Project Design Phase
Solution Architecture

Date	15 February 2026
Team ID	LTVIP2026TMIDS60082
Project Name	FlightFinder – Navigating Your Air Travel Options
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture bridges the gap between the business problem of complex and scattered flight booking systems and the technology solution provided by FlightFinder. It defines how different components of the system work together to deliver a secure, scalable, and user-friendly flight booking experience.

● **Find the best technical solution** to simplify flight search, comparison, and booking for travelers.

● **Describe the system structure and behavior** including frontend, backend, database, and external integrations for stakeholders.

● **Define key features and development phases** such as user registration, flight search, booking, payment integration, and booking management.

● **Provide technical specifications** that guide development, deployment, and maintenance of the FlightFinder platform.

Architecture Structure (3-Tier Architecture)

1 Presentation Layer (Frontend)

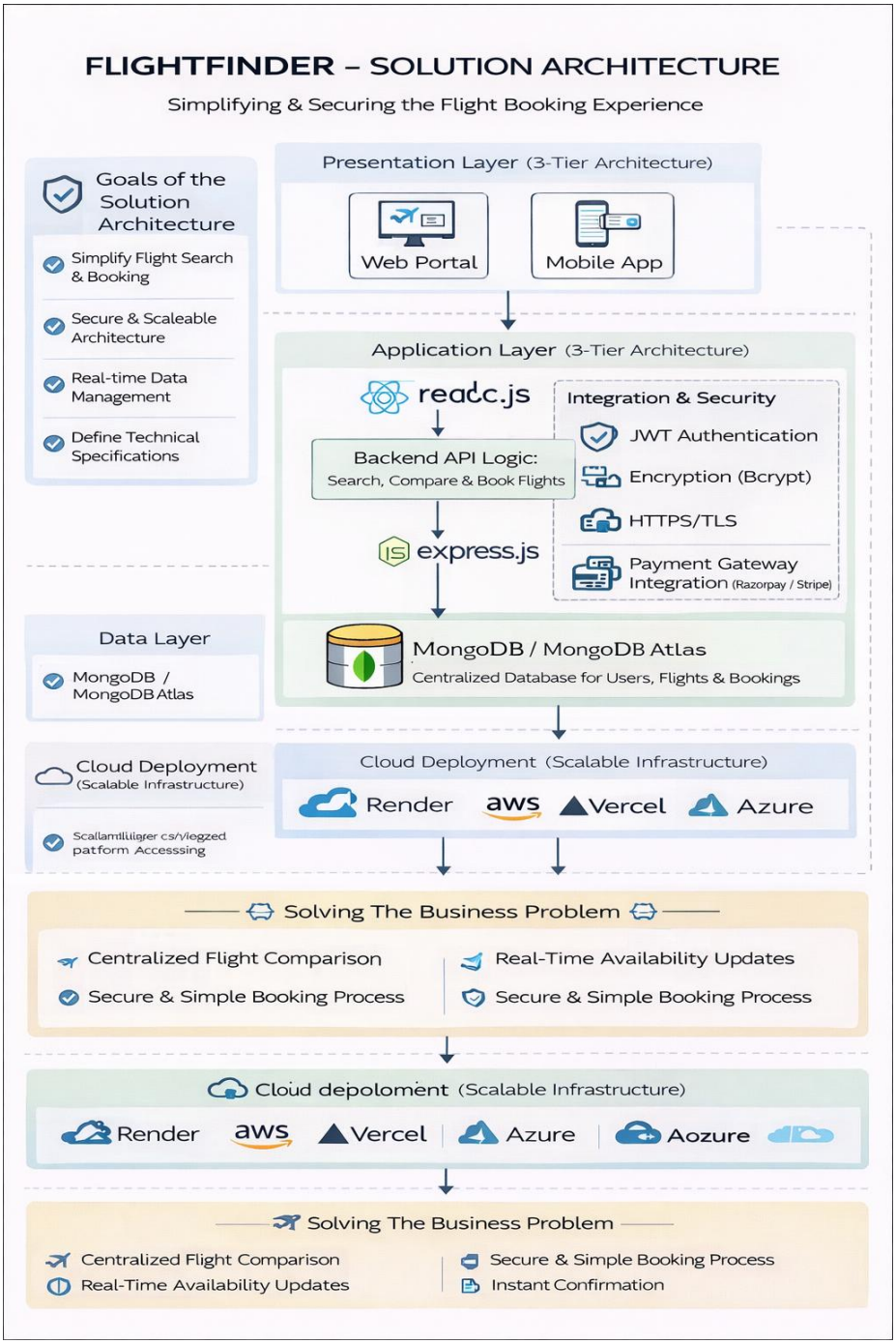
- Built using React.js
- Provides user interface for searching, comparing, and booking flights
- Handles user interaction and input validation

2 Application Layer (Backend)

- Built using Node.js and Express.js
- Processes business logic such as flight search, booking, and payment handling
- Communicates with database and external APIs

3 Data Layer (Database)

- MongoDB / MongoDB Atlas
- Stores user details, flight data, booking history, and transaction records


FLIGHTFINDER – SOLUTION ARCHITECTURE
Simplifying & Securing the Flight Booking Experience
Goals of the Solution Architecture
Simplify Flight Search & Booking
Secure & Scaleable Architecture
Real-time Data Management
Define Technical Specifications
Presentation Layer (3-Tier Architecture)
Web Portal
Mobile App
Application Layer (3-Tier Architecture)
readc.js
Backend API Logic:
Search, Compare & Book Flights
express.js
Integration & Security
JWT Authentication
Encryption (Bcrypt)
HTTPS/TLS
Payment Gateway Integration (Razorpay / Stripe)
Data Layer
MongoDB / MongoDB Atlas
MongoDB / MongoDB Atlas
Centralized Database for Users, Flights & Bookings
Cloud Deployment (Scalable Infrastructure)
Cloud Deployment (Scalable Infrastructure)
Render
aws
Vercel
Azure
Solving The Business Problem
Centralized Flight Comparison
Secure & Simple Booking Process
Real-Time Availability Updates
Secure & Simple Booking Process
Cloud depolomeńt (Scalable Infrastructure)
Render
aws
Vercel
Azure
Aozure
Solving The Business Problem
Centralized Flight Comparison
Real-Time Availability Updates
Secure & Simple Booking Process
Instant Confirmation