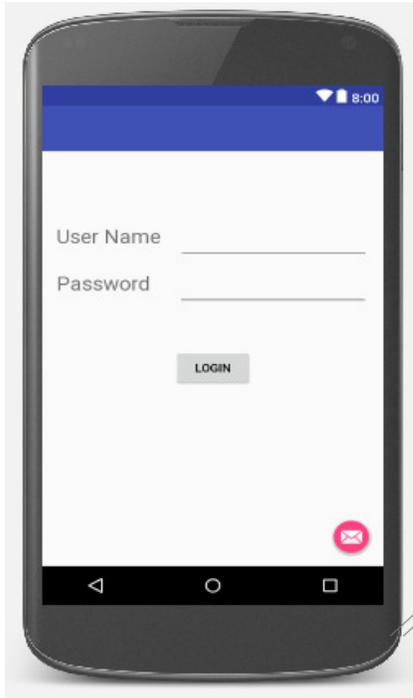
To address higher than mentioned issues and to make sure a higher parking expertise by accommodating increasing variety of vehicles in a very correct convenient manner, we tend to propose wise parking observance and management system known as ASPS. In ASPS, ANPR cameras and application is developed to efficiency monitor, manage and defend the parking areas.

## 1. INTRODUCTION:

Vehicle parking and management is difficult with the growing variety of vehicles at university for damaging the vehicles of different people's within a field WHO stay anonymous and additionally lead to confusion, annoyance and wastage of your time.

The problem is obtaining additional severe day by day as a result of the very fact that variety of student enrolments is increasing year by year and a large share of scholars and school own cars with the restricted variety parking tons. Block the opposite pose vehicles in the parking tons by individuals whereas parking their cars improperly is a very important issue in vehicle parking. Due to this, finding the accountable persons and stay stuck and annoyed for the blocked vehicle homeowners till they get the vehicle out of the

automobile parking space. the safety guards at the parking tons are unable to facilitate in this regard as a result of the lack of any observation and management social control systems and policies. As a result of this, it takes abundant time in following the accountable person that consequently leads.

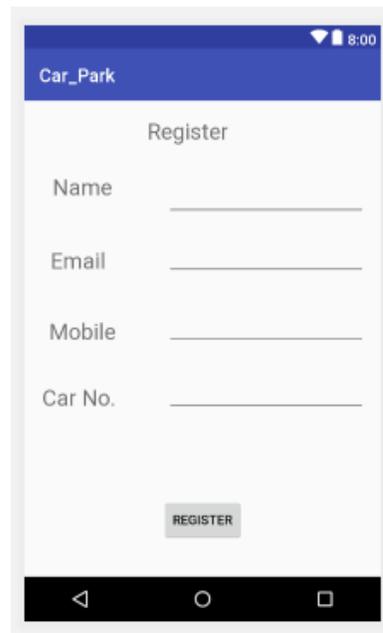


Another crucial drawback (that arises due to the reserved and restricted variety of vehicle parking lots) is that students (for whom no reserved parking is available) might harm different pose vehicles whereas improper and wrong vehicle parking. The broken vehicle homeowners stay unsuccessful in finding out the accountable persons for damaging their vehicles and nobody will support during this concern as a result of there's no correct observation system that will keep record of the in and out data (i.e. entrance and exit) of the vehicles and parking data (like parking location, parking duration) of vehicles.

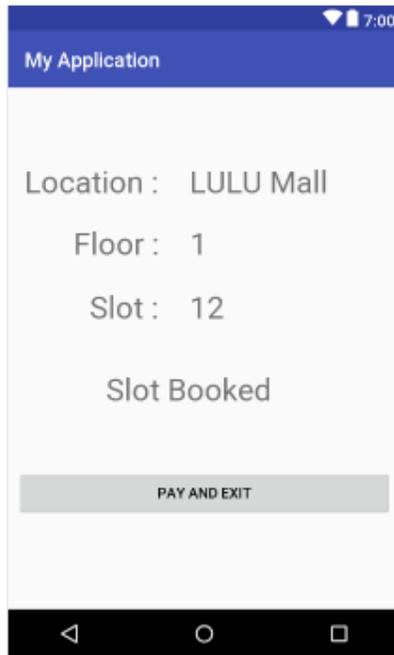
Moreover, in case of suspected vehicles, unable to trace the current system as there's no record or thanks to determine them.

