🎟️ TicketEase – Smart Mobile Ticket Booking App

Internship Project | Full-Stack Application | Flutter + Node.js + PostgreSQL

> *"Code is a canvas. I didn't just build an app — I architected an experience."*
> — **Vrund Leuva**

✨ Quick Glance – The Elevator Pitch

TicketEase isn't just another app — it's a production-grade **ticket booking system**, optimized for **real-world use**, packed with thoughtful UI, multilingual support, and robust backend APIs.

Built entirely from scratch, this app handles everything — from **OTP-based login** and **dynamic ticket carts** to **localization**, **notifications**, and **payments** — with a clean, scalable codebase and powerful backend integrations.

🔗 APK Download: https://bit.ly/ticketease-apk

📦 Built with Flutter 3.22.0 | Tested on Android 11+

⚠️ To install:
Enable "Install from Unknown Sources" on your Android phone.

📘 Table of Contents

---

1. 🎯 Executive Summary

> “I wanted to build an app that felt real — and could be deployed tomorrow if needed.”

TicketEase is a **mobile-first**, **cross-platform**, and **fully modular full-stack application** designed to simulate a production-ready ticket booking system. It includes:

- 🔐 Secure OTP login
- 🎬 Real-time movie, entry, and attraction booking
- 🌐 Hindi + English localization
- 🔔 Push notifications
- 💳 Payment simulation
- 🔄 Complete backend + API + DB integration

---

2. 🚀 App Walkthrough (Story Mode 🧭)

> “Imagine you’re a user… here’s your journey”

1️⃣**Launch the app** — A splash screen welcomes you
2️⃣**Choose your language** — Hindi 🇮🇳 or English 🇬🇧
3️⃣**Enter your number** — OTP arrives 🔐
4️⃣**Verify OTP** — Welcome aboard!
5️⃣**Dashboard opens** — Movies, Parking, Tickets, Attractions
6️⃣**Add some bookings** — Like a shopping cart experience 🛒
7️⃣**Checkout & Simulate Payment**
8️⃣**Receive Notifications** — With push alerts

9️⃣ **Manage Profile** — Update, View history
🔁 **Repeat** — All state, language, and auth persisted

3. 🧩 Feature Matrix

📦 **Feature**	✅ **Implemented**	💬 **Notes**
OTP-based Auth	✅	Stateless, secure
Multilingual UI	✅	Easy toggle at runtime
Booking Cart	✅	Cart-like experience
Payment Simulation	✅	Success page, booking lock
Push Notifications	✅	Firebase integrated
Profile Management	✅	View/edit bookings
Modular UI	✅	Clean, reusable widgets

API Integration	✅	Real REST APIs

4. 🔧 Tech Stack Breakdown

🔍 **Layer**	🧠 **Technology**	📌 **Reason**
Frontend	**Flutter**	Cross-platform speed
Language	**Dart**	Null-safety + modern syntax
Backend	**Node.js**	Fast, event-driven
DB Layer	**Prisma ORM**	Type-safe queries
Database	**PostgreSQL**	Scalable & relational
State Mgmt	**Provider**	Reactive UI updates
Auth	**JWT + OTP**	Secure & stateless
i18n	**Easy_Localization**	Runtime toggles

Storage	**SecureStorage**	Persist tokens/flags
UI Tools	**Firebase Messaging**	Push Notifications

---

5. 🧱 System Architecture

```
[ Flutter UI ] ⇄ [ API Layer ] ⇄ [ Node.js Express Server ]

                                  ⇄ [ Prisma ORM ]

                                  ⇄ [ PostgreSQL DB ]
```

✅ Clean separation of concerns
✅ Stateless auth via JWT
✅ Modular service abstraction

---

6. 📂 Folder Structures

📱 Flutter Frontend (Modular Clean Architecture)

```
lib/

├── core/              → Routing, themes, config

├── features/          → auth, movies, parking, etc.

├── services/          → auth_service, api_service
├── domain/ + data/  → Models & abstraction
└── widgets/         → Reusable cards, forms
```

🛠️ Backend Structure (Node.js + Express)

```
ticket_booking_backend/
├── controllers/        → Business logic
├── routes/             → API route maps
├── prisma/             → schema.prisma + seed
├── middleware/         → JWT + error handler
├── app.js              → App config
└── server.js           → Entry point
```

