

# Smart Parking Solutions: Redefining Urban Mobility.

**Group ID: PCSE25-54**

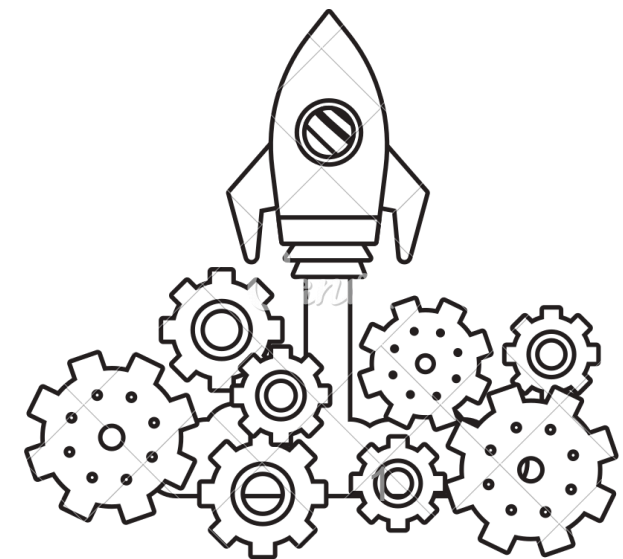
**Team Leader: Sahib Singh**  
**Group Member: Saumya Sinha**  
**Group Member: Vanshika Jaiswal**

