

# A PARKING SYSTEM USING DYNAMIC RESOURCE ALLOCATION, PRICING AND SPOTTING THE STOLEN VEHICLE

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**Abstract :** Parking in major cities, notably with dense traffic, directly affects the traffic flow and people's life. During this paper, we have a tendency to introduce a replacement sensible parking system that's supported intelligent resource allocation, reservation, and rating. The projected system solves this parking issues by providing warranted parking reservations with rock bottom doable value and looking time for drivers and also the highest revenue and resource utilization for parking managers. New honest rating policies are projected which will be enforced in apply. The new system relies on mathematical modeling victimization mixed-integer applied mathematics (MILP) with the target of minimizing the overall financial value for the drivers and increasing the employment of parking resources. System also define a stolen vehical detection part through car parking application.

**Index Terms -** Dynamic pricing, dynamic resource allocation, mixed integer linear programming (MILP), and reservation, smart car parking.

## I. INTRODUCTION

Parking is a rich method in terms of either cash or the time and energy spent for the free spot chasing. Current studies reveal that an automobile is posing for ninety five gift of its time period and solely on the road for the opposite five gift. If we have a tendency to take England in 2014 as AN example, on the average a automobile was driven for 361 hours a year in keeping with the British National Travel Survey yielding regarding 8404 hours during which a automobile would be pose. Currently wherever would you park your automobile for these terribly long hours? Cruising for parking is of course the primary drawback caused by the rise of automobile house owners globally. [2]On average, thirty gift of traffic is caused by drivers wandering around for parking areas. In 2006, a study in France unconcealed AN estimation that seventy million hours were spent each year in France solely in looking for parking that resulted within the loss of 700 million euros annually.[3]In 2011, a worldwide parking survey by IBM states that twenty minutes is spent on the average in looking for a desirable spot. With these statistics, we are able to assume that a good portion of worldwide pollution and fuel waste is expounded to cruising for parking. Parking areas area unit found to be quite masses in some places and really rare to seek out in others. rating policies had vie a very important role within the overall parking accessibility for many years. Here comes the necessary question: can we have to be compelled to have additional parking areas or can we would like higher parking management? we have a tendency to believe it's the later and therefore the motivation behind this work is regarding higher parking management with honest and profitable rating policies.[6] The work given during this paper combines parking reservation and rating models to beat the parking issues. In this paper, we have a tendency to gift a brand new sensible automobile parking system, named iParker, with static resource planning, dynamic resource allocation and rating models, to optimize the parking system for each parking managers and drivers. The contributions of our work include: 1) increasing parking resource utilization, 2) increasing parking slots at blank areas i.e. society space, 3) increasing parking revenue, 4) up parking expertise of drivers by lowering price, parking spot looking and walking times. Our work is completely different from the one in [8] wherever a dynamic resource allocation model was projected. The most limitations of that model area unit that solely reservation for restricted amount of your time (e.g., few minutes) was allowed, fastened value was used and revenue wasn't taken under consideration and solely one selection of destination was thought-about. Whereas our model permits a driver to order a car parking zone for any time in future, the revenue is taken into account and new rating models area unit introduced. Additionally, a parking answer with their individual journey planners is projected.

## II. RELATED WORK

### A. Existing Work:

Smart parking system that's supported intelligent resource allocation, reservation, and evaluation. The projected system solves the present parking issues by giving warranted parking reservations with the bottom attainable price and looking out time for drivers and therefore the highest revenue and resource utilization for parking managers. New truthful evaluation policies are projected that may be enforced in follow. The new system is predicated on mathematical modeling exploitation mixed-integer applied mathematics (MILP) with the target of minimizing the entire financial price for the drivers and maximizing the

employment of parking resources. If there's any parking slot on the market in thus society/apartment then existing system won't predict that to user so individuals cannot get advantage of it.

