GOPARK

Automated Parking Allocation System

Meghnad Saha Institute of Technology

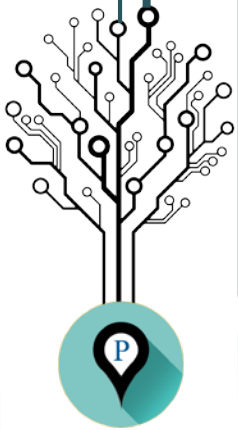
The Problem>>

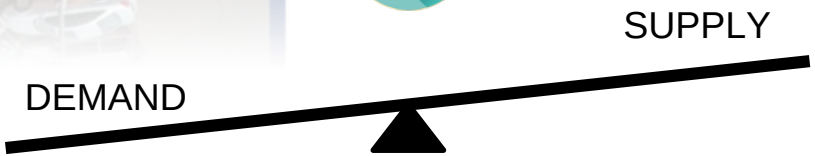
Parking Problem

Parking availability has always been a problem for all car drivers and owners throughout time.

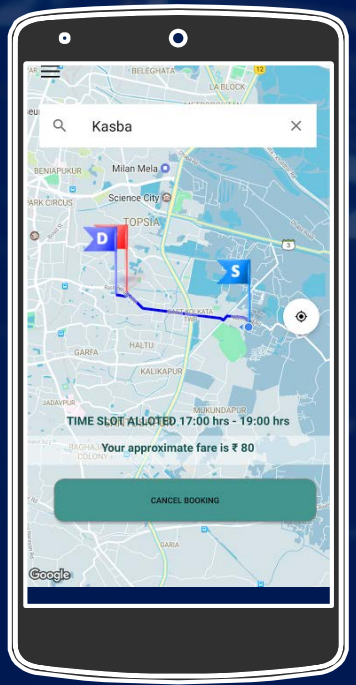
•Parking is a menace in an urban environment without a systematic solution

- Vacant Parking Slots is hard to find in urban areas





The Relevance>>



"Why Is **Solving It** Important?"

- Will Assure Users A Parking Slot from Beforehand- **Save Time**

- Avoid all chaos and unruly parking on the streets- **Orderly Parking**

- Let User Enjoy a hassle free drive – **Tension Free**

"Previous Solutions and Contributions toward the Problem"

Automated Parking Slot Allocation using RFID Technology
K.Ganesan, and K.Vignesh, School of Computing Sciences, Vellore Institute of Technology, Vellore – 632 014, India.

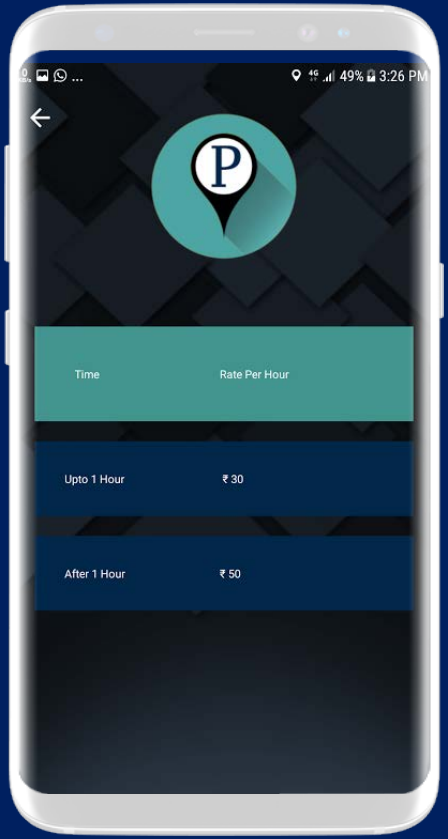
Reservation Based Parking System with Dynamic Slot Allocation, Hina Kousar, Kavitha Kumar, Shoney Sebastian.
MS Computer Science Student, Dept. of Computer Science, Christ University, Bangalore, India.

How we plan to solve the issue?

