✈️ Flight Booking App – Full Stack Development with MERN

# 1. Introduction

## Project Title:

Flight Booking Web Application (MERN Stack)

## Team Members:

• Renukadevi – Full Stack Developer

# 2. Project Overview

## Purpose:

The goal of this project is to build a modern and user-friendly flight booking system that simulates real-world airline ticketing. Users can register, log in, search for flights, view available options, book or cancel tickets, and access their booking history.

## Features:

• User authentication with JWT  
• Search flights by source and destination  
• View flight listings with price, time, and duration  
• Booking confirmation and history tracking  
• Ticket cancellation functionality  
• Integrated chatbot for user assistance  
• Fully responsive design for desktop and mobile

# 3. Architecture

## Frontend:

Built using React.js, styled with TailwindCSS/Bootstrap. Axios is used for API communication.

## Backend:

Powered by Node.js and Express.js. Provides secure REST APIs and business logic.

## Database:

Uses MongoDB with Mongoose for schema modeling. Data is stored in MongoDB Atlas.

# 4. Setup Instructions

## Prerequisites:

• Node.js v14+  
• npm  
• MongoDB Atlas  
• Git

## Installation:

1. Clone the repo:  
 git clone https://github.com/Renukadevi18/flight-Booking-App-MERN.git  
2. Install frontend:  
 cd client && npm install  
3. Install backend:  
 cd ../server && npm install  
4. Configure environment variables in /server/.env

# 5. Folder Structure

Flight-Booking-App-MERN/  
├── client/  
│ ├── components/ – React UI components  
│ ├── pages/ – Pages like Home, Search, Book  
│ ├── services/ – Axios services  
├── server/  
│ ├── models/ – Mongoose schemas  
│ ├── controllers/ – Backend logic  
│ ├── routes/ – API endpoints  
│ └── server.js – Entry point

# 6. Running the Application

Frontend: cd client && npm start

Backend: cd server && npm run dev

# 7. API Documentation

• POST /api/users/register – Register user  
• POST /api/users/login – User login  
• GET /api/flights – Get flights  
• POST /api/bookings – Book a flight  
• GET /api/bookings – View bookings  
• DELETE /api/bookings/:id – Cancel booking

# 8. Authentication

JWT-based authentication. Passwords hashed with bcrypt. Tokens stored in localStorage and used to protect routes.

# 9. User Interface

Responsive, user-friendly interface built in React. Flight listings, booking forms, user dashboard, and chatbot.

# 10. Testing

Manual testing using Postman and browser tools. Sample users and flights used to test booking flow.

# 11. Screenshots or Demo

Demo video: Flight booking app (MERN) (1).mp4 is available in the root folder.

https://drive.google.com/file/d/1cIZvMXD5fmASG2-pXJ4I\_8ZWvCWLZitM/view?usp=drive\_link

# 12. Known Issues

• Seat map integration not available  
• No admin panel yet  
• No real payment gateway integration

# 13. Future Enhancements

• Stripe/Razorpay integration  
• Admin dashboard for flight management  
• Seat map with dynamic reservation  
• Email notifications  
• Mobile app using React Native