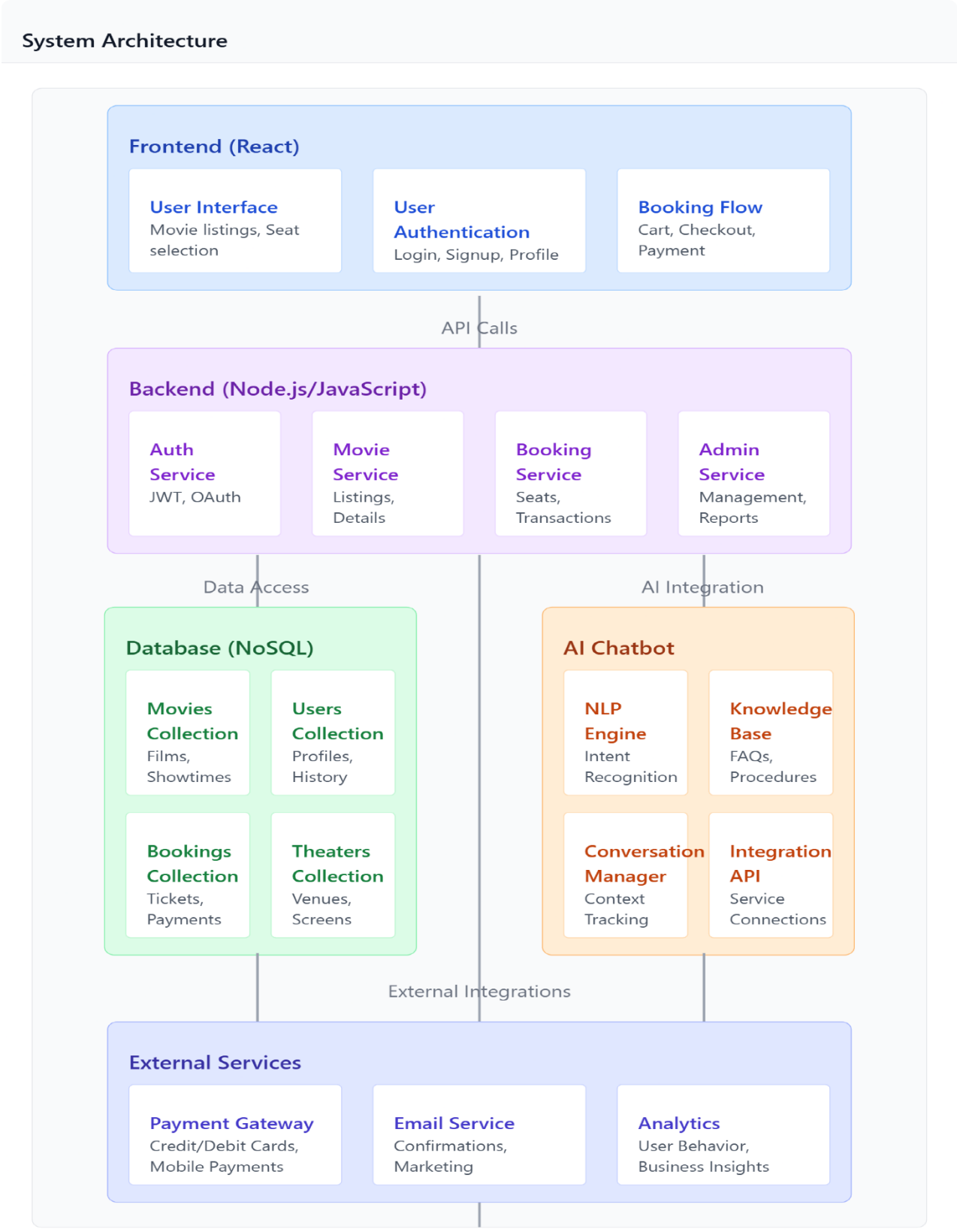
System Architecture Diagram



Flow Diagaram

User Flow Diagram

Authentication Flow

1. User Registration
- Enter name, email, password
- Validate input fields
- Create user account

→

2. User Login
- Enter email and password
- Validate credentials
- Generate JWT token

→

3. Profile Management
- View/edit personal details
- View booking history
- Manage payment methods

Booking Flow

1. Browse Movies
- View current movies
- Filter by genre, rating
- Search functionality

2. Select Movie & Showtime
- View movie details
- Select theater location
- Choose date and time

3. Select Seats
- View seat availability
- Select number of seats
- Choose seat locations

4. Payment & Confirmation
- Review booking details
- Select payment method
- Complete transaction
- Receive e-ticket

AI Chatbot Interaction

Assistance During Browsing
- Movie recommendations
- Answer movie questions
- Guide through search filters

Help With Booking Process
- Showtime availability
- Seat selection assistance
- Payment method guidance

Post-Booking Support
- E-ticket retrieval
- Cancel/modify booking
- Theater location/facilities

Admin Dashboard Flow

Admin Authentication

1. Admin Login

- Secure admin credentials
- Two-factor authentication
- Role-based access control

2. Access Dashboard

- Overview of system metrics
- Quick access to key functions
- Admin notifications center