#### **Disadvantages of Existing System**

1. Limited by being suitable only for short-term reservations.
2. Parking revenue was not considered.
3. Time consuming

#### **B. Proposed Work:**

We present a new smart car parking system, named i-parker, with static resource scheduling, dynamic resource allocation and Parking Availability Prediction models, to optimize the parking system for both parking managers and drivers.

The contributions of our work include:

- 1) Increasing parking resource utilization,
- 2) Increasing parking slots at blank spaces i.e. society area,
- 3) Increasing parking revenue,
- 4) Improving parking experience of drivers by lowering cost, parking spot searching and walking times.

Our work is totally different from the one in wherever a dynamic resource allocation model was projected. The most limitations of that model are that solely reservation for restricted amount of your time (e.g., few minutes) was allowed, mounted value was used and revenue wasn't taken under consideration and solely one selection of destination was thought of. Whereas our model permits a driver to order a parking lot for any time in future, the revenue is taken into account and new evaluation models are introduced.

We mix parking reservation and Parking accessibility Prediction models to beat the parking issues.

In this system we offer extra profit that's we tend to conjointly predict people/user if there's any space/parking slot on the market in any society/apartment so people/user will park their vehicle in this space.

#### **Advantages of proposed system:**

1. Time Management
2. Cost Effective.
3. Increasing parking revenue
4. Predict any parking slot available in society/apartment for parking vehicle.
- 5.

### **III. PROBLEM STATEMENT**

In past days ,there is ton of downside relating to vehicle parking, as a result of inconvenience of car park folks park their vehicles on road or in no car park, owing to it ton of traffic occur on road. It absolutely was terribly time intense method as a result of folks has to be compelled to search the car park manually. Therefore to beat these problems we have a tendency to planning to implement system can which is able to mechanically predict or observe the empty parking slot space in order that user can simply park his/her vehicle while not holdup in looking out parking slots? Our system will save user time and additionally observe parking slot that area unit offered in nearest society or living accommodations. Our system can prove useful for peoples.

### **IV. SYSTEM ARCHITECTURE**

In past days, there's heap of drawback concerning vehicle parking, thanks to inconvenience of park Individuals Park their vehicles on road or in no park, owing to it heap of traffic occur on road. It absolutely was terribly time intense method as a result of individuals needs to search the park manually. Thus to beat these problems we have a tendency to aiming to implement system can which is able to mechanically predict or notice the empty parking slot space in order that user can simply park his/her vehicle while not delay in looking parking slots? Our system will save user time and conjointly notice parking slot that area unit out there in nearest society or housing. Our system can prove helpful for peoples.

I-parker good automobile parking for smart town theme over a manual automobile parking system we have a tendency to construct a special on-line based mostly automobile parking theme, during this projected system user makes and request to the central server for parking and book parking earlier by creating a payment. In depth experiments area unit conducted to demonstrate the potency of the projected theme.

- Abundant works for looking a parking region are projected beneath quickest neighbourhood node algorithmic rule i.e. kNN algorithmic rule.
- Recently, some dynamic schemes are projected to support for parking and payment.

This paper proposes a secure kNN-based search theme by revering a GPS location, and assures parking of automobile earlier. During this system one agent is projected for keep attention on parking regions by getting time in time to end manner.