---

7. 🔗 REST API Map

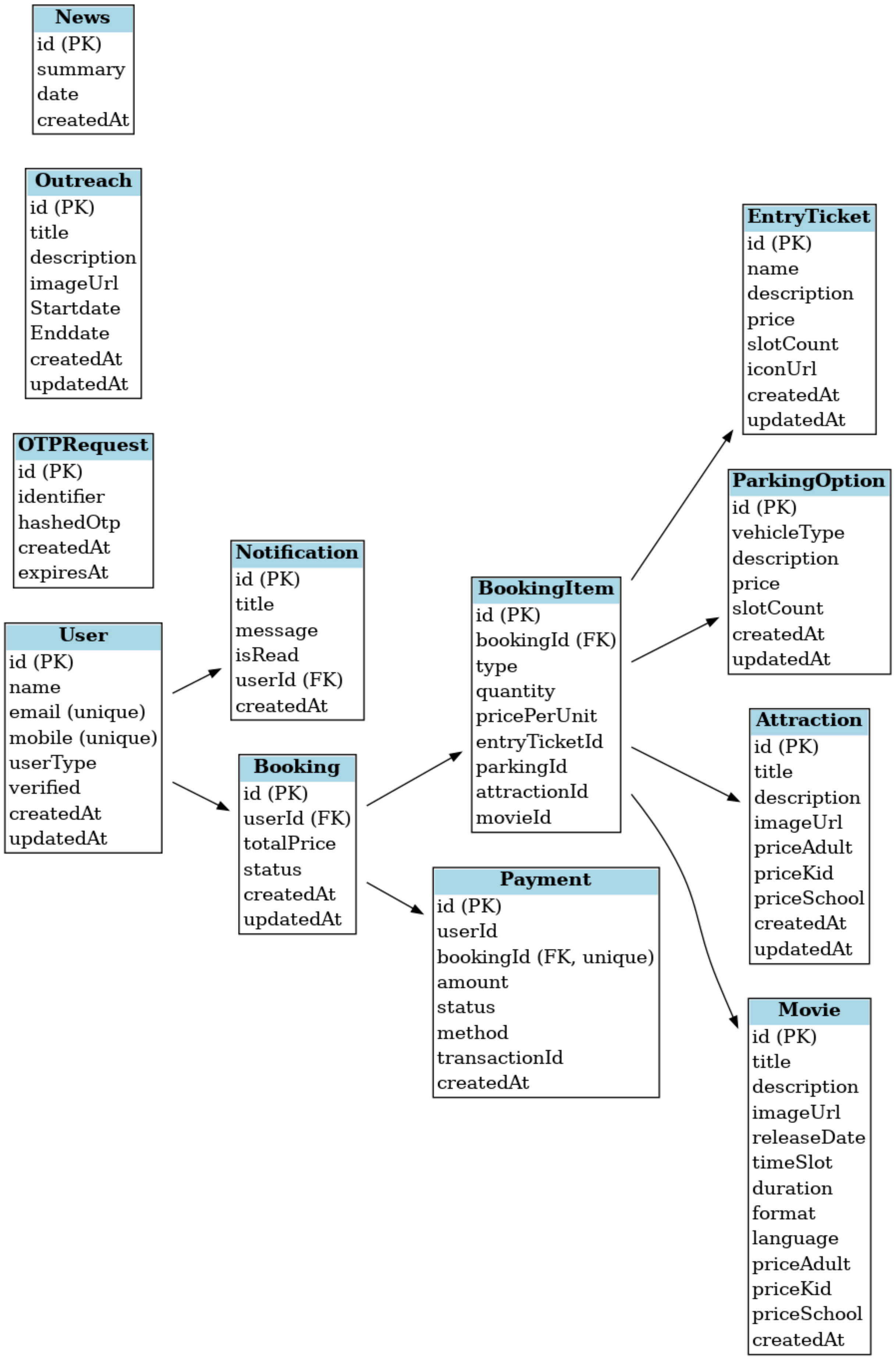
Method	Endpoint	Auth	Description
POST	`/auth/request-otp`	❌	Send OTP
POST	`/auth/verify-otp`	❌	Verify OTP → JWT

GET	`/movies/latest`	✅	Top 5 movies
POST	`/bookings`	✅	Create a booking
POST	`/payments`	✅	Simulate payment
GET	`/profile`	✅	View profile
PUT	`/profile`	✅	Update profile
GET	`/notifications`	✅	Get all
PUT	`/notifications/mark-read/:id`	✅	Mark one read

---

8. 🧬 Database Schema (ERD)

