Project Design Phase

Solution Architecture

Component	Technology	Purpose
Frontend (Web & App)	ReactJS (Web), Flutter (Mobile)	User interface for searching, booking, login
Backend API Layer	Node.js or Flask	Business logic for user flows, booking, payments
Database	PostgreSQL / Firebase Firestore	Store user, flight, booking, and payment data
Payment Gateway	Razorpay / Stripe	Handle secure online transactions
Notification System	Twilio / SendGrid	SMS/email confirmation for bookings & updates
File Storage	AWS S3	Store PDF tickets and booking confirmations
Admin Dashboard	ReactJS + Chart.js	Flight management, analytics, reports

Cloud Infrastructure	AWS EC2 / Kubernetes	Scalable, secure, and monitored deployment platform

Team ID	LTVIP2025TMID57633
Project Title	Flight finder: navigating your air travel options

Solution Architecture Overview

Solution architecture defines how different components in the flight booking platform interact to deliver a seamless experience for users and admins. It maps business goals (ease of flight search, booking, notifications, payment, etc.) with technology components.

Goals of the Architecture

- Identify best-fit technologies for flight search, booking, and notifications
- Define behavior, integration, and deployment of each module
- Ensure scalability, reliability, and availability for end users and admins Enable fast delivery and easy maintenance via modular components

Components Overview

Architecture Features

- Microservices-based: Each service (user, flight, booking, payment) can be scaled independently.
- REST APIs: Ensure loose coupling between frontend and backend.
- Secure Transactions: HTTPS, JWT Auth, payment gateway integration.
- Real-time Notifications: Integrated with external APIs (Twilio/SendGrid).
- Cloud-hosted: Ensures high availability and global access.

Solution Architecture Diagram