



FASTPARK
SYSTEM



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FASTPARK MAGAZINE · REVIEW 01 · 2025-2026

SMART METRO PARKING

India's most intelligent, voice-activated, real-time parking management platform

— built by Team SmartEdge

🔴 Live at fastpark.online

🎤 Voice-Activated "Hey Dude"

⚡ Firebase-Powered

🏧 UPI Cashless Payments

📊 Admin Analytics Dashboard

www.fastpark.online

Rathinam Technical Campus

Department of Computer Science & Engineering — CSE B

Project ID: C29RTCY120 | Academic Year: 2025-2026

Team SmartEdge

Inspired by SIH Problem #SIH1515



INTRODUCTION

What is FastPark?

FastPark is a fully web-based smartparkingmanagementsystem built for metro, colleges and urban facilities. It delivers real-time slotvisibility, contactless booking, voice assistance, and automated billing — all in one platform, accessible on any device .



The Vision

To eliminate the threecore problems plaguing traditional parking: time waste, cash dependency, and zero real-time visibility. FastPark replaces manual ticketing with intelligent, contactless, data-driven parking management.

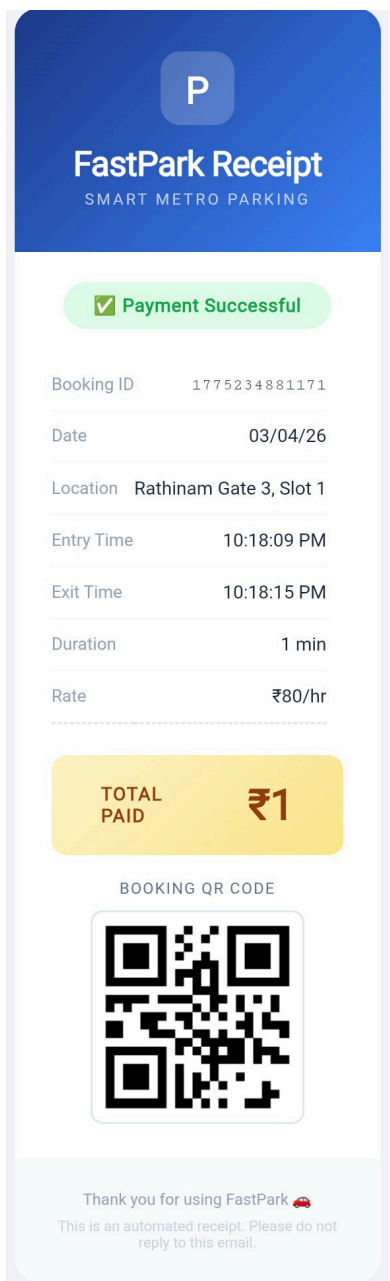


Login Page — fastpark.online | Email/Password + Google OAuth

Live at fastpark.online — Deployed on Vercel with a GoDaddy custom domain. Powered by Firebase Authentication, Firestore, and Realtime Database. Supports 45 parking slots across 3 gates at Rathinam Technical Campus.

Booking receipts are sent to your registered email

Customerreceipts, bookingconfirmations, and paymentrecords are delivered to the email used during login — e.g., koushik02075499@gmail.com



Secure Authentication

Firebase Auth with Email/Password and Google OAuth. Password visibility toggle, forgot password flow, and email verification included.

Two User Roles

Customer: Book slots, pay, view history.
Admin: Monitor, scan QR, bill vehicles, export reports. Role detected on login automatically.

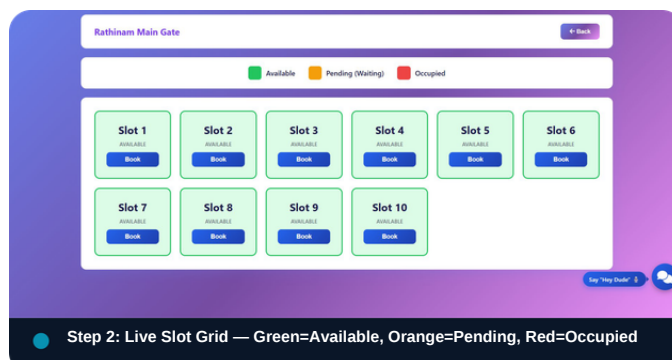
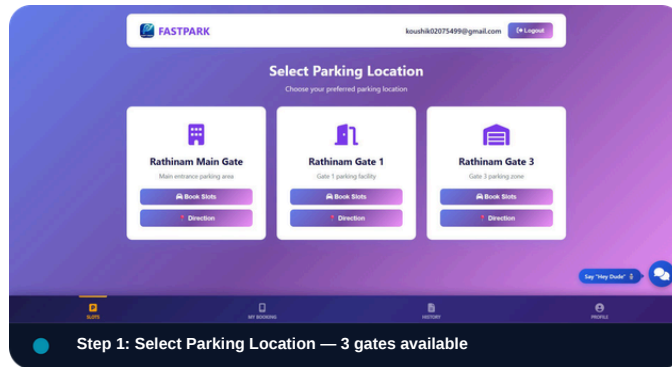
Thank you for using FastPark 🚗
This is an automated receipt. Please do not reply to this email.