✅ All types validated by Prisma schema
✅ Seeded test data included


News
id (PK)
summary
date
createdAt
Outreach
id (PK)
title
description
imageUrl
Startdate
Enddate
createdAt
updatedAt
OTPRequest
id (PK)
identifier
hashedOtp
createdAt
expiresAt
User
id (PK)
name
email (unique)
mobile (unique)
userType
verified
createdAt
updatedAt
Notification
id (PK)
title
message
isRead
userId (FK)
createdAt
Booking
id (PK)
userId (FK)
totalPrice
status
createdAt
updatedAt
BookingItem
id (PK)
bookingId (FK)
type
quantity
pricePerUnit
entryTicketId
parkingId
attractionId
movieId
Payment
id (PK)
userId
bookingId (FK, unique)
amount
status
method
transactionId
createdAt
EntryTicket
id (PK)
name
description
price
slotCount
iconUrl
createdAt
updatedAt
ParkingOption
id (PK)
vehicleType
description
price
slotCount
createdAt
updatedAt
Attraction
id (PK)
title
description
imageUrl
priceAdult
priceKid
priceSchool
createdAt
updatedAt
Movie
id (PK)
title
description
imageUrl
releaseDate
timeSlot
duration
format
language
priceAdult
priceKid
priceSchool
createdAt

9. 🔄 Screen Flow Diagram

```
[SplashScreen]

   ↓

[LanguageSelectorScreen]

   ↓

[Login / OTP Verification]

   ↓

[DashboardScreen]

 ├── MovieScreen

 ├── EntryTicketScreen

 ├── ParkingScreen

 ├── AttractionsScreen

 ├── Notifications

 └── ProfileScreen

   ↓

[CheckoutScreen] → [PaymentScreen] → [SuccessScreen]
```

10. 💡 Engineering Challenges

🧠 **Problem**	✅ **My Solution**
Managing cart with multiple booking types	Created shared `BookingModel` & reusable widgets
Runtime localization & theme sync	Used `context.setLocale()` with persistence
Complex nested routing	Structured `GoRouter` with clear nested paths
Real-time state sharing	Used `Provider + ChangeNotifier`
Testing edge cases	Used Jest (backend) + Flutter test framework

---

11. 📘 What I Learned

- Building **real full-stack apps** from scratch
- Implementing **OTP-auth and token security**
- Designing **modular and scalable folder structures**
- Developing for **multilingual audiences**

- Writing **API contracts**, DB schema, and test cases
- Turning an **internship task** into a **production app**

---

12. 🔮 Future Upgrades

🌟 **Feature**	🚀 **Description**
💳 Razorpay / Stripe	Real payment integration
👤 Admin Panel	For content/news/movie mgmt
🌗 Dark Mode	UI theme toggle
🔌 Firebase / WebSockets	Live updates
📊 Analytics Dashboard	Admin metrics

---

13. 🙋 My Contributions

✅ Designed and built entire **Flutter frontend**
✅ Developed complete **Node.js + PostgreSQL backend**
✅ Integrated real APIs with **Flutter UI logic**

✅ Managed **project delivery, documentation, and testing**
✅ Built reusable components, implemented auth, i18n, booking logic
✅ Created **beautiful UI**, structured code, and documented every layer