**Semester : 8**  
**Semester : 8**  
**Semester : 8**

**Department: CSE**  
**Department: CSE**  
**Department: CSE**

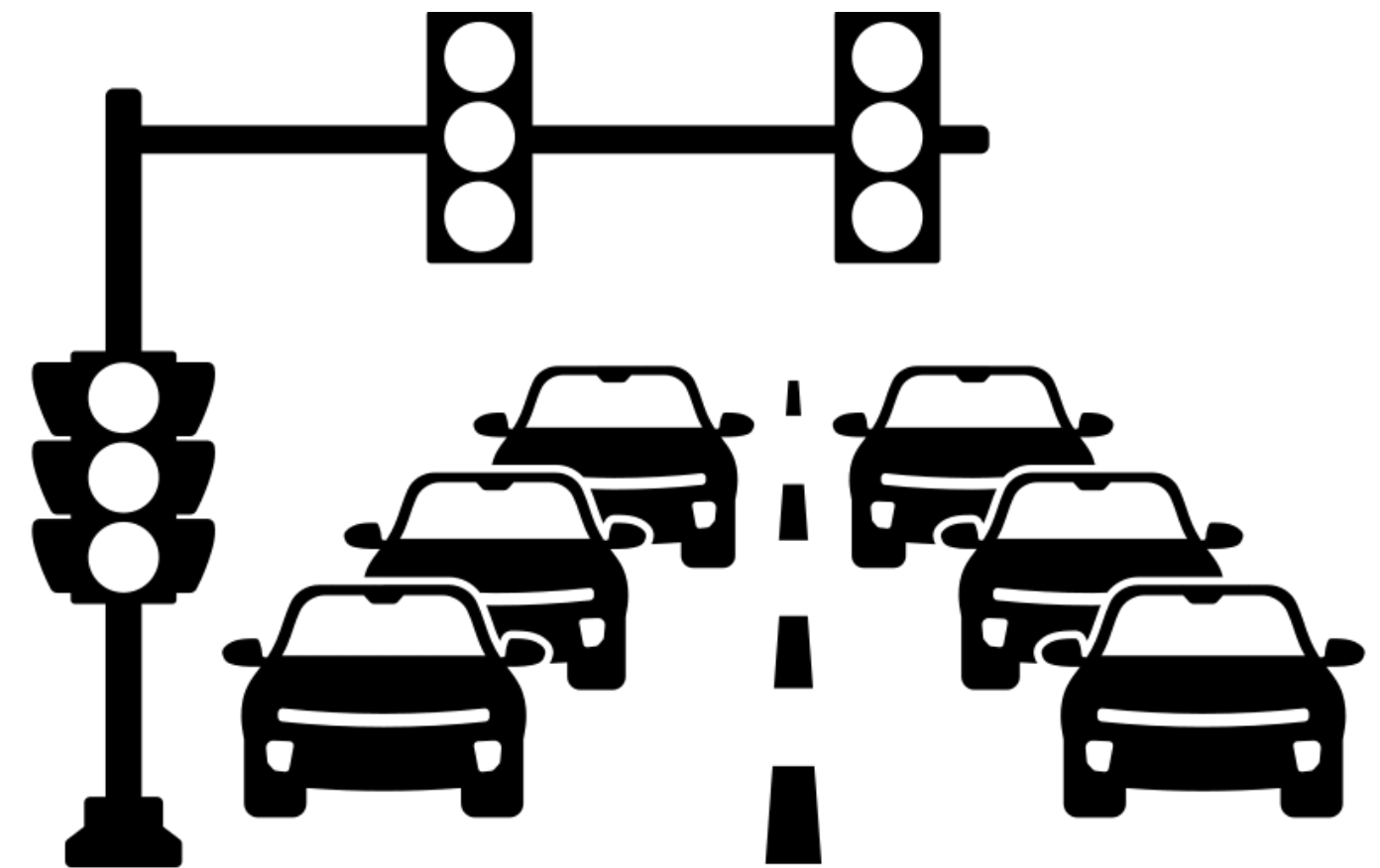
**Name of Guide : Deepti Singh**

**Date of Presentation : 26/05/2024**



# PROBLEM STATEMENTS

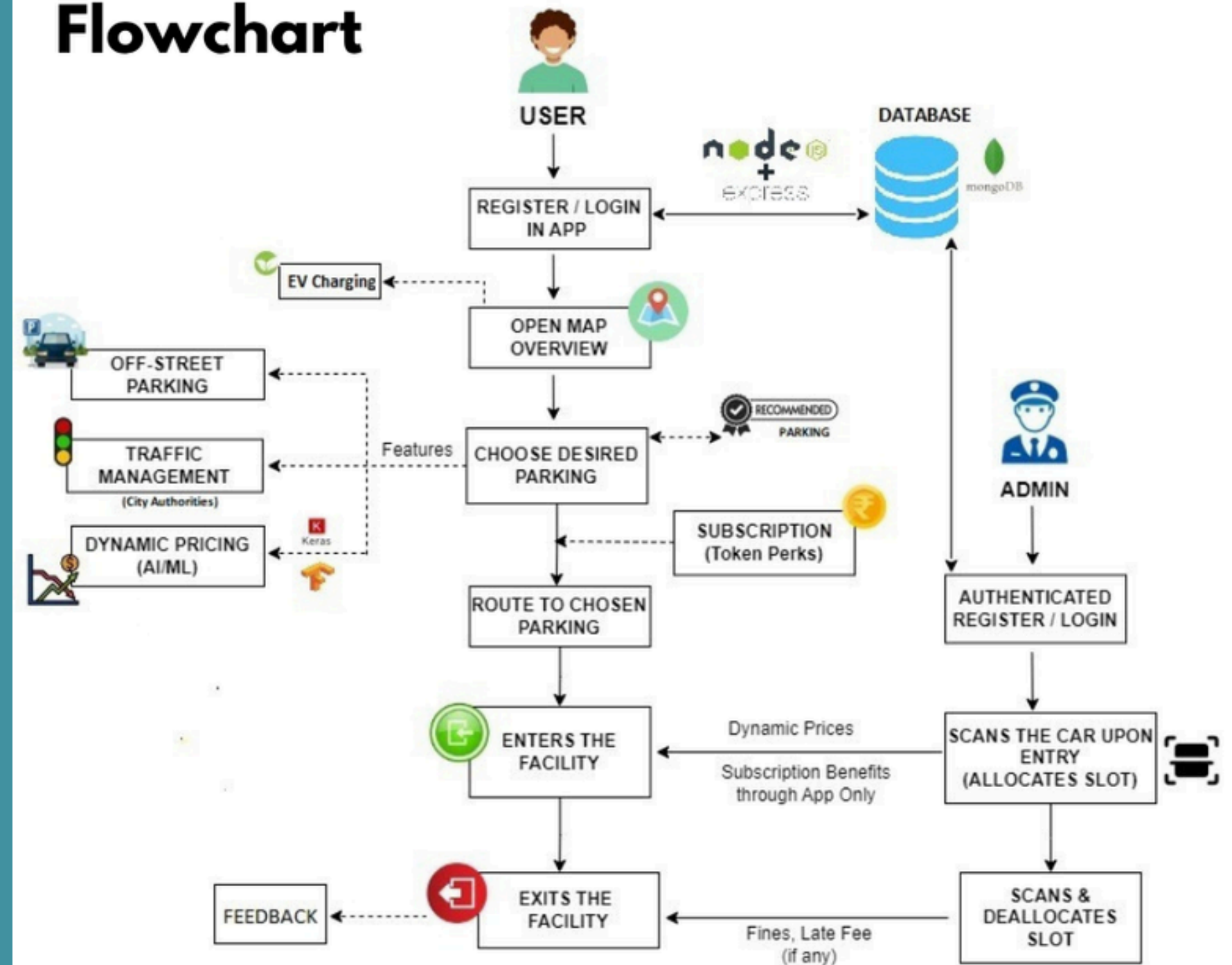
1. **Population** of India is increasing leading to increase in no. of vehicles but parking area is fixed.
2. **Traffic congestion outside parking area**, on-street parking, a mismatch between parking supply and demand, and illegal parking.
3. **Parking space** has become a scarce commodity, it is crucial to employ effective technology-based **solutions to optimize their utilization**.
4. Loss of revenue for operators, there is **economic downside** to the business in vicinity, effect on government taxes, employment.
5. **Pollution** is increasing day by day due to traffic congestion outside such parking areas.