FOR DRIVERS

Select Location & Book a Slot

After login, customers choose from 3 parking locations at Rathinam Technical Campus. Each location shows live slot availability in real-time, color-coded for instant understanding.



Rathinam Main Gate

Main entrance parking area with 10 public slots. Most used gate for daily visitors and students.

Rathinam Gate 1

Gate 1 parking facility with 10 public slots. Secondary entry point with direct academic block access.

Rathinam Gate 3

Gate 3 parking zone with 10 public slots. Nearest to hostel and sports complex areas.

Slot Status Colors: Available — Slot is free, click "Book" to reserve | Pending — Slot is reserved for 30 minutes | Occupied — Slot is in use, unavailable for booking. Status updates live via Firebase Realtime Database every few seconds.



BOOKING PROCESS

Book & Speak to Park

Clicking "Book" on any available slot opens a clean booking form. Enter your name, phone, and vehicle number — then confirm. Once booked, your unique QRcode is generated instantly. For hands-free help, say "Hey Dude" to activate the Parking Assistant chatbot.



What You Fill In

- SlotNumber:** Auto-filled from your selection
- Name:** Your full name for the booking record
- Phone Number:** For admin contact if needed
- Vehicle Number:** Plate number for gate verification
- Rate:** Shown as ₹80 per hour automatically



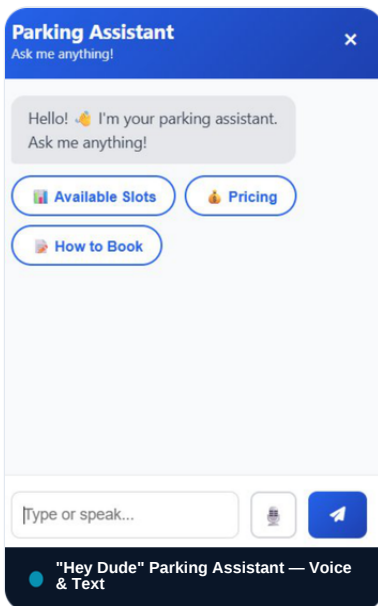
30-Minute Hold Window

Once booked, the slots are held for 30 minutes. If you don't arrive, the slot auto-releases. A 5-minute cooldown prevents re-booking abuse. Receipt emailed to your registered address.



Receipt sent to: your login email

Booking confirmation, QRcode, entry/exit times, and payment receipt are all emailed automatically after each transaction.



Say "Hey Dude"

FastPark features India's first voice-activated parking assistant. Simply say "Hey Dude" — the microphone activates automatically. Ask about slot availability, pricing, directions, or how to book. No button press needed. The chatbot also supports typed queries and has three quick-action buttons: Available Slots, Pricing, and How to Book.



Quick Actions Available

- Available Slots** — See which slots are free right now
- Pricing** — ₹80/hr, all gate info
- How to Book** — Step-by-step booking guide



FOR FACILITY STAFF

Admin Command Centre

The Admin Dashboard gives facility managers complete control—live slot monitoring, QR-based entry/exit scanning, autobilling, earnings overview, and Excel report exports. All in one dark-themed, intuitive interface.

The screenshot shows the Admin Dashboard with a dark theme. At the top, there's a header with 'Admin Dashboard' and a 'Logout' button. Below is the 'Overview Dashboard' section with four cards: 'Total Slots' (45), 'Available' (45), 'Pending' (0), and 'Occupied' (0). The 'Earnings Overview' section follows with four cards: 'Today's Earnings' (₹0), 'This Week' (₹0), 'This Month' (₹0), and 'This Year' (₹1). At the bottom, there's a navigation bar with icons for Dashboard, Live Slots, Scanner, Bookings, and Reports. A status bar at the very bottom reads: 'Admin Dashboard — Overview: 45 Total Slots, Earnings (Today/Week/Month/Year), Live Slot Status'.

Four summary cards are displayed in a row: 'Total Slots' (45), 'Available' (45), 'VIP Slots (Hidden)' (5), and 'Gates Covered' (3).



QR Entry Scanner

Admin scans customer's QR at the gate. Billing timer starts automatically. No manual time entry — the system records exact entry timestamp.



Auto Billing (₹80/hr)

Second QR scan at exit stops the timer. Total fare is calculated automatically. Zero manual arithmetic — the system does it all.



Excel Export & Reports

Filter by date-time range, preview records, then download to Excel using SheetJS. Full audit trail for all bookings and payments.