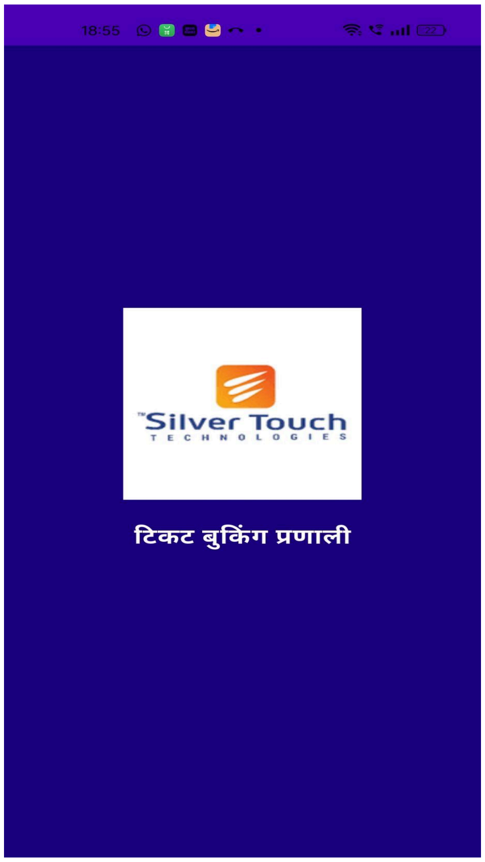
---

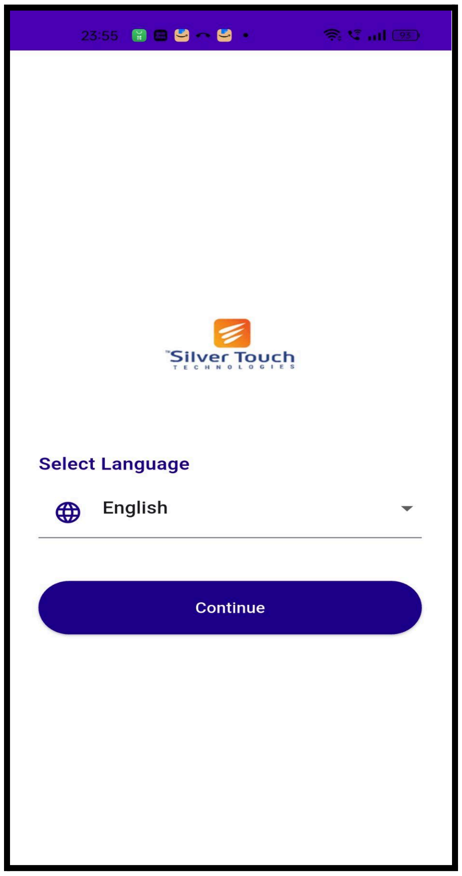
14. 📱 TicketEase – App Screenshots & UI

> *"Real-world design, real-world UX. Below are actual screenshots from the TicketEase mobile app."*