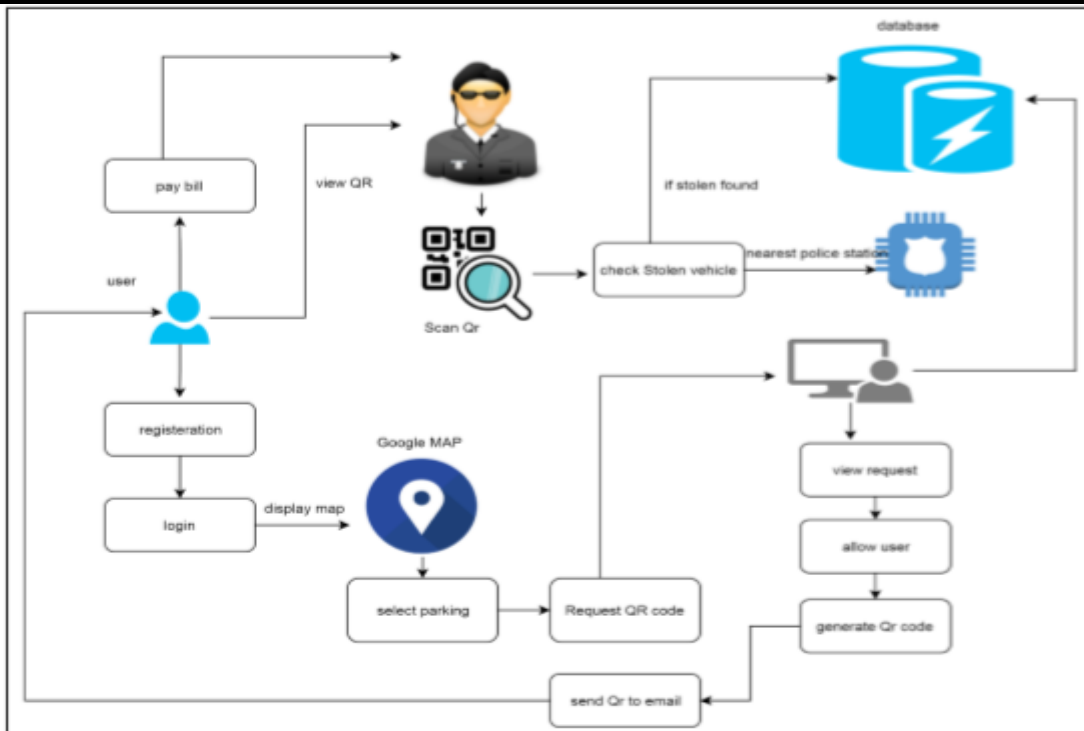
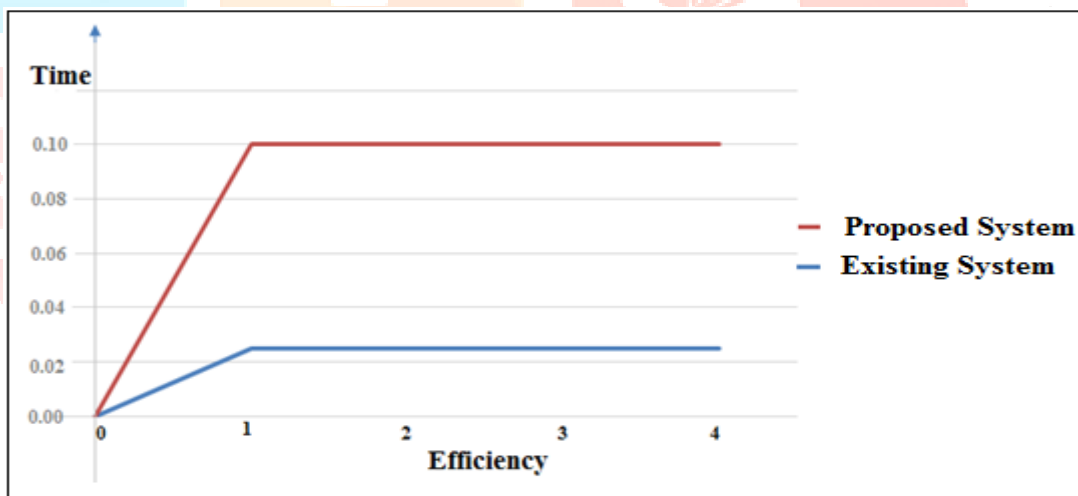


Fig: System Architecture

V. RESULT

• Performance Measures Used:

Hackney's current parking enforcement contract rewards quality, not quantity of parking tickets. The number of tickets we have issued has fallen each year because an increasing number of motorists are parking correctly. A 2010 survey showed that 99% of Motorists Park in line with regulations - this high level of compliance is a strong sign that our parking enforcement is working.



