

FlightFinder: Final Project Report

1. Introduction

FlightFinder is a web-based flight booking application designed to simplify air travel. It offers a user-friendly interface to search, filter, and book flights efficiently. The application targets frequent flyers and casual travelers by providing a seamless digital experience with real-time flight information, personalized filters, and secure payment gateways.

2. User Scenario

John, a business professional, needs to book a flight to Paris. Using FlightFinder, he:

- Opens the app and inputs travel details (NYC to Paris, Apr 10-15, Business Class).
- Views flight options with price, airline, duration, and timings.
- Applies filters for direct flights and preferred airline.
- Selects a window seat with extra legroom from a seat map.
- Makes secure payment and receives an e-ticket and itinerary.

This scenario illustrates the app's efficiency and user-centric features.

3. Application Flow

User Flow:

- Register and log in.
- Search for destination and flights.
- Apply filters and select preferred flight.
- Choose seat and complete payment.
- View or cancel bookings.

Admin Flow:

- Manage all user bookings.
- Add new flights and services.
- Monitor user activity and system usage.

4. Technical Architecture

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The application follows a modular architecture with three core components:

Frontend (React.js):

- Handles user interface, flight search, booking, and seat selection.
- Communicates with backend via RESTful APIs.

Backend (Node.js + Express):

- Manages user authentication, flight data, and booking logic.
- Implements role-based access for users and admin.

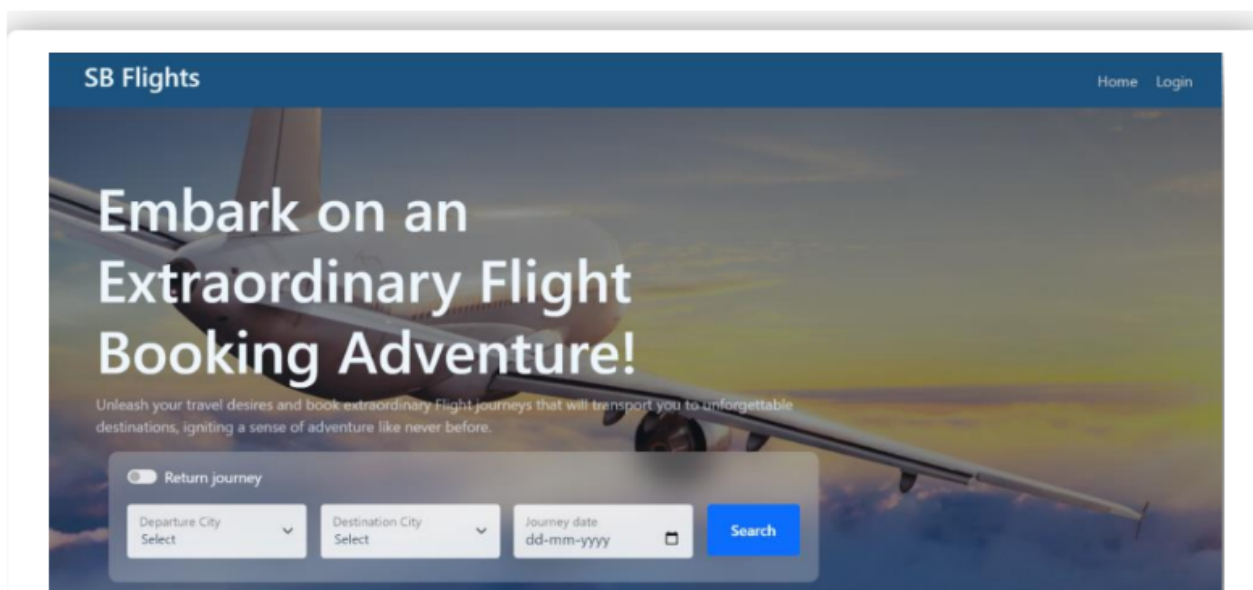
Database (MongoDB):

- Stores user data, flight details, and booking records.
- Enables efficient queries and data retrieval with Mongoose ODM.