Introducing!

g o Park

Automated Parking Allocation System



GoPark gives you
best of both worlds

Our Parking System can be broken down to Two Applications- User Application & Partner Application

USER APP

The Interface for users to book or schedule a slot and add cars and give feedback and use other features

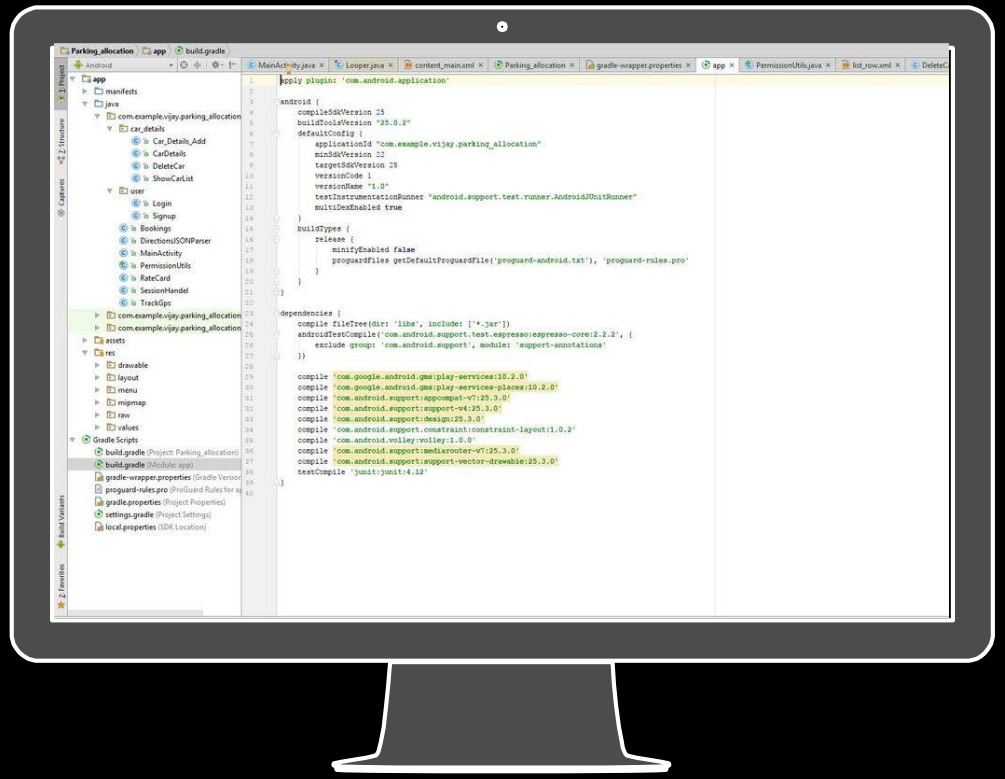
PARTNER APP

The Application through which parking slot owners can add and update information regarding their slots

