Live Project 1 Part 1

Business Case Document –

1. Why is this project initiated?

The Airline System Application project is initiated to modernize and automate the process of flight bookings and airline operations. The primary goal is to improve customer convenience, streamline operations, and enhance the user experience by providing real-time updates, seamless payment options, and self-service capabilities.
This project aligns with the organization's strategic objectives to increase customer satisfaction, reduce operational costs, and remain competitive in the market by adopting cutting-edge technology.

2. What are the current problems?

- **Manual Processes**: Flight bookings, cancellations, and updates are handled manually, leading to inefficiencies and delays.
- **Limited Accessibility**: Customers face difficulty in accessing flight schedules, seat availability, and real-time updates.
- **Poor Customer Experience**: Lack of an integrated system for payments, refunds, and rescheduling negatively impacts customer satisfaction.
- **High Operational Costs**: Managing operations manually or through disparate systems increases costs and reduces productivity.
- **Inconsistent Data Management**: Customer and booking data is scattered, leading to inaccuracies and poor decision-making.

3. With this project, how many problems could be solved?

The Airline System Application addresses the following problems:

- Automates the booking, cancellation, and rescheduling processes, reducing delays.
- Provides customers with real-time access to flight schedules, seat availability, and flight status.
- Enhances the customer experience with streamlined payment options, refunds, and rescheduling processes.
- Reduces operational costs by integrating multiple functionalities into a single system.
- Centralizes data management for accurate and reliable insights to support decision-making.

4. What are the resources required?

Human Resources:

- Project Manager
- Business Analyst
- Developers
- UI/UX Designer
- Database Administrator
- Network Admin
- Testers

Technological Resources:

- Web and mobile application development tools
- Cloud servers for hosting the application
- Security protocols to ensure data privacy and compliance
- Databases to store customer, flight, and booking information

Financial Resources:

- Budget of **2 Crores INR**

Time Resources:

- **18 months** to complete the project

5. How much organizational change is required to adopt this technology?

Moderate organizational change is required, including:

- Training staff on the new system to handle customer inquiries, booking processes, and administrative tasks.
- Transitioning from legacy systems to the new Airline System Application.
- Redefining internal workflows to leverage automation and reduce manual interventions.
- Collaborating with stakeholders (e.g., airport authorities, airlines) to align operational practices.

6. Time frame to recover ROI?

The estimated time frame to recover the return on investment (ROI) is **18-24 months**, based on the following:

- Increased customer bookings due to enhanced usability and experience.
- Reduced operational costs from automation and centralization.
- Additional revenue streams through baggage management, frequent flyer programs, and upselling services.

7. How to identify Stakeholders?

The stakeholders for this project are categorized as follows:

a. Project Stakeholders:

- Project Manager
- Developers
- Testers
- Database and Network Administrators

b. Business Stakeholders:

- Airline Company Management
- Customer Support Teams
- Marketing Team

c. Third-Party Stakeholders:

- Customers (Travelers)
- Travel Agents and Agencies
- Payment Gateway Providers
- Airport Authorities
- Regulatory Authorities

Business Analyst (BA) Strategy Document

Steps to Complete a Project –

1.Initiation and Requirement Understanding:
- Understand the project's objectives, scope, and constraints.
- Conduct stakeholder interviews to gather high-level requirements.

2.Requirement Elicitation and Analysis:
- Use elicitation techniques to gather detailed requirements.
- Prioritize and validate requirements with stakeholders.

3.Documentation and Review:
- Prepare BRD (Business Requirements Document) and FRS (Functional Requirement Specification).
- Circulate documents for stakeholder review and feedback.

4.Stakeholder Engagement:
- Conduct stakeholder analysis to identify roles, responsibilities, and influence.

- Establish a RACI/ILS matrix for accountability.

5.Sign-Off Process:

- Present final documents to stakeholders for sign-off.
- Implement a formal approval process for documentation.

6.UAT and Change Management:

- Manage User Acceptance Testing (UAT) and document feedback.
- Address change requests efficiently using a change control board.

7.Project Closure:

- Update project status and progress.
- Obtain sign-off from stakeholders and clients on UAT and project acceptance forms.

1. Elicitation Techniques Used

- **Interviews**: Conducted one-on-one discussions with stakeholders (e.g., Airline Administrators, Customer Support, and IT teams) to gather detailed requirements.
- **Document Analysis**: Reviewed existing airline operations documentation, customer feedback records, and legacy system reports to identify gaps and pain points.
- **Questionnaires**: Distributed surveys to customers and travel agents to collect data on preferred features, usability issues, and additional requirements.
- **Workshops**: Facilitated group workshops with cross-functional teams to brainstorm solutions and prioritize features.