Admin Navigation Tabs: Dashboard (earnings overview) | Live Slots (real-time slot grid) | Scanner (QR entry/exit) | Bookings (all records) | Reports (Excel export)



— INNOVATION

What Makes FastPark Stand Out

While most parking systems are glorified spreadsheets, FastPark combines voice AI, contactless QR billing, role-based access, and hidden VIP management into one seamless web platform. Here are the four features no other parking system has.

01

Voice-Activated "Hey Dude" Chatbot

India's first parking system with a hands-free voice wake word. Say "Hey Dude" — the microphone auto-activates. No button press. The assistant provides real-time info, answers pricing queries, and guides the entire booking process by voice. Works on both mobile and desktop browsers using the Web Speech API.

02

Dual-Role Single Web Platform

One URL — two completely different dashboards. Customers see a booking interface with live slots, QR code, and payment history. Admins see a billing console with scanner, earnings overview, slot management, and reports. Role is detected automatically at login. Zero app installation — works on any browser.

03

QR-Triggered Auto-Billing

Billing starts the instant the admin scans the customer QR at entry — and stops exactly when the exit QR is scanned. The system calculates duration and fare (₹80/hr) with zero manual input. No human error, no disputes, no manual timekeeping. Receipt is emailed automatically to the customer's registered email address.

04

5 Hidden VIP Slots (Ghost Slots)

Five VIP/offline slots exist in the system but are completely invisible to customers — they don't appear in the public slot count or booking interface. Managed exclusively by admin for offline bookings, reserved corporate parking, or special guests. A sophisticated access-control feature unique to FastPark.



UPI Auto-Fill Payment

Payment amount is auto-calculated and pre-filled in the UPI screen. UPI ID: 7200746814@pthdfc. Pay via PhonePe, GPay, Paytm — any UPI app.



Instant QR Code Generation

A unique QR code is generated immediately upon booking confirmation. Displayed on-screen and emailed. Admin scans this QR to register entry and start the billing clock.



Date-Range Excel Export

Admin can filter records by any date-time range, preview the data table, and download a formatted Excel report. Powered by SheetJS. Perfect for audit and accounting.



TECHNOLOGY

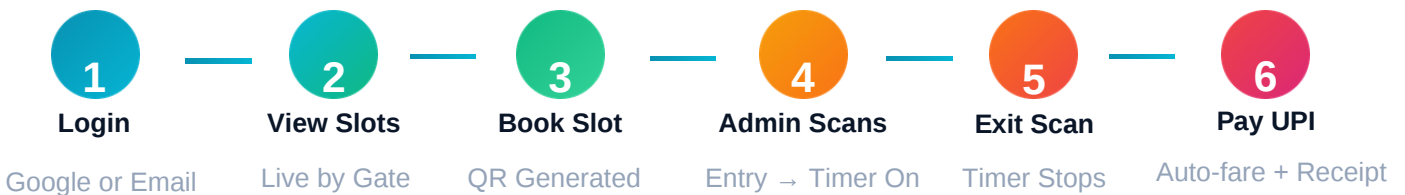
Built With Modern Web Tech

FastPark is built entirely on standard web technologies— no native apps, no backend servers to manage. Firebase handles auth, database, and real-time sync while Vercel provides instant, global deployment.

FRONTEND	BACKEND / DATABASE	DEPLOYMENT
<ul style="list-style-type: none">▶ HTML5 — Semantic Structure▶ CSS3 — Flexbox & Grid▶ Vanilla JavaScript (ES6+)▶ Web Speech API (Voice)▶ QRCode.js — QR Generator▶ html5-qrcode — QR Scanner▶ Google Maps Embed API	<ul style="list-style-type: none">▶ Firebase Authentication▶ Cloud Firestore (NoSQL)▶ Firebase Realtime Database▶ Google OAuth 2.0▶ UPI Deep Link Integration▶ SheetJS — Excel Export▶ Firebase Project: metropolitan-parking	<ul style="list-style-type: none">▶ Vercel — Production Hosting▶ GoDaddy — fastpark.online▶ GitHub — Version Control▶ HTTPS / SSL Secured▶ Responsive (All Devices)▶ Zero Backend Server Cost▶ Free Tier Firebase Hosting

END-TO-END FLOW

How It Works — Customer Journey





Team SmartEdge

Six passionate Computer Science Engineering students from Rathinam Technical Campus, Smart parking through intelligent web technology.

1

Koushik S

Lead Developer & Full Stack

2

Kavya M

Documentation & Research

3

Gayathri E

Database & Backend

4

Maha Sri R

UI/UX & Frontend

5

Khaarthekheyas S

Testing & QA

6

Gokul Aswin M

Deployment & DevOps

www.fastpark.online



Scan to open FastPark live

Project ID
C29RTCY120

Institution
Rathinam Technical Campus

Inspired By
SIH Problem #SIH1515

Academic Year
2025–2026

Receipt Email
Sent to login email