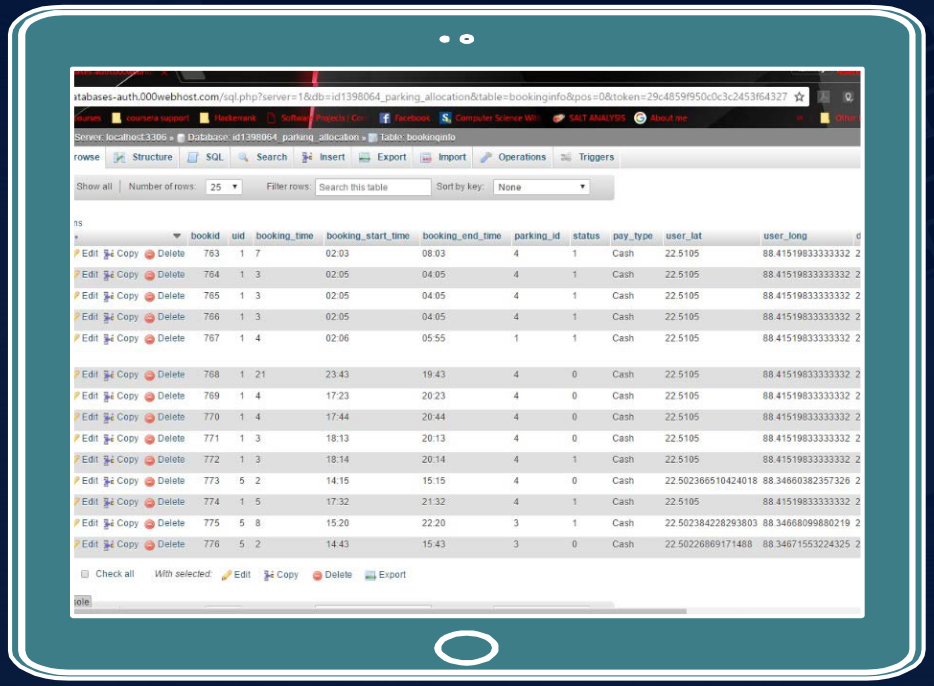
Technical Requirements

For Android Application

- We have implemented API level 22 and above meant for Android 5.1
- The android applications were created using Java and XML
- The network communication is done using Volley with the help of JSON.
- The APIs we have implemented are
  - ❑ Directions API for Android
  - ❑ Distance Matrix API for Android
  - ❑ Google Maps API for Android
  - ❑ Google Places API for Android



Technical Requirements



For Server

- We have implemented the logic using PHP
- The data has been stored using MySQL database
- The environment is an Apache Server
- We are using Apache/2.4.6 (CentOS)

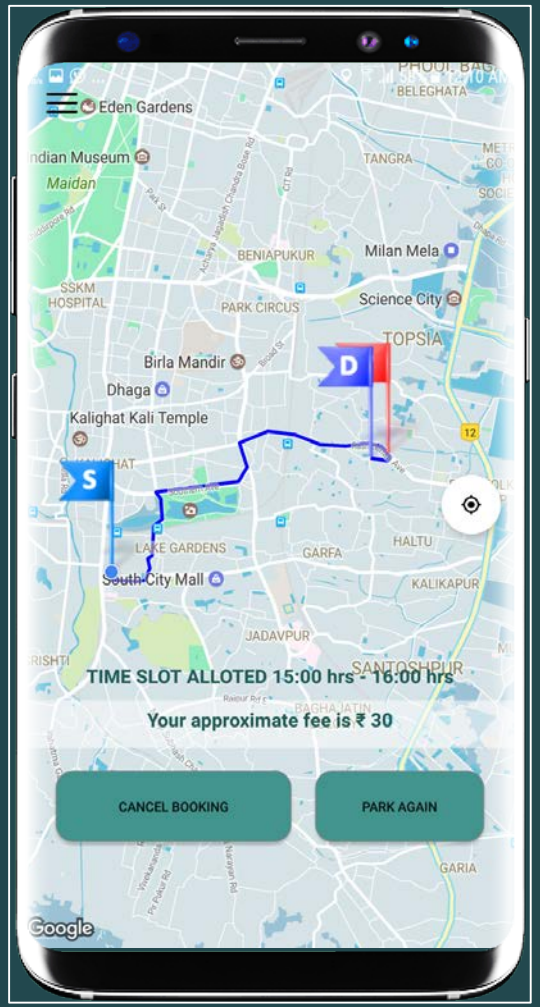
Uniqueness

Our Algorithm

Proposed algorithm is based on Greedy Principle where the ((Distance between LOC U and LOC Pi) + (Distance between LOC D and LOC Pi))*C has to be minimal.

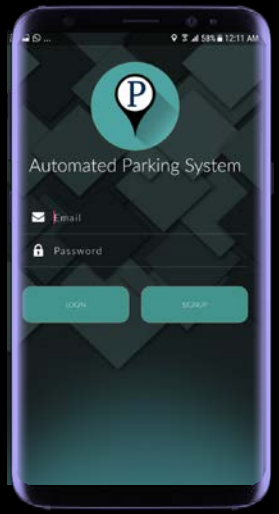
Scalability

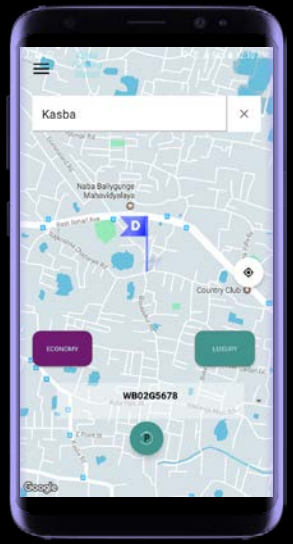
Parking Lot Owner → Location → Number of Slots



Solution Maturity

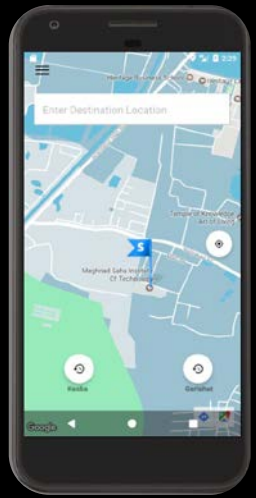
User Friendly Application With Refined Interface