2. Stakeholder Analysis (RACI/ILS)

Activity	Project Manager	Developers	UI/UX Designer	Database Administrator	Network Admin	Airline Management	Support Teams	Customers
Project Planning & Scope Definition	A	C	C	C	C	I	I	I
System Design	A	R	R	C	C	I	I	I
Development	I	R	C	R	R	I	I	I
System Integration	C	R	C	R	R	I	I	I

Testing and Quality Assurance	C	C	C	C	C	I	R	I
Deployment & Release Management	A	R	C	R	R	I	I	I
Payment Gateway Integration	C	R	C	C	C	I	I	I
Real-Time Flight Status Updates	C	R	C	C	C	I	I	R
Customer Account Management	C	R	C	R	C	I	R	I
Reporting & Analytics	C	C	C	C	C	A	I	I

3. Documents to Write

- Business Case Document
- Functional Specification Document
- System Requirement Specification
- Requirements Traceability Matrix (RTM)
- Meeting Minutes (MOM)
- Use Case Document
- Test Cases for UAT

4. Process to Follow to Sign Off on Documents

1. Present the draft document to stakeholders in a review meeting.
2. Incorporate feedback from all stakeholders.
3. Obtain verbal or email confirmation from key stakeholders that the document meets their expectations.
4. Submit the final version for formal approval, with signatures from stakeholders.

5. How to Take Approvals from the Client

- Schedule regular review meetings to walk through the deliverables.
- Share finalized documents via email or a collaboration platform (e.g., SharePoint, Jira).
- Collect formal approvals through email acknowledgments or e-signature tools.

6. Communication Channels to Establish and Implement

- Tools like Slack, Microsoft Teams, or emails for day-to-day team communication.
- Weekly stand-up meetings to discuss progress
- Weekly progress reports to the committee.
- Monthly review meetings with the client for milestone updates.

7. How to Handle Change Requests

1. Document the change request in a formal Change Request Form.
2. Assess the impact of the change on scope, time, and budget.
3. Present the impact analysis to stakeholders for decision-making.
4. If approved, update the project plan and inform all stakeholders.
5. Ensure traceability by updating the RTM with the change.

8. How to Update the Progress of the Project to the Stakeholders

- Bi-weekly progress reports via email.
- Monthly dashboards showcasing key metrics like milestones completed, pending tasks, and risks.
- Regular status meetings to discuss updates, risks, and mitigation plans.

9. How to Take Sign-Off on the UAT

- Organize a UAT (User Acceptance Testing) phase with test scenarios and cases shared in advance.
- Guide stakeholders through the testing process and collect their feedback.
- Resolve all critical issues raised during UAT.
- Obtain formal acceptance and sign-off using the Client Project Acceptance Form**.**

Document 3- Functional Specifications

Field	**Details**
Project Name	FlyEase Airline Reservation System
Customer Name	FlyEase Airlines
Project Version	1.0
Project Sponsor	John Doe
Project Manager	Jane Smith
Project Initiation Date	January 2, 2025

Functional Requirement specifications:

Req ID	Req Name	Req Description	Priority
FR0001	Login	User should be able to log in to the application using their unique credentials.	10
FR0002	User Registration	New users should be able to register by providing personal details and ID documents.	10
FR0003	Flight Search	User should be able to search for flights by source, destination, dates, and class.	10
FR0004	Flight Selection	User should be able to select a flight from the available options based on search.	10
FR0005	Payment Gateway Integration	User should be able to pay for their flight via multiple payment options (cards, UPI, e-wallets).	10
FR0006	Booking Confirmation	The system should generate a ticket with a unique PNR upon successful booking.	10
FR0007	Booking History	User should be able to view their past bookings and statuses.	8
FR0008	Flight Status Updates	The system should send real-time updates about flight delays, cancellations, and gate changes.	9
FR0009	Seat Preference Selection	User should be able to select their preferred seat while booking the flight.	8
FR0010	Customer Account Management	User should be able to update their personal details, cancel or reschedule bookings, and manage refunds.	10
FR0011	Cancellation/Rescheduling	User should be able to cancel or reschedule their bookings, with automatic updates.	8
FR0012	Baggage Management	User should be able to pre-book extra baggage and track baggage status.	7
FR0013	Frequent Flyer Program	Registered users should be able to earn and redeem points for future bookings.	6
FR0014	Real-Time Flight Tracking	Users should be able to track the live status of flights via PNR or flight number.	9
FR0015	Multi-Language Support	The application should support multiple languages for customer convenience.	7
FR0016	Customer Support	A chat and query management system should be available for user assistance.	9
FR0017	Admin Access to Customer Information	Admin should have access to customer profiles for verification and ticketing.	9