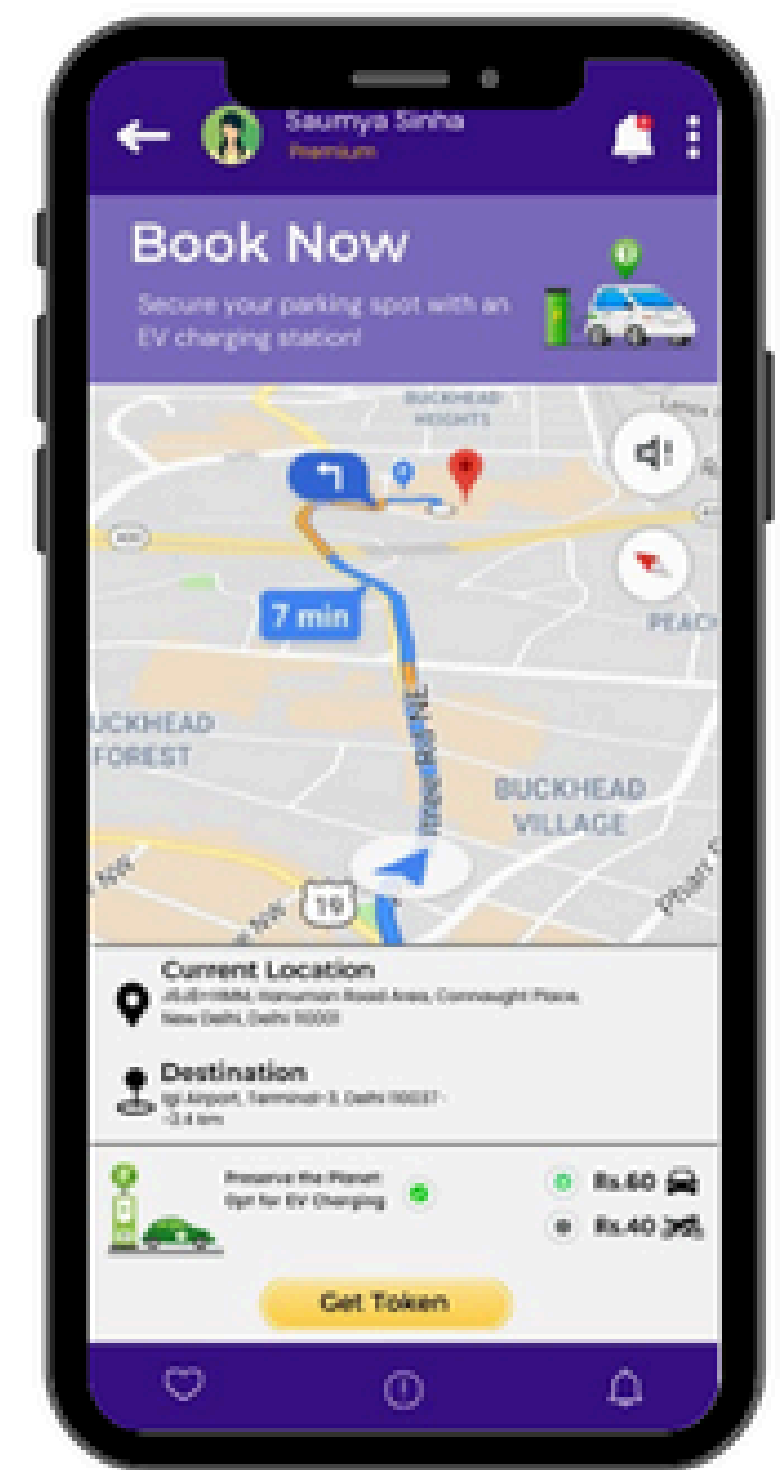