1️⃣ Splash Screen + Language Selector

📸 ***Welcome screen + toggle for Hindi 🇮🇳 / English 🇬🇧***



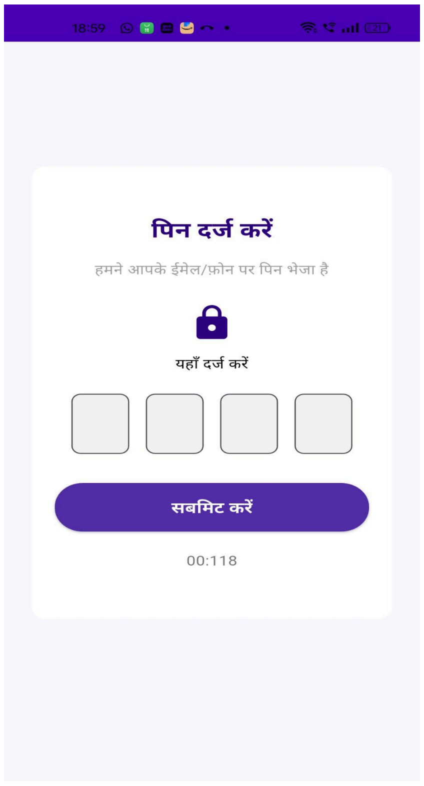


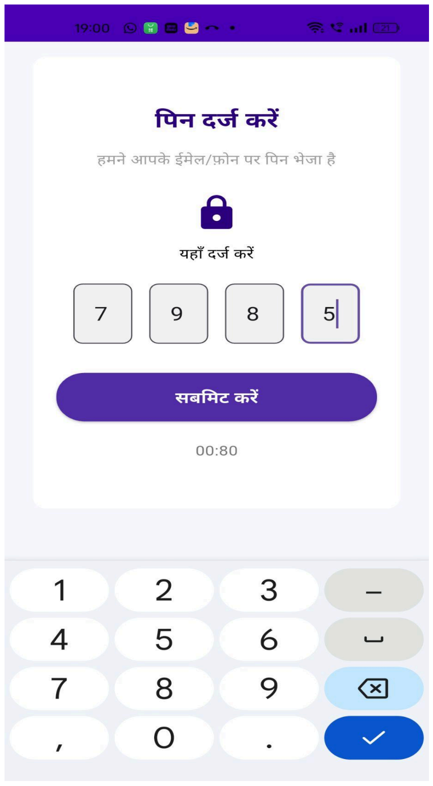
Select Language

English

2️⃣ OTP Authentication Flow

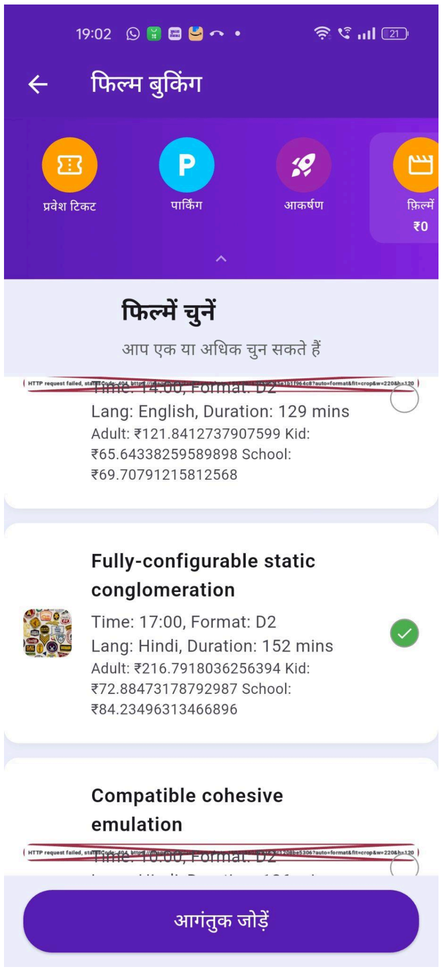
📸 *OTP input field with validation and token generation*





4️⃣ Movie Booking Screen

📸 *Select from trending movies and book tickets for specific times*



फिल्में चुनें

आप एक या अधिक चुन सकते हैं

HTTP request failed, statusCode: 404, https://...1f964c8?auto=format&fit=crop&w=220&h=120

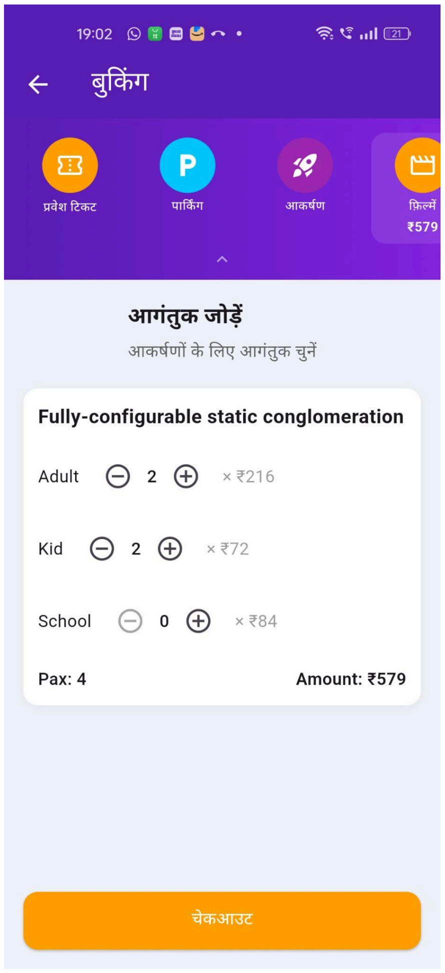
~~Time: 14:00, Format: D2~~
Lang: English, Duration: 129 mins
Adult: ₹121.8412737907599 Kid: ₹65.64338259589898 School: ₹69.70791215812568

Fully-configurable static conglomeration
Time: 17:00, Format: D2
Lang: Hindi, Duration: 152 mins
Adult: ₹216.7918036256394 Kid: ₹72.88473178792987 School: ₹84.23496313466896

Compatible cohesive emulation

HTTP request failed, statusCode: 404, https://...208be5306?auto=format&fit=crop&w=220&h=120

~~Time: 10:00, Format: D2~~



आगंतुक जोड़ें

आकर्षणों के लिए आगंतुक चुनें

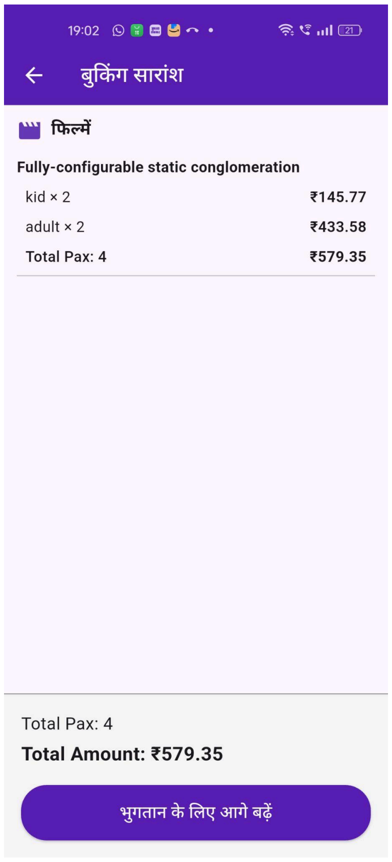
Fully-configurable static conglomeration