FR0018	Admin Flight Management	Admin should be able to add, update, or delete flight schedules and routes.	10
FR0019	Admin Report Generation	Admin should be able to generate reports on flight occupancy, ticket sales, and revenue.	8
FR0020	Admin Staff Management	Admin should be able to manage airline staff accounts for customer service operations.	7

Document 4 - Requirement Traceability Matrix

Req ID	Req Name	Req Des	Design	T1 (	D2	T2	UAT
FR0001	Login	User must be able to login to access the application.	Yes	Pending	Yes	Yes	Yes
FR0002	User Registration	New users should be able to register by providing personal details and ID documents.	Yes	Pending	No	Pending	No
FR0003	Flight Search	User should be able to search for flights by source, destination, dates, and class.	Yes	Yes	Pending	Pending	Yes
FR0004	Flight Selection	User should be able to select a flight from the available options based on search.	Yes	Yes	Yes	Pending	Yes
FR0005	Payment Gateway Integration	User should be able to pay for their	Yes	Yes	Yes	Pending	Yes

		flight via multiple payment options (cards, UPI, e-wallets).					
FR0006	Booking Confirmation	The system should generate a ticket with a unique PNR upon successful booking.	Yes	Yes	Yes	Yes	Yes
FR0007	Booking History	User should be able to view their past bookings and statuses.	Yes	Pending	Pending	Pending	No
FR0008	Flight Status Updates	The system should send real-time updates about flight delays, cancellations, and gate changes.	Yes	No	Pending	No	Pending
FR0009	Seat Preference Selection	User should be able to select their preferred seat while booking the flight.	Pending	Pending	Pending	Pending	Pending
FR0010	Customer Account Management	User should be able to update their personal details, cancel or reschedule	Yes	Yes	Yes	Yes	Yes

		bookings, and manage refunds.					
FR0011	Cancellation/Rescheduling	User should be able to cancel or reschedule their bookings, with automatic updates.	Yes	Yes	Yes	Yes	Yes
FR0012	Baggage Management	User should be able to pre-book extra baggage and track baggage status.	Pending	Pending	Pending	Pending	Pending
FR0013	Frequent Flyer Program	Registered users should be able to earn and redeem points for future bookings.	No	Pending	Pending	Pending	No
FR0014	Real-Time Flight Tracking	Users should be able to track the live status of flights via PNR or flight number.	Yes	Yes	Yes	Yes	Yes
FR0015	Multi-Language Support	The application should support multiple languages for customer convenience.	Pending	Pending	No	Pending	Pending

FR0016	Customer Support	A chat and query management system should be available for user assistance.	Yes	No	Pending	Pending	No
FR0017	Admin Access to Customer Information	Admin should have access to customer profiles for verification and ticketing.	Yes	Yes	Yes	Pending	Yes
FR0018	Admin Flight Management	Admin should be able to add, update, or delete flight schedules and routes.	Yes	Yes	Pending	Pending	Pending
FR0019	Admin Report Generation	Admin should be able to generate reports on flight occupancy, ticket sales, and revenue.	Yes	Pending	Pending	Pending	Pending
FR0020	Admin Staff Management	Admin should be able to manage airline staff accounts for customer service operations.	Yes	Pending	Pending	No	No

Document 5 – BRD

FlyEase Airline Reservation System

Version 0.3

Author – Janhavi Karia

Contents

1. Document Revisions

Date	Version Number	Document Changes
02/01/2024	0.1	Initial Draft
05/01/2024	0.2	Added Functional Requirements for Flight Search and Payment Gateway
10/01/2024	0.3	Updated with Stakeholder Input and Design Requirements

2.Approvals

Role	Name	Title	Signature	Date
Project Sponsor	John Doe	Chief Operating Officer		02/01/2024
Business Owner	Sarah Smith	Head of Operations		02/01/2024
Project Manager	Michael Brown	Project Manager		02/01/2024
System Architect	Emily Davis	System Architect		02/01/2024
Development Lead	Alex Johnson	Lead Developer		02/01/2024
User Experience Lead	Rachel Green	UX Lead		02/01/2024
Quality Lead	Liam White	QA Lead		02/01/2024

3. RACI Chart for This Document

- **(*)Authorize** - Has ultimate signing authority for any changes to the document.
- **(R)Responsible** - Responsible for creating this document.
- **Accountable** - Accountable for accuracy of this document (for example, the project manager)
- **(S) Supports** - Provides supporting services in the production of this document
- **(C) Consulted -** Provides input (such as an interviewee).
- **(I) Informed** - Must be informed of any changes.

