

CREATING FULLSTACK APPLICATION

PROBLEM STATEMENT :

The aim of this project is to address the difficulty of finding parking spaces in crowded urban areas. Due to the lack of real-time information and manual parking processes, drivers waste time, fuel, and effort searching for available slots. This project, ParkEase, provides a smart parking solution using the MERN stack that allows users to view parking availability, book slots in advance, make simulated payments, and manage bookings digitally. The system also enables administrators to manage parking lots, pricing, and availability efficiently.

OBJECTIVES :

- Provide real-time parking availability
- Enable advance parking slot booking
- Support simulated online payments
- Allow remote booking extension
- Enable admin management of parking lots and pricing

SOLUTION :

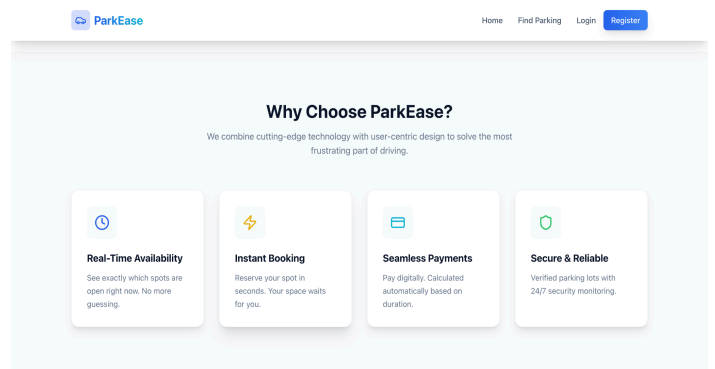
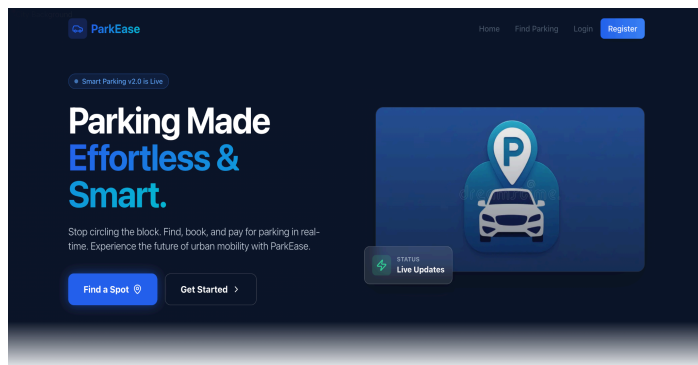
ParkEase is a MERN-stack based smart parking system designed to help users find, book, and manage parking slots in crowded cities efficiently. It provides real-time availability, supports advance booking and payments, and allows administrators to manage parking lots, pricing, and occupancy seamlessly.

- Node.js:
Handles the backend logic, processes user requests, manages the database connections, performs background tasks, and supports real-time updates.
- Express.js:
Facilitates building backend APIs, managing routes, handling authentication, and controlling errors in a structured manner.
- React:
Creates a smooth, responsive single-page application (SPA) where users can log in, view parking availability, book slots, extend bookings, and leave reviews.
- MongoDB:
Stores all application data including users, parking lots, bookings, and payments, ensuring efficient data management.