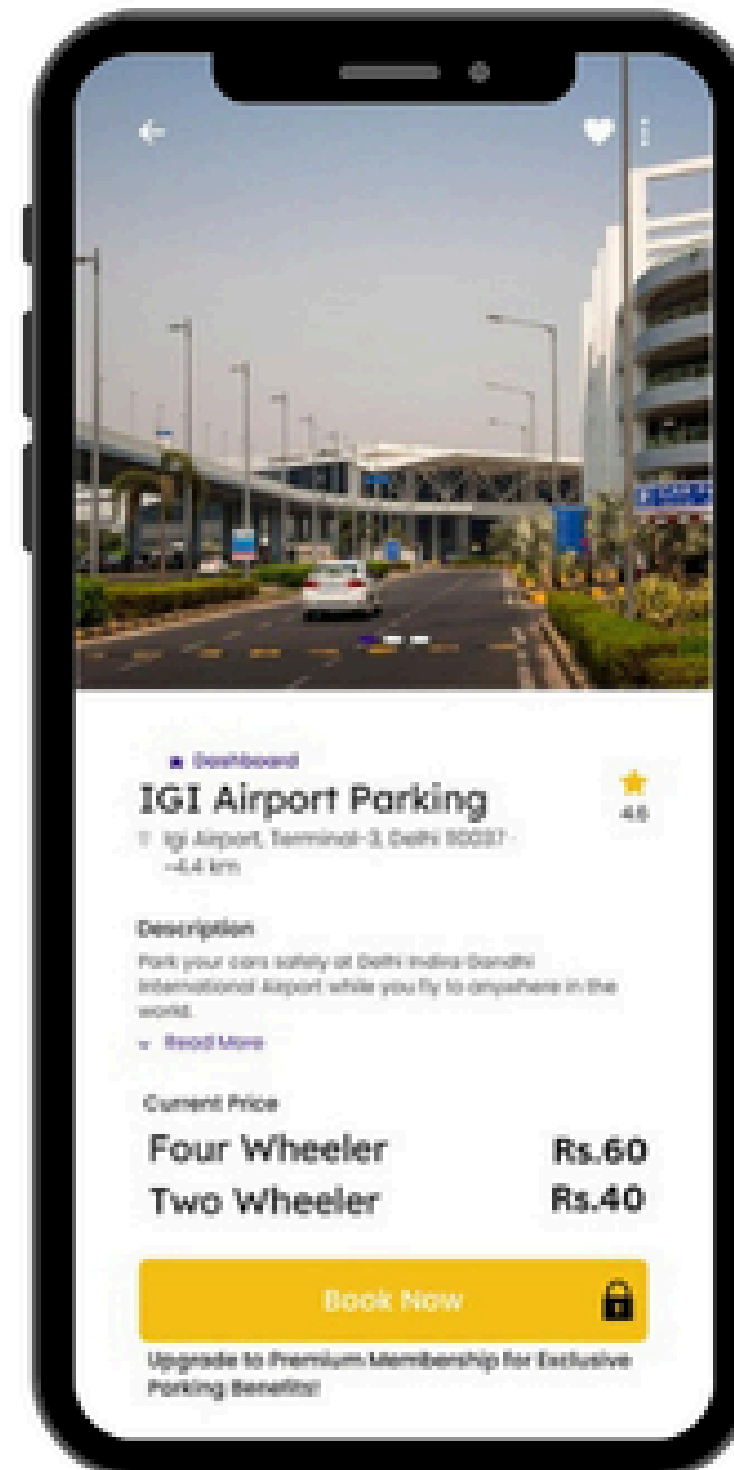
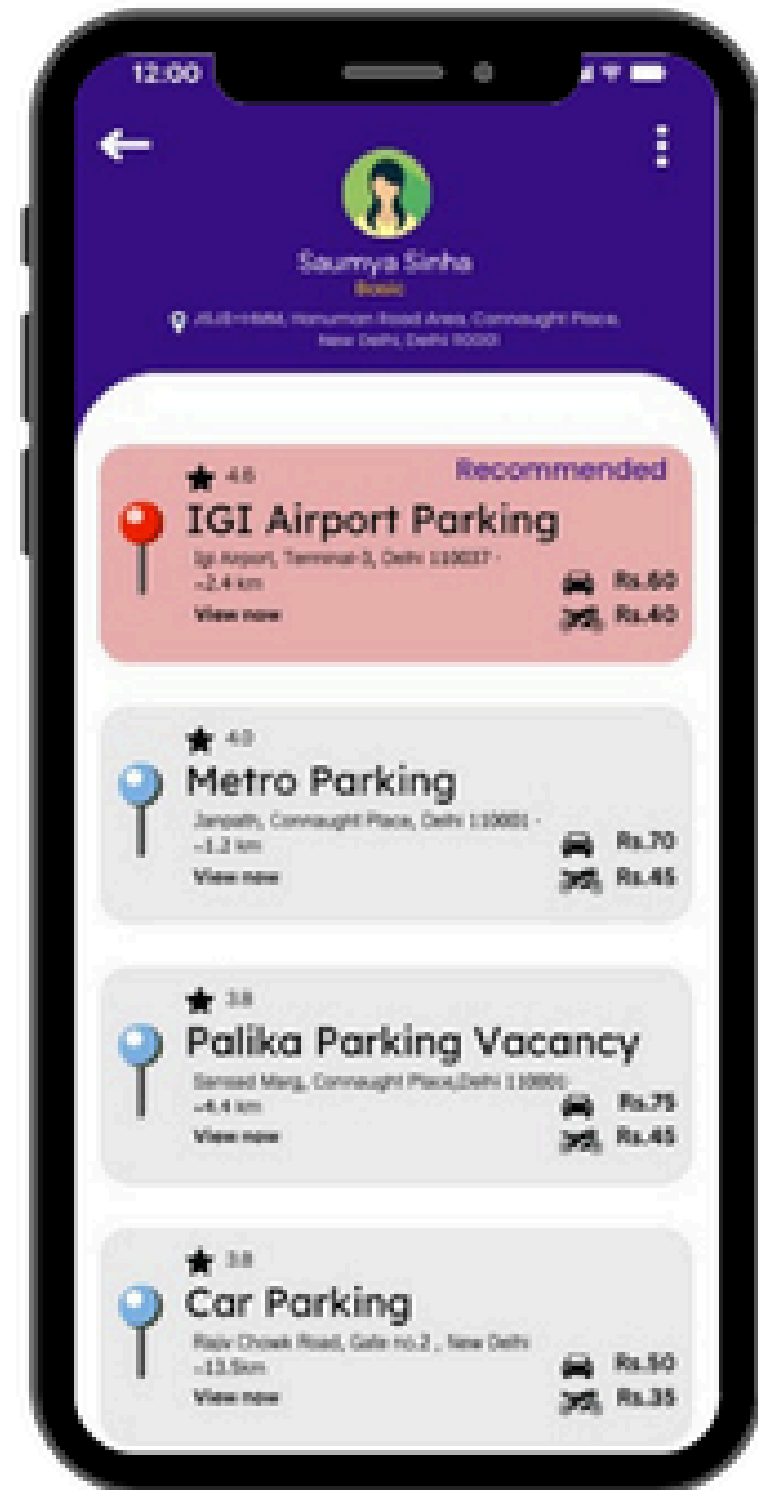