Name	Position	*	R	A	S	C	I
Jhanvi [BA]	Business Analyst		✓	✓			✓
John Doe	COO	✓				✓	✓
Sarah Smith	Head of Operations			✓	✓		✓
Michael Brown	Project Manager		✓	✓	✓	✓	✓
Emily Davis	System Architect				✓	✓	✓
Alex Johnson	Lead Developer				✓	✓	✓
Rachel Green	UX Lead				✓	✓	✓

Liam White	QA Lead				✓	✓	✓

4. Introduction

4.1. Business Goals

The **FlyEase Airline Reservation System** provides a seamless, user-friendly interface for customers to book flights, check availability, and receive real-time updates. The system aims to enhance the customer experience by providing easy access to flight schedules, seat availability, and booking details. It also integrates various payment options to allow customers to pay using credit cards, debit cards, or online payments, enabling greater flexibility for customers and making the process more efficient and convenient.

4.2. Business Objectives

To achieve the business goals, the following functionalities are incorporated into the system:

- **Customer Registration**: New customers will register in the system with personal details, generating unique usernames and passwords for booking flights.
- **Real-time Flight Information**: Customers can view available flights, schedules, seat availability, and real-time updates.
- **Booking and Reservations**: Customers can select and book flights based on their preferences.
- **Payment Methods**: Multiple payment options are available, such as credit card, debit card, and online payments.
- **Booking Updates**: Customers can update or cancel their flight bookings directly through the system.
- **Administrative Control**: The system allows the admin to modify flight schedules, add or remove flights, and manage reservations.

4.3. Business Rules

- **Valid Staff Authorization**: Only authorized staff can modify flight reservations or assist customers at the counter.
- **Admin Rights**: Only the admin can add, delete, or modify flight schedules and availability.
- **Customer Rights**: Existing customers can modify or cancel their reservations.
- **Security Compliance**: The airline must comply with all regulations set forth by aviation authorities.

4.4. Background

In the past, customers have had to visit physical offices or contact agents for flight bookings. The manual process caused delays, errors, and inefficiencies. The FlyEase Airline Reservation System will streamline the booking process, provide real-time updates on flight availability, and allow customers to book and manage flights online. This will eliminate the need for manual interventions, reduce errors, and provide a more satisfying customer experience. Customers can also choose from multiple payment options, making it easier for them to complete transactions.

4.5. Project Objective

- The system will capture customer details, generate unique credentials for them, and allow them to make bookings.
- It will automate flight booking and cancellations, eliminating manual processes.
- The system will allow customers to select flights, view schedules, and complete reservations.
- Simplifies the payment process with options for credit cards, debit cards, or online payments.
- Customers will have the ability to update personal details and view or cancel bookings.
- The system allows the administrator to manage flight schedules and booking details.
- The project aims to save time for customers, enhance operational efficiency, and reduce manual workload.

4.6. Project Scope

4.6.1. In Scope Functionality

- **Customer Registration**: Captures personal details and generates unique login credentials for new customers.
- **Flight Booking**: Customers can book flights by selecting from available options.
- **Payment Options**: Multiple payment methods like cash, credit cards, debit cards, and online payment systems.
- **Flight Schedule Transparency**: Provides detailed flight schedules, costs, and availability for customers to make informed decisions.
- **Reservation Management**: Customers can update personal details, view bookings, and cancel reservations.
- **Admin Control**: Admins can add, delete, or modify flight schedules and manage reservations.
- **Customer History**: The system will retain past reservation data for future transactions.

4.6.2. Out of Scope Functionality

- **Marketing Automation**: Generating email or SMS alerts for new flight schedules and promotions for existing customers.
- **Frequent Flyer Program**: The system will not manage frequent flyer miles or loyalty programs at this stage.

5. Assumptions

- The application will be secured with strong encryption to protect customer data.
- The system will require 24/7 internet access to ensure continuous functionality.
- The system will support access from both desktop and mobile devices.
- The system will support multiple users accessing it simultaneously without performance degradation.

6. Constraints

- The database will need to support a large volume of customer data, flight details, and reservation information.
- The system must comply with aviation and data protection regulations in the regions it operates.