Adult	2	× ₹216
Kid	2	× ₹72
School	0	× ₹84

Pax: 4 **Amount: ₹579**

6️⃣ Cart + Payment Flow

📸 *Checkout interface, total calculation, and payment simulation screen*



बुकिंग सारांश

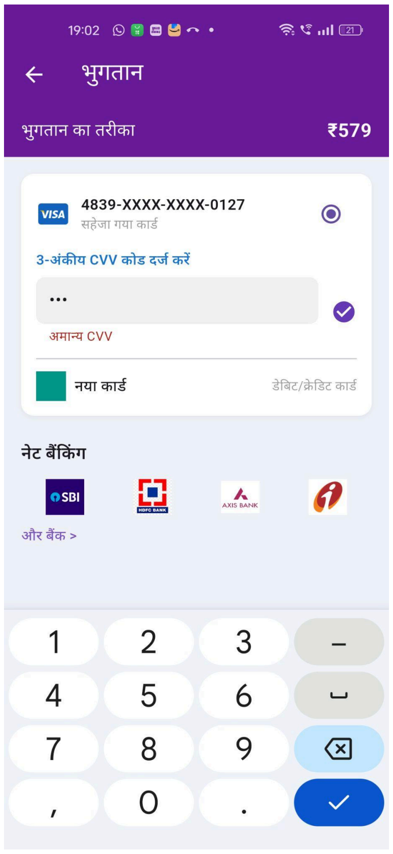
फिल्में

Fully-configurable static conglomeration

kid × 2	₹145.77
adult × 2	₹433.58
Total Pax: 4	₹579.35

Total Pax: 4

Total Amount: ₹579.35



भुगतान

भुगतान का तरीका ₹579

4839-XXXX-XXXX-0127
सहेजा गया कार्ड

3-अंकीय CVV कोड दर्ज करें

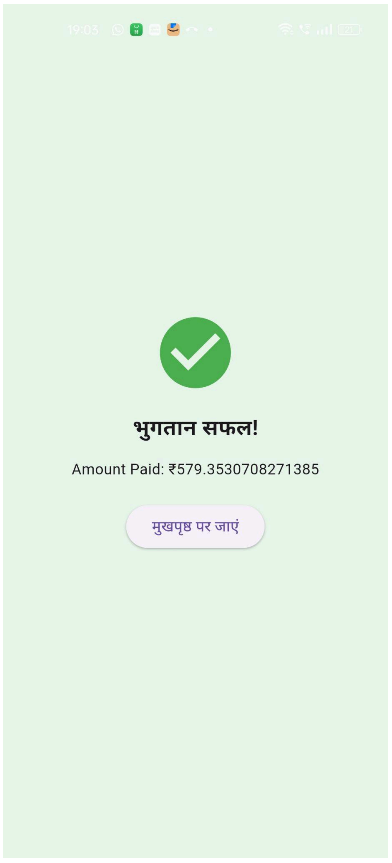
•••

अमान्य CVV

नया कार्ड डेबिट/क्रेडिट कार्ड

नेट बैंकिंग

और बैंक >

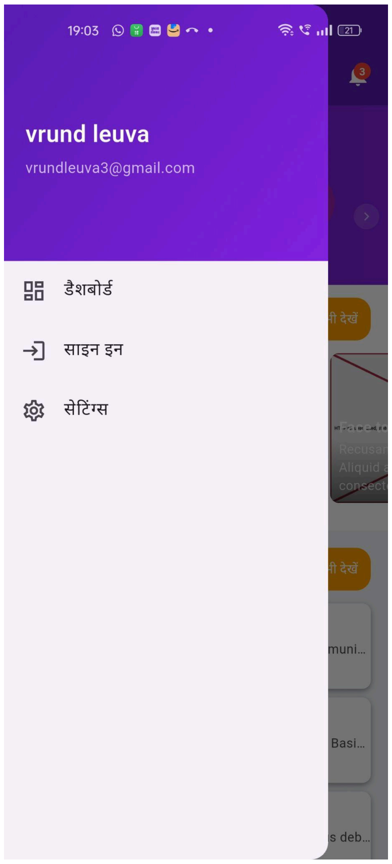


भुगतान सफल!

