

Project Design phase

Problem Solution Fit

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Team Id	LTVIP2025TMID29760
Project Name	AirLine Management System
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❖ Problem-Solution Fit

Problem Statement:

Traditional airline booking and management systems often lead to a poor user experience due to inefficient flight search, booking delays, manual check-in processes, lack of transparency in pricing, and weak customer support. Airlines also struggle with managing internal operations such as scheduling, crew assignment, and real-time updates.

❖ SOLUTION REQUIRED

Problem	Solution
Users face difficulty finding and comparing flights.	Advanced flight search with filtering by date, price, airline, duration, and layovers.
Tedious manual booking and check-in process.	Seamless digital booking and online check-in system.
Lack of real-time updates on flight delays or changes.	Live flight tracking and instant notifications to users.
No centralized place for managing customer data and bookings.	Centralized dashboard for users to manage bookings, cancellations, and history.
Airline staff scheduling and resource management is error-prone.	Backend system for staff scheduling, aircraft assignments, and automated alerts.
Poor customer support and complaint resolution.	In-app chat support and AI-based query assistance system.

Proposed Solution: Airline Management System (AMS)

To address the inefficiencies and fragmented experience faced by passengers, staff, and airline management, we propose developing a comprehensive Airline Management System (AMS) that centralizes and automates key airline operations. This solution will enhance customer satisfaction, streamline staff operations, and optimize backend processes through a modern, scalable, and secure platform.

Key Features of the Proposed Solution:

1. Flight Booking Module
2. User Management
3. Flight Management Dashboard
4. Check-In & Boarding
5. Payment Integration
6. Customer Support & Notifications
7. Analytics & Reports

Solution Architecture: Airline Management System

Solution architecture is a critical process that connects business requirements with technical implementation. In the context of the Airline Management System, it ensures the design of a scalable, efficient, and user-friendly platform for flight booking, passenger management, and administrative tasks.

Its goals in this project are to:

- **Find the best technical solution** to handle airline operations like user login, flight search, booking, payments, and cancellations.
- **Describe the structure, modules, behavior, and system interactions** to help stakeholders (students, mentors, admins) understand how the system
- **Define the core features and phases** such as user authentication, flight management, booking flow, admin operations, and report generation.
- **Provide architectural specifications** for how components like the frontend, backend, and database interact, ensuring smooth system development and delivery.

SOLUTION ARCHITECTURE