5. Project Implementation (Screenshots)

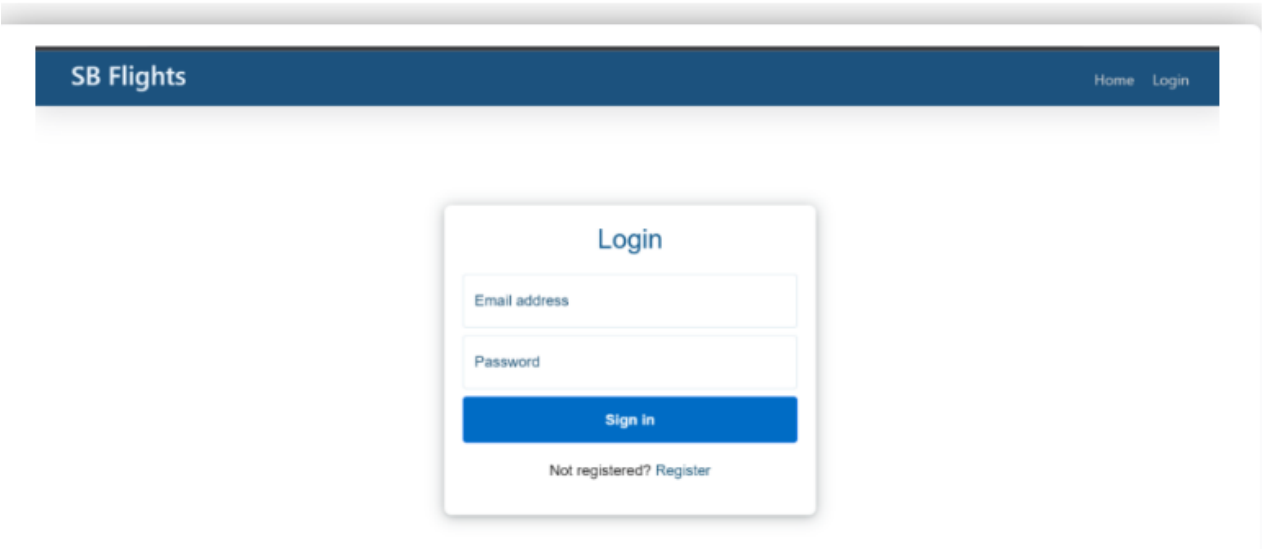
The following screenshots represent different components and pages of the FlightFinder web app:

- **Landing page UI**



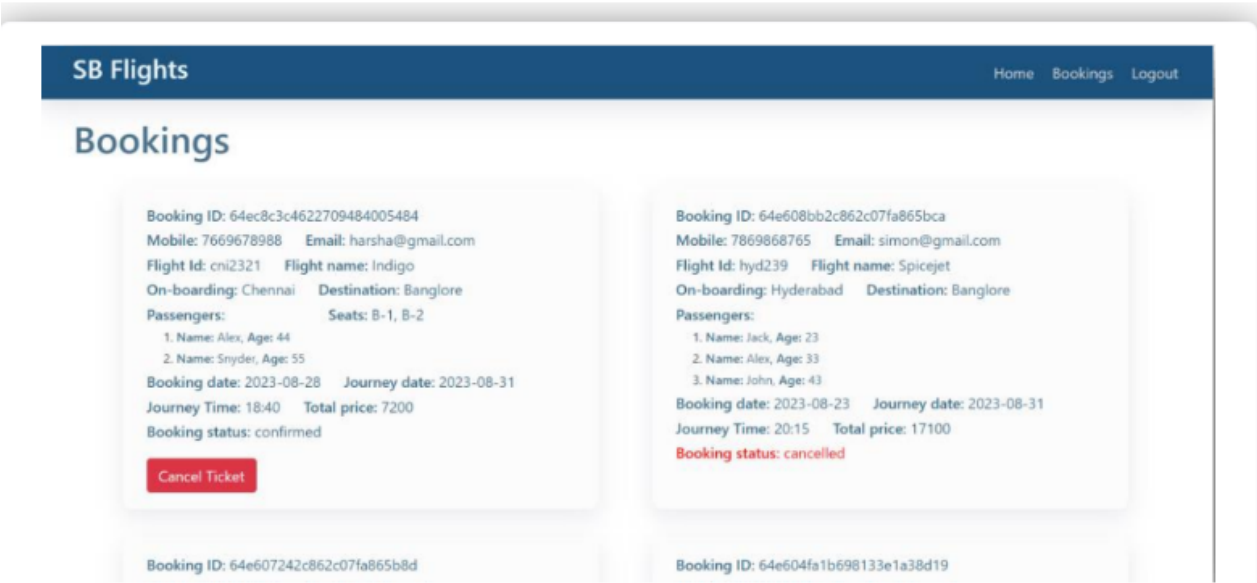
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- Authentication

