

Airline Reservation System: Project Proposal and Requirements Document

1. Project Idea

The **Airline Reservation System** is a web-based application aimed at providing a seamless and efficient experience for passengers booking flights and for airline administrators managing schedules and bookings. The system will allow passengers to search for available flights, book tickets, make payments, and manage their bookings, while enabling airline staff to update flight schedules, manage passenger data, and generate reports.

2. Problem Statement

Current airline reservation systems can be cumbersome for both users and administrators, leading to inefficiencies such as:

- Difficulty in searching and comparing flight options.
- Manual processes for booking, payment, and cancellations.
- Lack of a central platform for managing flight schedules, passenger data, and payment records.

The **Airline Reservation System** addresses these issues by offering an intuitive, digital platform for managing both passenger bookings and administrative operations.

3. User Personas

Passenger Persona

- **Name:** Jane Smith
- **Age:** 30 years old
- **Occupation:** Frequent traveler
- **Goals:**
 - Easily search for flights and book tickets.
 - Manage and modify bookings quickly.
 - Receive timely notifications about flight changes or cancellations.
- **Challenges:**
 - Wants to avoid long wait times and slow booking processes.
 - Needs a simple, reliable system for managing travel.

Admin Persona

- **Name:** John Doe
 - **Age:** 45 years old
 - **Occupation:** Airline Operations Manager
 - **Goals:**
 - Quickly update flight schedules and manage available seats.
 - Monitor passenger bookings and generate operational reports.
 - **Challenges:**
 - Struggles with outdated systems that require manual interventions.
 - Needs more efficient tools to handle daily operations.
-

4. Functional Requirements

Passenger Features:

1. **User Registration and Login:**
 - Passengers should be able to register and log in to the system securely.
2. **Flight Search and Filter:**
 - Passengers should be able to search for available flights based on destination, date, and other filters (e.g., price, duration).
3. **Booking and Seat Selection:**
 - Passengers should be able to select flights, choose seats, and confirm bookings.
4. **Booking Management:**
 - Passengers should be able to view, modify, or cancel their bookings.
5. **Notifications:**
 - The system should send notifications (via email/SMS) for booking confirmations, flight updates, and cancellations.

Admin Features:

1. **Flight Schedule Management:**
 - Admins should be able to add, edit, and delete flight schedules (e.g., departure times, destination, seat availability).
 2. **Booking and Passenger Management:**
 - Admins should be able to view and manage booking details and passenger information.
 3. **Reporting:**
 - Admins should be able to generate reports, such as booking trends, cancellations, and passenger statistics.
-

5. Non-Functional Requirements

1. **Performance:**
 - The system should handle up to **500 concurrent users** and provide a response time of **under 2 seconds** for all key interactions (e.g., search, booking).
 2. **Security:**
 - The system should ensure secure authentication and encryption of sensitive user data, such as passwords and payment information.
 3. **Usability:**
 - The system should be intuitive and user-friendly, with an interface that is easy to navigate for both passengers and admins.
 4. **Scalability:**
 - The system should be designed to scale, supporting increased traffic and additional features (e.g., loyalty programs, mobile integration).
 5. **Reliability:**
 - The system should have **99.9% uptime**, excluding planned maintenance periods.
 6. **Accessibility:**
 - The system should comply with accessibility standards, ensuring that users with disabilities can easily navigate and interact with the platform.
-

6. Deliverables

1. **Requirements Document:**
 - The formal requirements for both functional and non-functional aspects of the system.
 2. **System Design Documentation:**
 - Architecture diagrams, database schema, and wireframes representing the layout of the system and user flows.
 3. **Minimum Viable Product (MVP):**
 - A working prototype with essential features such as flight search, booking, payment processing, and user management.
 4. **Agile Artifacts:**
 - Product backlog, sprint planning documents, and task breakdown for the first 2-3 sprints.
 - Sprint retrospectives and burndown charts.
-

This document outlines the necessary aspects for the development of the **Airline Reservation System**. The next steps include detailed design, implementation, and testing based on these requirements.