Amount Paid: ₹579.3530708271385

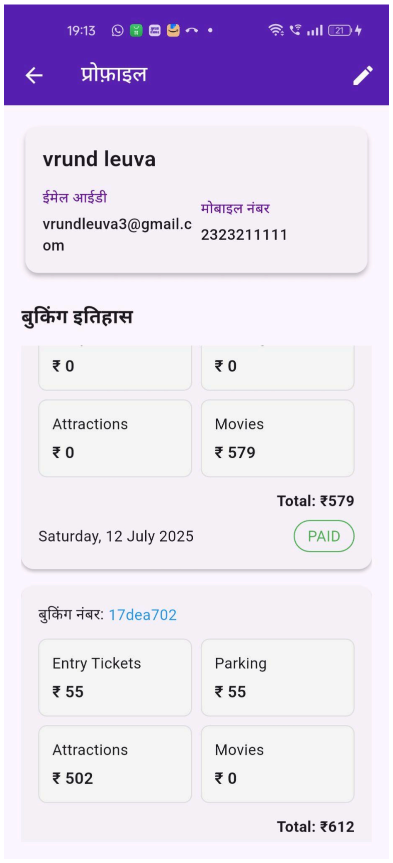
7️⃣ Profile & Booking History

📸 ***View user details, previous bookings, and update profile info***


19:03

vrund leuva

vrundleuva3@gmail.com


19:13

प्रोफ़ाइल

vrund leuva

ईमेल आईडी
vrundleuva3@gmail.com

मोबाइल नंबर
2323211111

बुकिंग इतिहास

₹ 0	₹ 0
Attractions ₹ 0	Movies ₹ 579

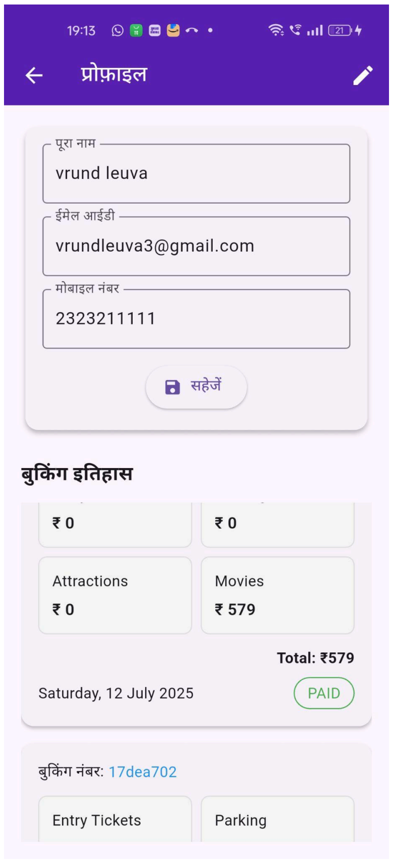
Total: ₹579

Saturday, 12 July 2025 PAID

बुकिंग नंबर: 17dea702

Entry Tickets ₹ 55	Parking ₹ 55
Attractions ₹ 502	Movies ₹ 0

Total: ₹612


19:13

प्रोफ़ाइल

पूरा नाम: vrund leuva

ईमेल आईडी: vrundleuva3@gmail.com

मोबाइल नंबर: 2323211111

बुकिंग इतिहास

₹ 0	₹ 0
Attractions ₹ 0	Movies ₹ 579

Total: ₹579

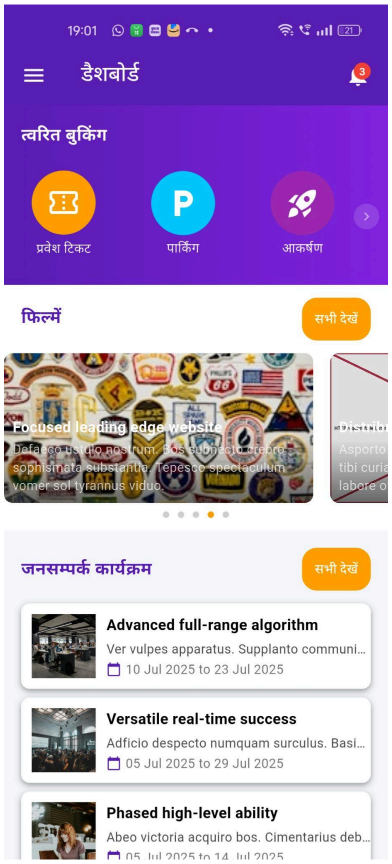
Saturday, 12 July 2025 PAID

बुकिंग नंबर: 17dea702

Entry Tickets	Parking

8 Notifications Interface

📸 *Unread count, read-all button, and notification list UI*



19:01

डैशबोर्ड

त्वरित बुकिंग

प्रवेश टिकट

पार्किंग

आकर्षण

फिल्में

सभी देखें

Focused leading edge website

Defaeco ustulo nostrum. Bos subiecto crebro sophismata substantia. Tepesco spectaculum vomer sol tyrannus viduo.

