

1. INTRODUCTION

1.1 Project Overview

SB Flights is a next-generation digital platform designed to transform the way you book and manage flight tickets. Whether you're a frequent flyer or an occasional traveler, SB Flights brings simplicity, speed, and convenience to your travel planning.

Our intuitive web application makes it easy to find and book the perfect flight. Simply enter your travel dates, destinations, number of passengers, and basic details — and receive instant ticket confirmation. No more long queues or confusing systems.

Imagine having comprehensive flight details right at your fingertips. From departure and arrival times to flight classes and available amenities, SB Flights provides all the essential information you need to make informed decisions. No more second-guessing or uncertainty — every aspect of your travel is made crystal clear, ensuring complete confidence in your booking.

The booking process itself is designed to be as simple and streamlined as possible. Just enter your name, age, preferred travel dates, departure and arrival cities, and the number of passengers. Once you submit your booking request, you'll receive instant confirmation of your reservation. Say goodbye to long queues and complex reservation systems — SB Flights makes booking your next journey quick, easy, and hassle-free.

Upon successful booking, you'll gain access to our dedicated Booking Details page, which becomes your personal travel companion. This page offers a comprehensive overview of all your current and previous bookings, enabling you to effortlessly manage your travel plans and stay organized. With SB Flights, your essential travel information is always just a click away, supporting a stress-free and well-managed journey.

But SB Flights isn't just built for travelers — it also includes powerful tools for flight service administrators. Our intuitive Admin Dashboard allows administrators to efficiently manage ticket reservations. They can easily view a list of all available flights open for booking, monitor ongoing and past reservations, and maintain complete control over the booking process. Each flight service has its own separate login and registration pages, ensuring privacy and security for both administrators and users. SB Flights is here to enhance your travel experience by providing a seamless and convenient way to book flight tickets. With our user-friendly interface, efficient booking management, and robust administrative features, we ensure a hassle-free and enjoyable flight ticket booking experience for both users and flight administrators alike.

Get ready to embark on a new era of flight travel with SB Flights — your ticket to effortless booking and unforgettable journeys.

1.2 Purpose

- **Solve complex problems in a way that fits the state of your customers:**

Our customers (budget travelers, busy professionals) want quick, transparent, and reliable ways to find flights. Our platform is tailored to their needs—saving them time and reducing stress.

- **Succeed faster and increase solution adoption:**

By aggregating multiple airlines, predicting price changes, and offering smart notifications, we align with customers' existing behaviors (using mobile apps, price comparison tools) but deliver it faster and smarter.

- **Sharpen communication and marketing strategy:**

We focus our messaging on “Save time. Save money. Travel smart.”—directly tapping into customers’ triggers of convenience and cost savings.

- **Increase touch-points and build trust:**

Frequent, helpful notifications on price drops or better routes build trust and keep users engaged, addressing urgent or costly issues like last-minute fare hikes.

- **Understand and improve the existing situation:**

By studying how travellers currently use multiple platforms and still feel uncertain, we streamline the process into one intuitive tool, reducing confusion and decision fatigue.

2. IDEATION PHASE

2.1 Problem Statement

With the growth of air travel, passengers are overwhelmed by scattered flight information across different airline websites and travel aggregators. They often spend significant time comparing flights, worrying about hidden fees, and facing uncertainties around cancellations and refunds.

“To build a secure, scalable Flight Finder platform that enables users to search, filter, and book flights seamlessly, while offering administrators the tools to manage flight schedules and bookings effectively.”

Key Challenges

- Fragmented information across multiple booking platforms.
- Hidden costs revealed late in the booking process.
- Lack of integrated management of bookings and cancellations.
- Security concerns while making online payments.

Opportunity

By building a **Flight Finder application**, we can:

- Aggregate flights from multiple airlines with clear filters (price, duration, stops, airlines).
- Offer transparent pricing without hidden surprises.
- Integrate secure payment systems and trackable bookings.
- Provide real-time updates and easy cancellations.

2.2 Empathy Map Canvas

Who are we empathizing with?