7. Risks

Technological Risks

- **No advanced technologies** are used in this project, and the system is built on standard web technologies (e.g., HTML, CSS, JavaScript, SQL), ensuring minimal technological risk.
- The system's functionality relies on common internet protocols and a standard relational database, reducing the likelihood of major technological challenges.

Skills Risks

- There are no significant skills risks associated with this project as long as users are familiar with basic computing skills. Users, especially administrators, should be comfortable with managing flight schedules and reservations within the system interface.

Political Risks

- **Regulatory Compliance**: The system must comply with aviation regulations and ensure appropriate licensing and approvals from aviation authorities.

- **Changing Political Conditions**: Changes in the regulations regarding international or domestic air travel could affect flight availability, pricing, and scheduling. This would need to be reflected in the system's flight schedules and availability.

Business Risks

- **Project Cancellation**: If the project were to be canceled prematurely, the company would incur losses in terms of cost and time spent during development. Additionally, it would hinder the airline's ability to provide an efficient, digital booking experience to customers, possibly impacting customer satisfaction.

Requirements Risks

- **Accurate Flight Information**: The system must provide accurate flight schedules, pricing, and availability in real-time to ensure customers can make informed decisions when booking flights.
- **Payment System Accuracy**: The system must securely handle multiple payment methods (credit card, debit card, online payment) and prevent errors or fraudulent transactions.
- **System Scalability**: The system should be able to handle increasing traffic and large numbers of concurrent users as the airline expands its customer base.

Other Risks

- **Data Security**: Protecting sensitive customer data, including personal information and payment details, will be critical. Appropriate encryption and secure payment gateways need to be implemented.

8. Business Process Overview

8.1. Legacy System (AS-IS)

In the current legacy system, customers manually visit airline counters, make bookings, and handle all reservations without the convenience of real-time flight availability or online booking. This requires customers to directly interact with airline agents, who manually check flight schedules and reservations. Customers may not have access to detailed information such as seat availability or flight changes until they arrive at the counter, causing delays and errors in the booking process. Additionally, customers often face the challenge of making payments in person, which adds to the inconvenience.

8.2. Proposed Recommendations (TO-BE)

In the **FlyEase Airline Reservation System**, the manual booking process is fully automated and moved online, eliminating the need for physical visits to airline offices. Customers can now:

- **Access the System Online**: Customers can easily browse available flights and schedules through the web portal or mobile app.
- **Registration**: New customers will register online, creating a unique username and password for future bookings.
- **Flight Booking**: Customers can select their desired flight, view available seating, and make their reservations.
- **Payment Methods**: Multiple payment options are offered, including credit cards, debit cards, online payments, or in-person payments via valid staff.
- **Reservation Management**: Customers can update personal details, check reservation status, and cancel their bookings as required.
- **Administrator Controls**: The system allows administrators to add, modify, or delete flight schedules, ensuring the system always reflects the current flight information.

9. Business Requirements –

Sr. No	Business Requirement	Functionality	Priority
1	System home page should display the rules and regulations issued by the tourism ministry	Customer Interface	High
2	System should display complete tour information such as accommodation, cost, duration, and destination details.	Customer Interface	High
3	System should capture personal details of the new customer to generate a unique username and password	Database Functionality	High
4	Existing customer should be able to use username and password for future transactions	Customer Interface	High
5	Existing customer can update personal details	Customer Interface	High
6	Existing customer can view reservation details	Customer Interface	High
7	Customer must be able to pay by cash, credit card, debit card, or by cheque	Customer Interface	High
8	Customer should be able to access the system using computer, mobile, or tablet	System Functionality	Medium
9	System should check staff validity while making a reservation	System Functionality	High
10	Administrator can add, modify, or delete tour scheme	Admin Functionality	High
11	System should allow customers to cancel flight reservations	Customer Interface	High
12	System should send confirmation emails to customers after successful booking	System Functionality	High
13	Customer should be able to select the preferred flight class (economy, business, first class)	Customer Interface	Medium
14	System should support multi-currency payment options for international customers	Customer Interface	Medium

15	System should allow customers to view their flight booking history	Customer Interface	Medium
16	Admin should be able to view customer reservations and make modifications if required	Admin Functionality	High
17	Admin should be able to check available flights, adjust pricing, and manage seat availability	Admin Functionality	High
18	System should support integration with third-party APIs for real-time flight status updates	System Functionality	Medium
19	System should log all customer interactions and flight bookings for audit purposes	System Functionality	High
20	Customer should be able to provide feedback or rate their flight experience after the journey	Customer Interface	Medium