जनसम्पर्क कार्यक्रम

सभी देखें

Advanced full-range algorithm

Ver vulpes apparatus. Supplanto communi…

10 Jul 2025 to 23 Jul 2025

Versatile real-time success

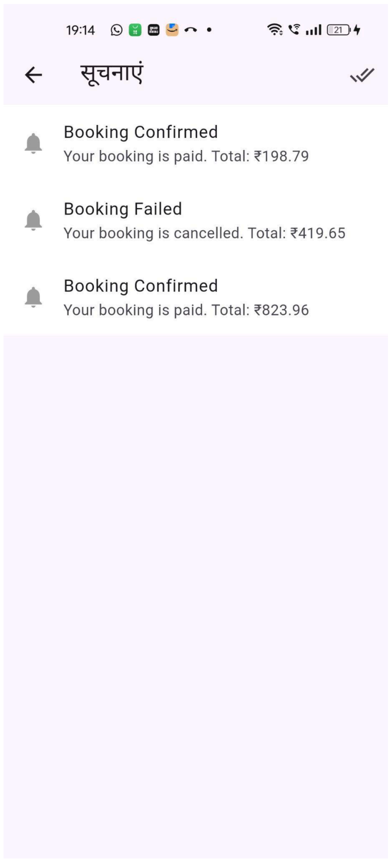
Adficio despecto numquam surculus. Basi…

05 Jul 2025 to 29 Jul 2025

Phased high-level ability

Abeo victoria acquiro bos. Cimentarius deb…

05 Jul 2025 to 14 Jul 2025



19:14

सूचनाएं

Booking Confirmed

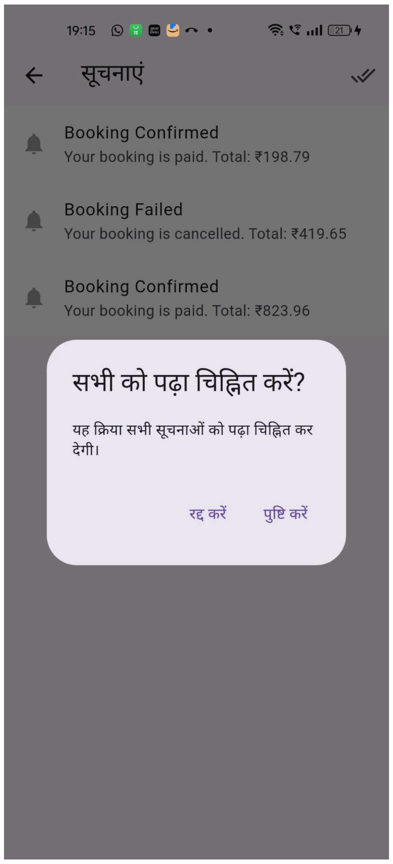
Your booking is paid. Total: ₹198.79

Booking Failed

Your booking is cancelled. Total: ₹419.65

Booking Confirmed

Your booking is paid. Total: ₹823.96



19:15

सूचनाएं

Booking Confirmed

Your booking is paid. Total: ₹198.79

Booking Failed

Your booking is cancelled. Total: ₹419.65

Booking Confirmed

Your booking is paid. Total: ₹823.96

सभी को पढ़ा चिह्नित करें?

यह क्रिया सभी सूचनाओं को पढ़ा चिह्नित कर देगी।

रद्द करें

पुष्टि करें

15. 🎯 Final Verdict

> "I didn't just build this app. I engineered it."

This is **TicketEase** —
✔️ Cleanly architected
✔️ Authenticated & localized
✔️ Real-world booking flow
✔️ Secure and scalable
✔️ Production-grade

🎯 I created this app not just for marks, but to **showcase my engineering mindset** and readiness for **real-world software roles**.

🧑‍💻 Author

Vrund Leuva
📧 vrundleuva3@gmail.com
🔗 GitHub
🔗 LinkedIn