Select Preferences To Get A Tailored Solution

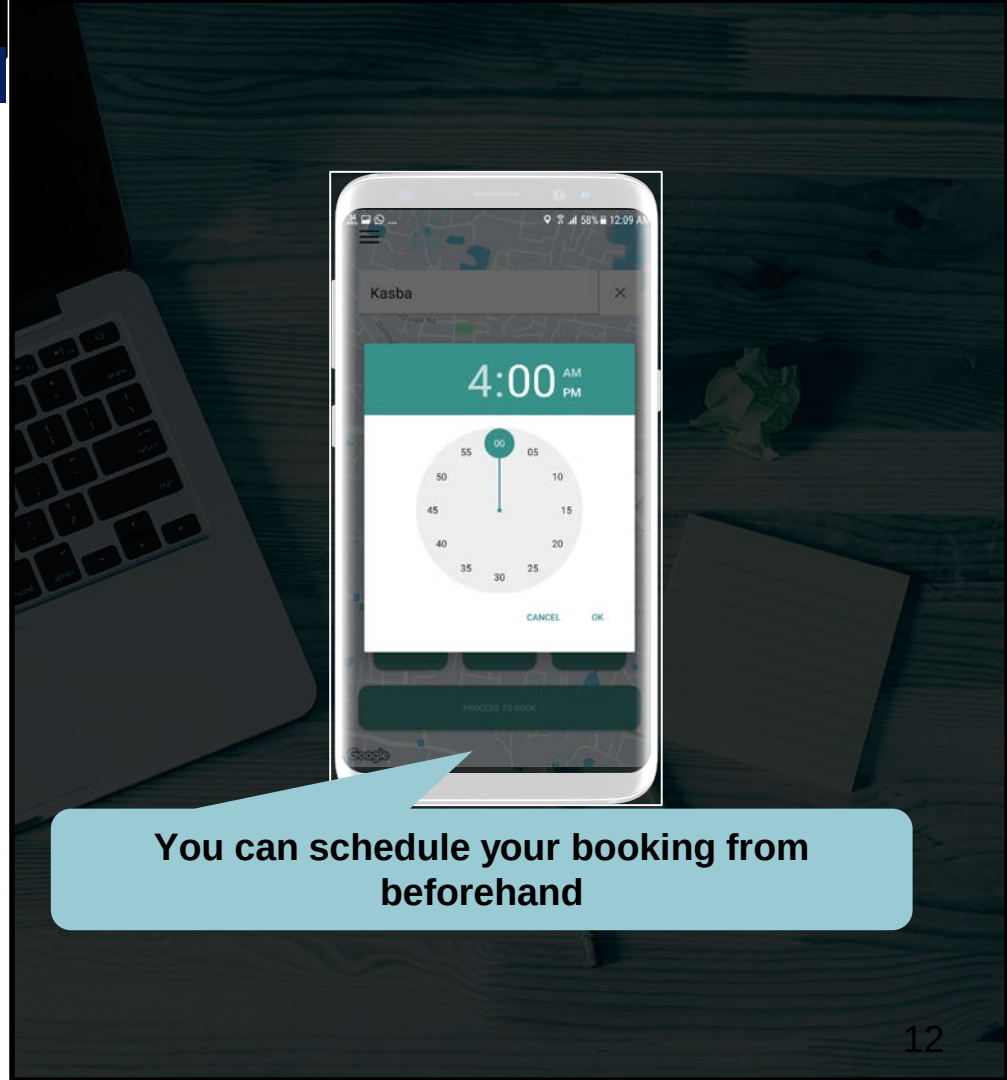
Currently Supports Up to 400 Users Per Day



Easy Usable Interface

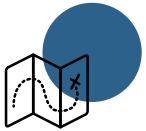
Challenges Faced

- Every day is divided into 24 slots each having full number of vacancies.
- By implementing this solution we have managed to bake in a system of scheduled booking



Limitation & Future Improvement

Bluetooth LE.



Geo-fencing

Machine Learning

Internal Map

Pilot partner App Modification

Special Regards to

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Meghnad Saha Institute of Technology
For being with us all throughout this journey

Thanks!

We are looking forward to your valuable feedback

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