

Project Design Phase

Solution Architecture

Date	25 June 2025
Team ID	LTVIP2025TMID59290
Project Name	FlightFinder: Navigating Your Air Travel Options
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a strategic approach that connects the Flight Finder business needs—streamlined flight booking, tracking, and user experience—with the most suitable and scalable technical implementation.

Goals of the Solution Architecture

1. Find the Best Tech Solution

Identify and implement a scalable, user-centric, and secure flight booking platform accessible via web and mobile.

2. Describe System Characteristics to Stakeholders

Clearly present the system's:

- User workflows (registration, booking, tracking)
- Component interactions (frontend, backend, databases, third-party APIs)
- Cloud services used (e.g., AWS, Firebase, or Supabase)
- Security and performance attributes

3. Define Features, Phases, and Requirements

- Core Features:
 - User registration and login (via form or social auth)
 - Flight search with filters
 - Booking and cancellation
 - Booking history and live flight tracking
- Phases:
 - MVP: Registration, login, search, booking
 - Phase 2: History, tracking, admin panel, notifications

4. Provide Technical Specifications

The solution is implemented using:

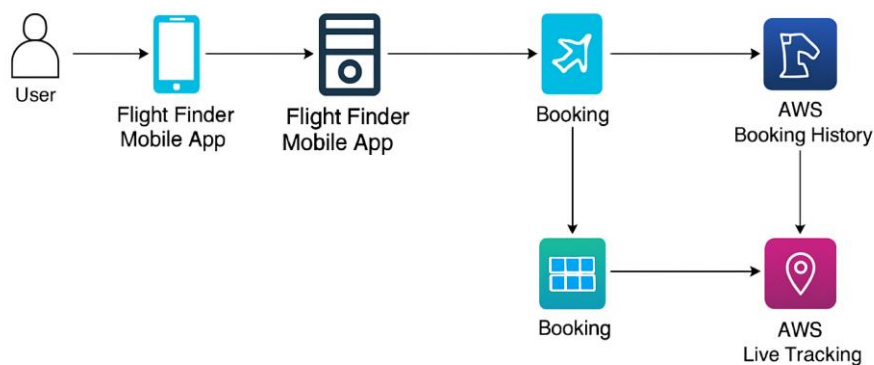
- Frontend: React/Next.js (for Web), React Native or Flutter (for Mobile)
- Backend: Node.js with Express.js or Next API routes
- Database: PostgreSQL (via Supabase or hosted DB)
- Cloud Services: AWS for file storage, email, analytics, and tracking

- Authentication: Supabase Auth or Firebase Auth with OTP/Social Login
- DevOps: CI/CD pipeline with GitHub Actions & deployment via Vercel

Architecture Blueprint Highlights

- **User Journey:**
 - User interacts via web/mobile UI
 - Requests sent to backend APIs
 - Flight data fetched from database or third-party APIs (Skyscanner, Amadeus, etc.)
 - Booking info stored securely
 - Admin dashboards for flight management
 - Live status fetched and displayed in real-time
- **Security & Compliance:**
 - End-to-end encryption
 - Role-based access control
 - Secure data storage and logging
 - Compliance with data privacy laws (GDPR)

Flight Finder – Solution Architecture Diagram:



FLIGHT FINDER – SOLUTION ARCHITECTURE

Figure 1: Architecture and data flow of the voice patient diary sample application

Reference: <https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/>