Another most typical drawback long-faced by students, school and workers members is they typically forget wherever they have posed with vehicles inside parking tons.

So, looking for vehicle in such situation while not any machine-driven management system that leads to anger, exasperation and wastage of your time and it's additionally tough and time overwhelming task. Smart phones square measure currently days the key computing. These sensors together change applications across a large kind of domains like homecare, healthcare, social networks, safety, environmental watching, ecommerce and transportation.



Mobile sensors provides the chance to trace data concerning environmental impacts and develop maps and perceive patterns of human movement, traffic, and air pollution. Exploitation these extraordinary capabilities of good phone sensors a wide vary of mobile application square measure developed against traffic.

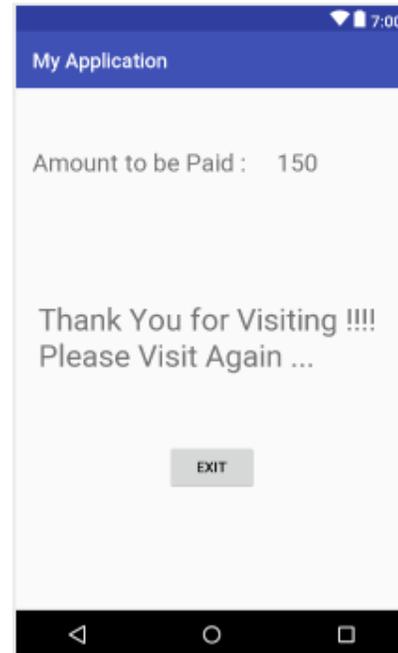


Smart phones square measure currently days the key computing and communication device and these mobile phones to measure equipped with a set of embedded sensors. These detectors together with close lightweight sensor, measuring, digital compass, gyroscope, GPS, proximity detector and General purpose sensors like mike and camera.

These sensors put together change new applications across domains like homecare, healthcare, social networks, safety, environmental watching, ecommerce and transportation.

Mobile sensors provides chance to trace data concerning environmental impacts, develop maps and perceive patterns of human, traffic, and air pollution. Exploitation causes extraordinary watching capabilities of good phone sensors, an mobile application square measure developed for traffic watching for example ,watching traffic conditions, detective work road bumps, honks, potholes etc.

Such traffic watching embody. However this could serve for video capturing, storing and square measure not connected to any correct management.



***Problem Statement:***

Even though we have good Parking System, there is a problem with the payment method for the charge added for the parking period and the process of searching of an empty lot for parking with minimum distance. And the important lacking of data is, the details about the owner of the car and the license of the owner is not available with the older Parking methods. Avoidance of the problems make the data more valuable with conditions added towards the constraints provided against some regular data for construction of the loyal information's are needed for advanced world. Moreover if the data's are provided, it's not safe with the layers for protection with low security.

This process is most important with the construction of data's for later use apart from the layers of data's.

## **LITERATURE REVIEW:**

### **1: The Baltimore/Washington Airport Car Park**

This parking system is one of examples of parking system; it guides drivers to empty parking lots within parking facilities.

In order to monitor the vacancy status ultrasonic sensors are mounted over each parking. The availability of the parking lot is displayed on a display board.

In addition to the above, to prevent car drivers from entering a lane with no empty lot, red light indications are used.

### **2: Plaza Car Park System**

The parking system is one of the examples of local in-door that guide car driver to get available car.

When car drives wanted to go out of the parking lot, a message board is used to prevent the collapsing of the parking lot and allow car drivers to get the exit door.

### **3: Plaza Singapore car park system**

Plaza has introduced ST Electronics, user friendly parking guidance system. With the space display provides positioned at strategic locations, they are allowed to get them to the areas where parking lots are available.