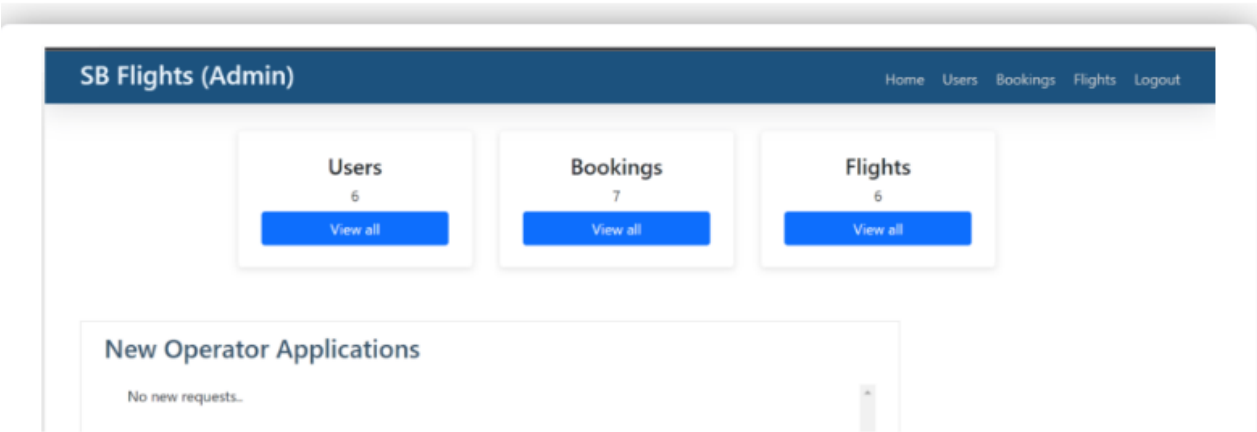


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- User bookings



- Admin Dashboard



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- All users

SB Flights (Admin)

HomeUsersBookingsFlightsLogout

All Users

UserId 64e5fcb298f1c5aa0a36c2a7

Username hola

Email hola@gmail.com

UserId 64e9d2e0f7964122dbe8d098

Username alex

Email alex@gmail.com

Flight Operators

Id 64e8ce302bb50798fe630779

Flight Name spicejet

Email spicejet@gmail.com

Id 64e8d11154e48a90d1c0f26b

Flight Name Indigo

Email indigo@gmail.com

Id 64e9d38e5d17bcb51a27b36a

Flight Name Air Vistara

Email vistara@gmail.com

- Flight Operator

SB Flights (Operator)