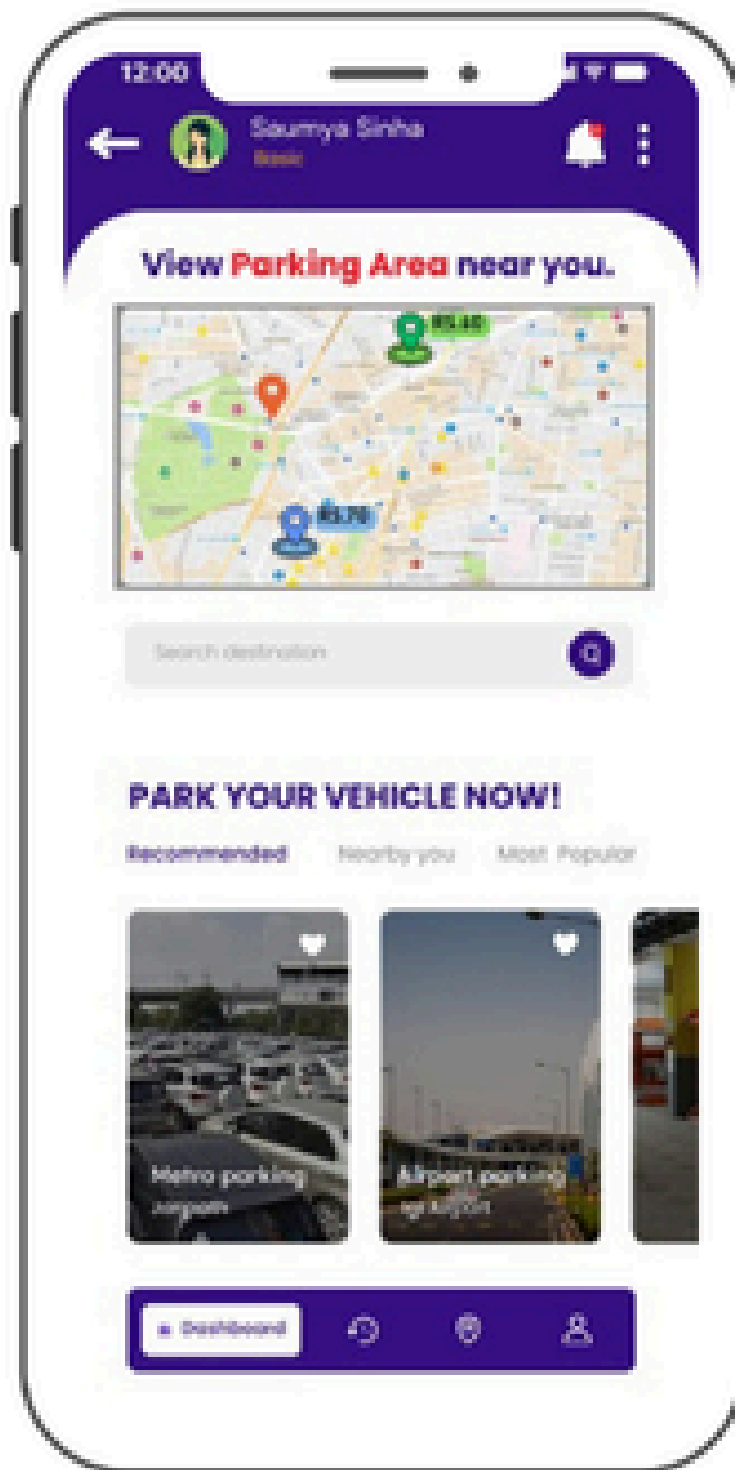
## Proposed Idea