• RESULT ANALYSIS:

Input:

Here, Whole System taken many more attribute for the input purpose but here author mainly focuses on the Time and performance of system. Based some few attributes we will getting following analytical result for our proposed system.

• EXPECTED RESULT:

Parameter	Existing	Proposed
A	10	4
B	10	5
C	8	8
D	10	3
E	8	2

Figs: Result Table

- A = Computation Cost.
- B = Time Consumption.
- C = Scalable.
- D = Waiting Time.
- E = User Friendly.

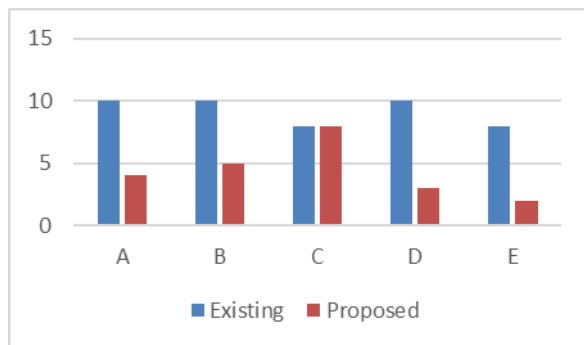
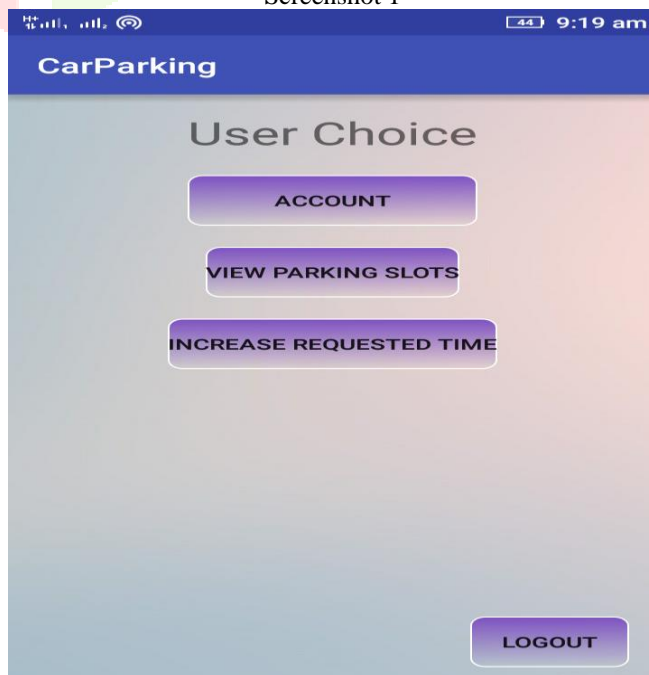


Fig: Time line chart of Result Analysis



Screenshot 1



Screenshot 2



Screenshot 3

## VI. CONCLUSION

In this paper we've planned I-Parker, a brand new sensible parking system that is predicated on MILP model that yields optimum answer for dynamically and statically allocating parking resources to parkers providing versatile reservation choices. The new ideas introduced during this paper are the mixture of period reservations with share-time reservations, dynamically playing system choices (reservation time constraints and pricing) in keeping with period utilization info, and providing the drivers the selection of selecting multiple destinations and reservation kind. We tend to even have planned rating policies for each static and dynamic reservation that maximize the take advantage of parking. In depth simulation results indicate that the planned system considerably cuts the whole effective price for all parkers by the maximum amount as twenty eighth, maximizes the whole utilization by up to twenty first and will increase the whole revenue for parking management up to Sixteen Personality Factor Questionnaire as compared to the non-guided parking system. Finally we tend to plan a dynamic rating theme and by group action it to iParkers model, we tend to found by simulations that it balances the use across all the parking resources and therefore assist in eliminating the general traffic jam caused by parking.

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