Flight Finder: Navigating Your Air Travel Options — Project Report

# Introduction

Flight Finder is a full-stack flight booking web application developed using the MERN stack. It allows users to search, book, and manage their flights with ease, while providing administrators with tools to manage flight schedules and bookings efficiently.

# Team Members

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# Project Description

This flight booking app offers a seamless experience for travelers. The app includes features such as flight search, seat selection, booking, and payment, all through a user-friendly interface.

# Scenario

Example: John, a business traveler, uses the app to book a flight from New York to Paris. He selects a business class seat, filters for direct flights, and pays securely through the app.

# Technical Architecture

The system is divided into three parts:  
- Frontend: React.js for user interaction.  
- Backend: Node.js and Express.js for APIs.  
- Database: MongoDB for storing flight, user, and booking data.

# Entity-Relationship Diagram Summary

* User: Can make multiple bookings and payments.
* Booking: Linked to a user and specific flight.
* Flight: Contains availability and flight data.
* Admin: Manages flights and bookings.

# Prerequisites

* Node.js and npm
* MongoDB (local or Atlas)
* Express.js
* React.js
* Mongoose for DB connectivity
* Git and GitHub
* IDE (VS Code, WebStorm, etc.)

# Running the Project

1. Clone the repository: https://github.com/reva239/SmartBridge.git
2. Install dependencies in both client and server folders using `npm install`
3. Start the server using `npm run dev` or `npm start`
4. Access the app at http://localhost:3000

# Project Structure

* Client: React.js frontend
* Server: Node.js + Express backend

# Application Flow

* Users: Register, search flights, book and pay, view/cancel bookings.
* Admin: Add/update flights, view/manage bookings and users.

# Development Phases

1. Project setup: Folder structure and library installation.
2. Backend: API routes, models, database configuration, authentication.
3. Database: Mongoose schemas and connections.
4. Frontend: Forms, booking modals, dashboard pages.
5. Testing and Implementation: UI validation and bug fixes.

# Conclusion

Flight Finder is a robust MERN-based application that simplifies air travel booking. It integrates essential features for both users and admins, delivering a secure, intuitive, and feature-rich platform.