- User opens the App to find a suitable parking spot, as per the info provided in **map overview** of their location/destination.
- Congestion in parking spaces is handled through **Dynamic Pricing** which is regulated as per **occupancy in the Parking** lot through **AI/ML** for parking facilities, optimizing prices based on demand, time of day, and special events.
- Availability information of the new nearest affordable parking spaces, **off-Street parking** etc. is also provided to the user via app.
- An institution can **register** their parking space, with the availability and base price, through **Admin** application.
- Providing **EV vehicles charging** point and pre booking via our app.
- Create a mobile app for parking enforcement officers and a web portal for **violation payment processing** Integrate with **license plate recognition** technology.
- Provide city officials with parking analytics and insights to **aid in urban planning**, traffic management, and infrastructure development.
- **Elimination** of **on-street parking** which significantly reduces traffic congestion.

## Flowchart



# USER INTERFACE





# WHAT MAKES OUR PRODUCT UNIQUE?

## Use Cases

Parking hotspots, where congestion on roads occur due to huge parking lines and **on-street parking is tackled.**

The higher prices (via **Dynamic Pricing**) of these parking hotspots, **eliminate over-demand** of such spaces, and would move people's interest toward a much affordable alternative.

This is in turn **regulates the supply and demand** for parking spaces.

The software can contribute to **economic development** by **increasing revenue** for parking operators, generating taxes for local governments, and creating employment opportunities in the parking industry.

Users concerned about the environment can check the app's environmental impact assessment to see how using public transport and efficient parking **reduces pollution.**

## Show Stoppers

**Legal obstacles**, such as disputes over intellectual **property rights or lawsuits** related to parking enforcement, can become show stoppers if not managed effectively.

**Opposition** or a lack of support from **key stakeholders**, including city administrators, parking operators, and the public, can be a significant obstacle.

Integration with existing city infrastructure, such as traffic management systems or payment gateways, is often required. **Delays or issues with integration** can slow down the project.

## USPs

Two-tier system **subscription model i.e. Boost and Premium**, is introduced giving them both an affordable and high-class option to invest their money.

The time limited **Token System** for the subscribed members, would give them a discount and pre-booking slots.

The aspect of **time-limited tokens**, protect this feature from being abused. The tokens would be **verified** through Admin App scanning upon entry.

Positively impact on the environment as you contribute to **reduced air pollution and smoother traffic flow.**

Uses cutting-edge technology to **provide real-time information** on **available parking spaces.**

- **FLUTTER**
- **DART**
- **FIREBASE**
- **ANALYTICS AND CRASHLYTICS**
- **GOOGLE MAP SDK**

*Thank You*