With this system, when park is full, drivers need not to wait at the car park entrance and be allowed entry the park anytime.

### **4. Reservation-based Smart Parking System**

Getting the parking space in most metropolitan areas, particularly throughout the burst hours, is tricky for drivers. The problem arises from where to search for the parking slots available for their vehicles. During this paper, we have a tendency to style and a paradigm of Reservation-based sensible Parking System that permits drivers to effectively notice and reserve the

vacant parking areas. By sporadically learning the parking standing from the sensing element networks deployed in parking tons, the reservation service is full of the modification of physical parking standing. The drivers are allowed to access this cyber-physical system with their personal communication devices. Moreover, we have a tendency to study progressive parking policies at sensible parking systems and compare their performance. The experiment results show that the planned reservation-based parking policy has the potential to modify the operations of parking systems, in addition to alleviate holdup done at parking lots.

## **EXISTING SYSTEM:**

The Parking system is enabled with the ANPR cameras, which can process only the IN and OUT of the vehicle at the specific location at each end of the space located at the parking lot. This can construct the way of enabling the locality and possibility of processing the path available – each ends.

It can only get the basic details of the cars but it also gives safety. Even though it gives safety, it doesn't get the level of the security for the vehicle.

## **DISADVANTAGES OF EXISTING SYSTEM:**

- Can't locate where the vehicle is parked at the parking lot.
- Details of the owners is not easy to fetch.

## **PROPOSED SYSTEM:**

The proposed system is used to get the entire details of the owner of the cars that are to be entered and then parked at the lots that are left empty. And then the important part of this proposed system is to get the lot's that are to be

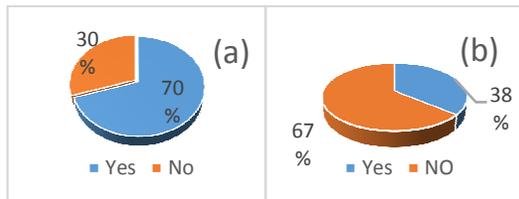
occupied and make the lot as occupied with full details of the owner of the cars that are parked.

The remembrance of the vehicle parked location is not mandatory because the total details of the vehicle parked is provided in the mobile application as well.

The blockage of the vehicle at the parking is reduced by knowing the correct location of the slots available.

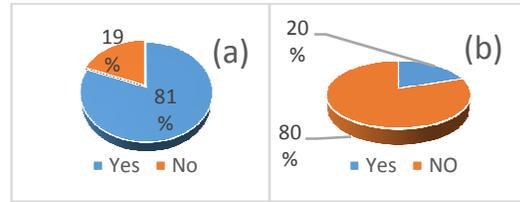
**SURVEY STATISTICS**

A survey was conducted by filling out a quantitative questionnaire. A total of 80 persons were participated in the survey and number of questions were asked from them about the project. It shows the percentage of blockage of vehicles during the parking. (a) Shows (70%) of vehicle blockage happened at the stages of normal parking system. (b) Shows only (30%) of vehicle blockages happened during the survey. Every vehicle is guided and parked so no blockage has occurred.



Percentage of Vehicle Blockage.

Shows the percentage of drivers forgetting the location of the vehicle parked at the slots available and adds information about that. (a) Shows (81%) of drivers forget their slot where the vehicle is parked. (b) Shows more than (80%) of drivers didn't forget their vehicle located. Because of



Percentages of Drivers forgetting the location of their parked cars.

the inbuilt data that are provided with the location and the floor and also the slot number of where the vehicle is parked.

**ADVANTAGES OF PROPOSED SYSTEM:**

- Reduces annoyance of people.
- Parking process is quite easy.
- Book a parking lot before reaching the parking place.
- Reduce time and fuel consumption.
- Identification of parked vehicle's owner is easy.
- Payment made easy.

**CONCLUSION:**

In this project, the new way of parking is introduced and it provides large amount of advanced data's for later use and identification of any one, who owns the vehicle and who uses the vehicle to travel and used to go shopping and for any places to visit for. It made a big deal that number of process is compressed into a single project with high distinction and awesome process.