Movie Management

1. Add New Movies

- Enter movie details
- Upload images/trailers
- Set release date
- Assign categories/tags

2. Schedule Showtimes

- Select movie and theater
- Set date and time
- Configure ticket pricing
- Manage recurring schedules

3. Manage Active Movies

- Edit movie information
- Update showtimes
- Remove expired listings
- Movie performance metrics

Booking & Theater Management

1. Monitor Bookings

- View all current bookings
- Filter by movie/showtime
- Handle booking modifications
- Process refunds if needed

2. Manage Theaters & Screens

- Add/edit theater locations
- Configure screen layouts
- Set seat categories/pricing
- Manage theater maintenance

Analytics & Reporting

1. Sales Reports

- Daily/weekly/monthly revenue
- Sales by movie/theater
- Payment method analytics
- Export financial data

2. Attendance Analytics

- Theater occupancy rates
- Peak time analysis
- Popular movie metrics
- Customer demographic data

3. User Behavior Insights

- Booking patterns
- User engagement metrics
- Chatbot interaction analysis
- Customer feedback reports

Database Schema

Database Schema (MongoDB)

Collections Overview

Users Collection

name:	String (required, trim)
email:	String (required, unique)
password:	String (required)
timestamps:	true

Movies Collection

title:	String (required)
description:	String (required)
posterUrl:	String (required)
backdropUrl:	String (required)
rating:	Number (required)
duration:	String (required)
language:	String (required)
genres:	[String] (required)
releaseDate:	String (required)
isNewRelease:	Boolean (default: false)
comingSoon:	Boolean (default: false)
availableCities:	[String] (required)

Theaters Collection

name:	String
location:	String
city:	String
screens:	Number

Showtimes Collection

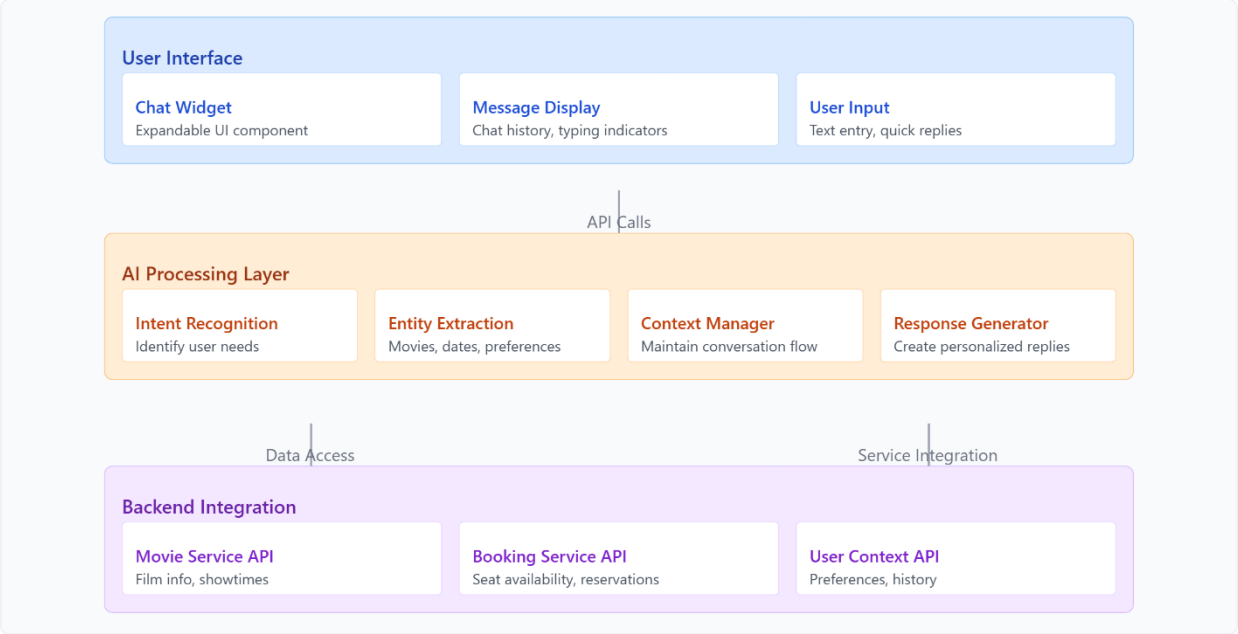
movieId:	ObjectId (ref: Movie)
theaterId:	ObjectId (ref: Theater)
date:	String (required)
time:	String (required)

Bookings Collection

bookingId:	String (required)
paymentId:	String (required)
userId:	ObjectId (ref: User)
movieTitle:	String (required)
showtime:	Object (date, time)
theater:	Object (name, location)
selectedSeats:	[String]
totalAmount:	Number
status:	String (default: 'Pending')
timestamps:	true

Chatbot Architecture

Chatbot Architecture



Chatbot Interaction Flow

1. **User Initiates Conversation**
   User opens the chat widget and sends an initial message or selects from quick options
2. **Intent Recognition**
   AI analyzes the message to determine user intent and extracts relevant entities
3. **Backend Data Retrieval**
   Chatbot queries relevant backend services based on the determined intent
4. **Response Generation**
   AI generates a personalized response based on the data and context