HomeBookingsFlightsAdd FlightLogout

Bookings

4

View all

Flights

2

View all

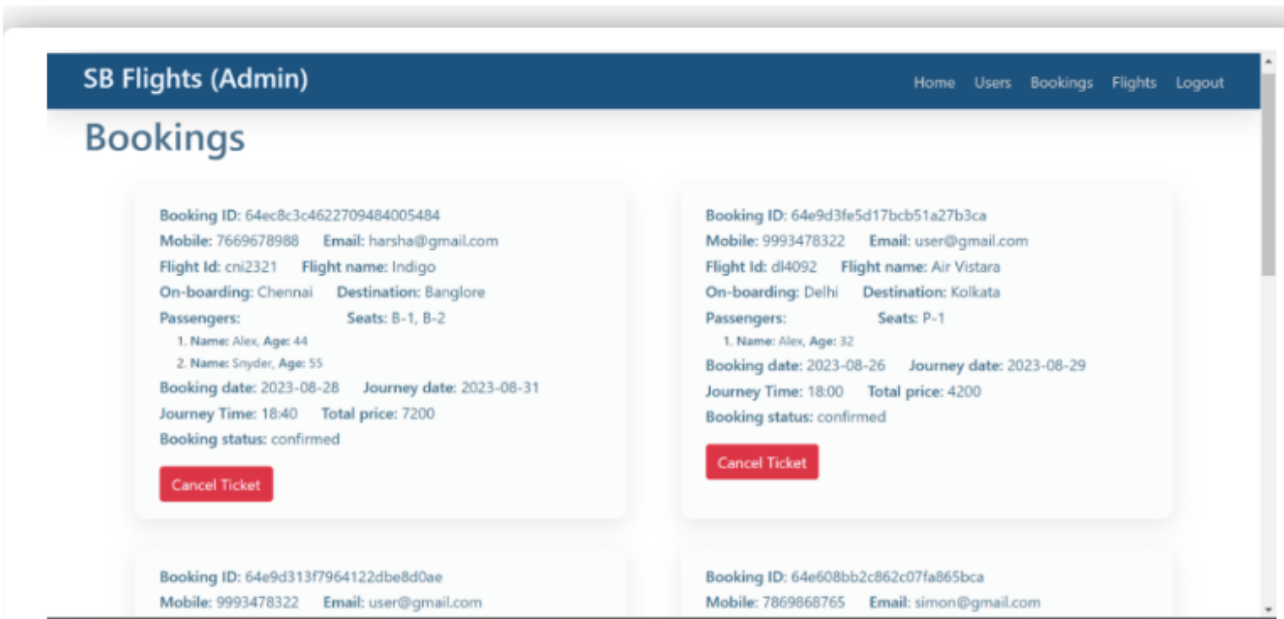
New Flight

(new route)

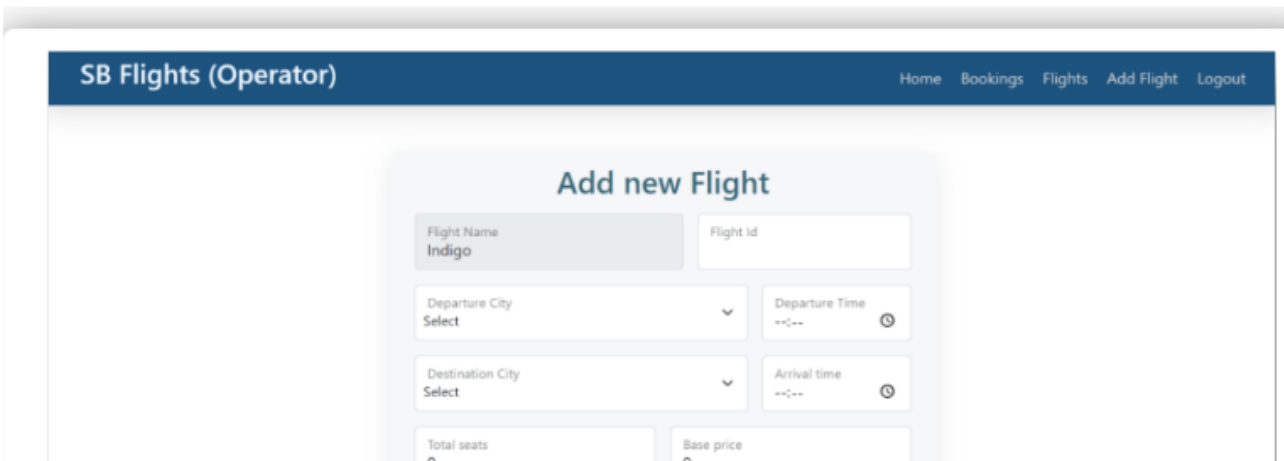
Add now

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- All Bookings



- New Flight



6. Conclusion

FlightFinder successfully enhances the flight booking experience with real-time flight data, smart filtering options, secure payments, and a responsive user interface. With its modular technical structure and admin capabilities, it ensures robust performance, scalability, and user satisfaction in air travel planning.