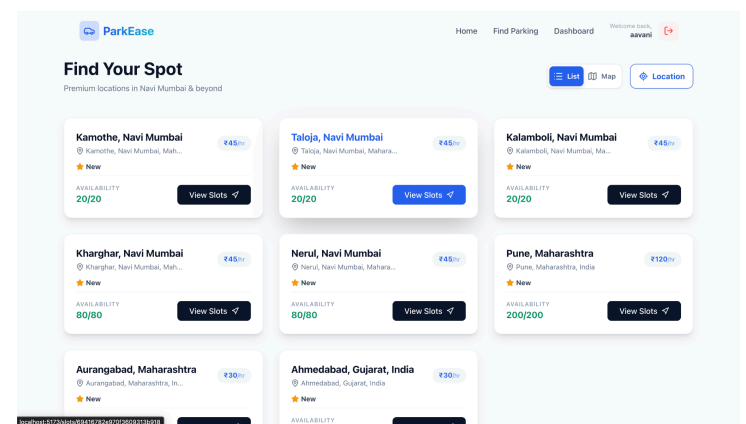
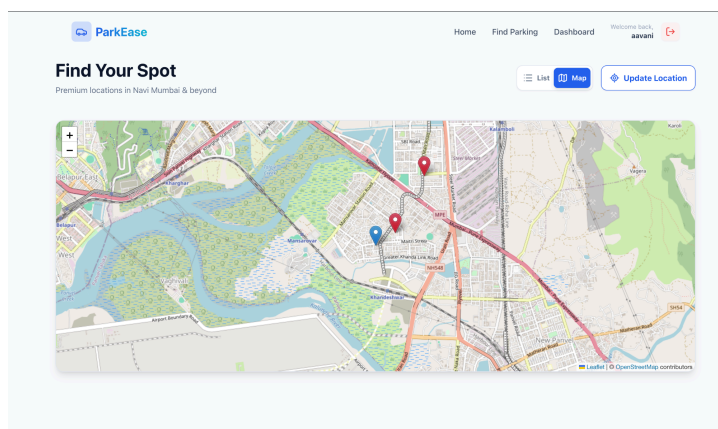
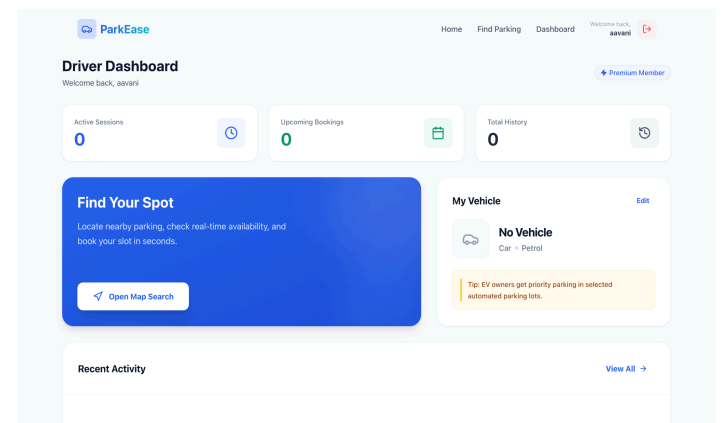
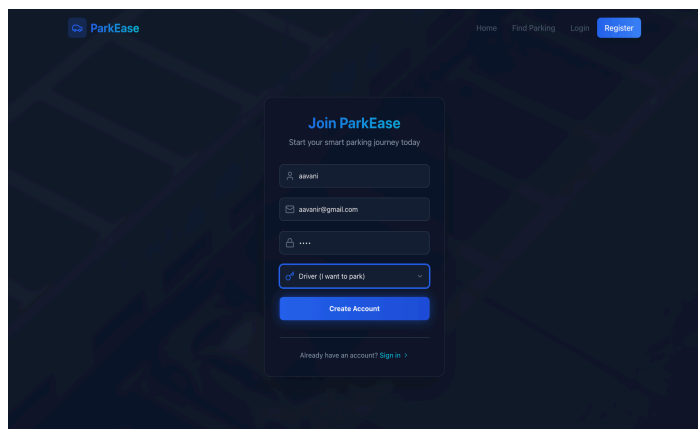
Github link : https://github.com/avi-0605/ParkEase_CFA

Deploy link : <https://park-ease-cfa.vercel.app/>

LANDING PAGE :



USERS / DRIVER VIEW :



ParkEase

HomeFind ParkingDashboardWelcome back, aarav

Back to Slots

Book Your Spot

Advance Booking Enabled

You can book slots up to 7 days in advance.

Start Time

16/12/2025, 02:26 PM

End Time

16/12/2025, 03:26 PM

Smart Pricing Active

Rates are calculated based on real-time demand and duration. Extend anytime from your dashboard.

Proceed to Payment

Order Summary

LOCATION

Kamothe, Navi Mumbai

Kamothe, Navi Mumbai, Maharashtra, India

RATE

₹45/hr

Total Price

₹45.00

Secure SSL Payment

Secure Payment

₹45.00

CARD NUMBER

0000 0000 0000 0000

CARDHOLDER NAME

AAVANII RAJESH

EXPIRY

12/32

CVV

...

Cancel

Pay Now

Payments are secure • Simulated Environment

ParkEase

HomeFind ParkingDashboardWelcome back, aarav

Parking Receipt

ID: 93126C78

UPCOMING

LOCATION

Kamothe, Navi Mumbai

Kamothe, Navi Mumbai, Maharashtra, India

SLOT NO.

A-1

AMT PAID

₹45

Date

12/16/2025

Duration

08:26 PM - 09:26 PM

QR Code

Scan this code at the parking terminal for entry/exit.

ADMIN VIEW :

ParkEase

HomeFind ParkingAdmin DashboardWelcome back, admin

TOTAL LOTS

1

TOTAL SLOTS

120

ACTIVE BOOKINGS

1

EST. REVENUE

₹12500

Peak Hour Insights

0:00 - 1:00

LOW (1)

System Alerts

SYSTEM

Backend services are running normally.

Activity Log

TOGGLE STATUS

Parking Lot "Talaja, Navi Mumbai" is now Inactive

10:03:57 PM

TOGGLE STATUS

Parking Lot "Talaja, Navi Mumbai" is now Active

10:03:47 PM

TOGGLE STATUS

Parking Lot "Talaja, Navi Mumbai" is now Inactive

10:03:33 PM

Add Parking Lot

Name

Address

120

35

Latitude (e.g. 1!)

Longitude (e.g. 1!)

Create Lot

Manage Locations

Search...

All

Information

Status

Capacity

Controls

Talaja, Navi Mumbai

Talaja, Navi Mumbai, India

Online

120/120 Available

Add Parking Lot

Name

Address

120

35

Latitude (e.g. 1!

Longitude (e.g. 1!

Create Lot