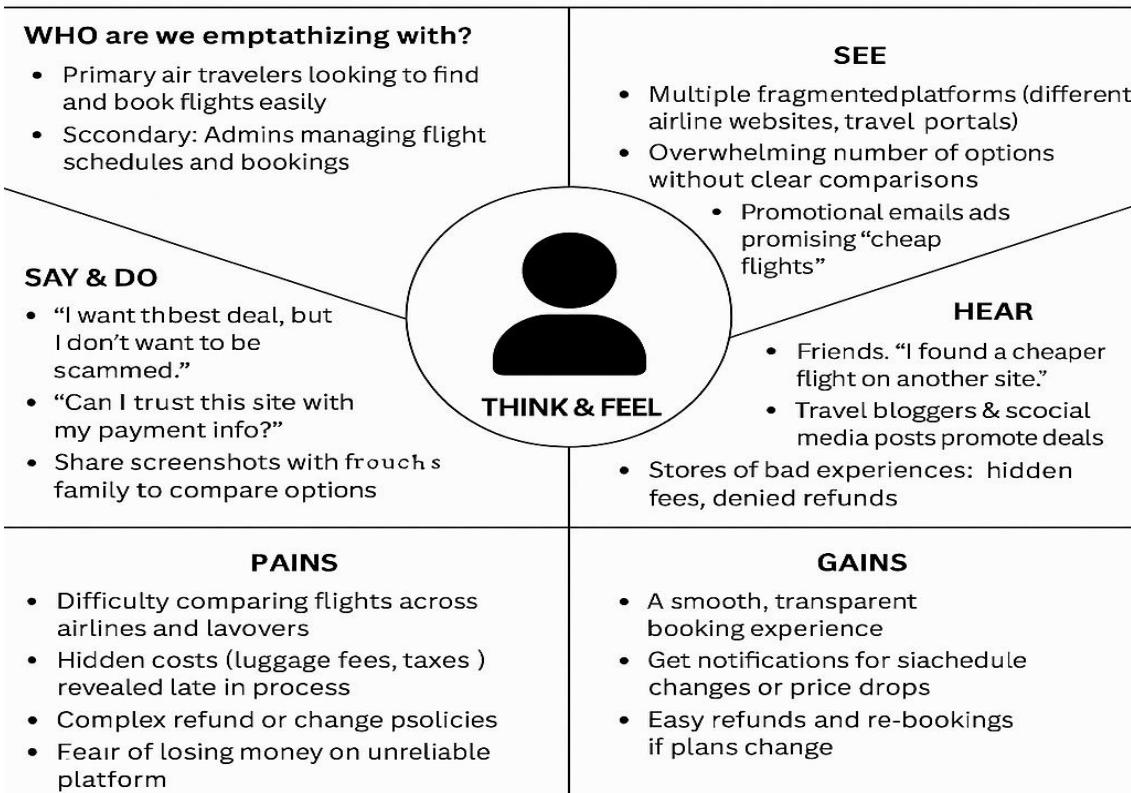
- Primary: Air travelers looking to find and book flights easily.
- Secondary: Admins managing flight schedules and bookings.

 What do they THINK & FEEL?

- Worry about getting the best price and avoiding hidden fees.
- Nervous about cancellations, refunds, or schedule changes.
- Appreciate transparency, trustworthiness, and quick results.
- Value the ease of comparing flights on one platform.

Empathy Map Canvas

Flight Finder Application



2.3 Brainstorming

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

Step-1: Team Gathering, Collaboration and Select the Problem Statement



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare
⌚ 1 hour to collaborate
👤 2-8 people recommended

Before you collaborate
A little bit of preparation goes a long way with this session. Here's what you need to do to get going.
⌚ 10 minutes

A Team gathering
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B Set the goal
Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools
Use the Facilitation Superpowers to run a happy and productive session.
[Open article](#)

Define your problem statement
What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.
⌚ 5 minutes

PROBLEM
How might we [your problem statement]?

Key rules of brainstorming
To run an smooth and productive session

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2 Brainstorm
Write down any ideas that come to mind that address your problem statement.
⌚ 10 minutes

TIP
You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

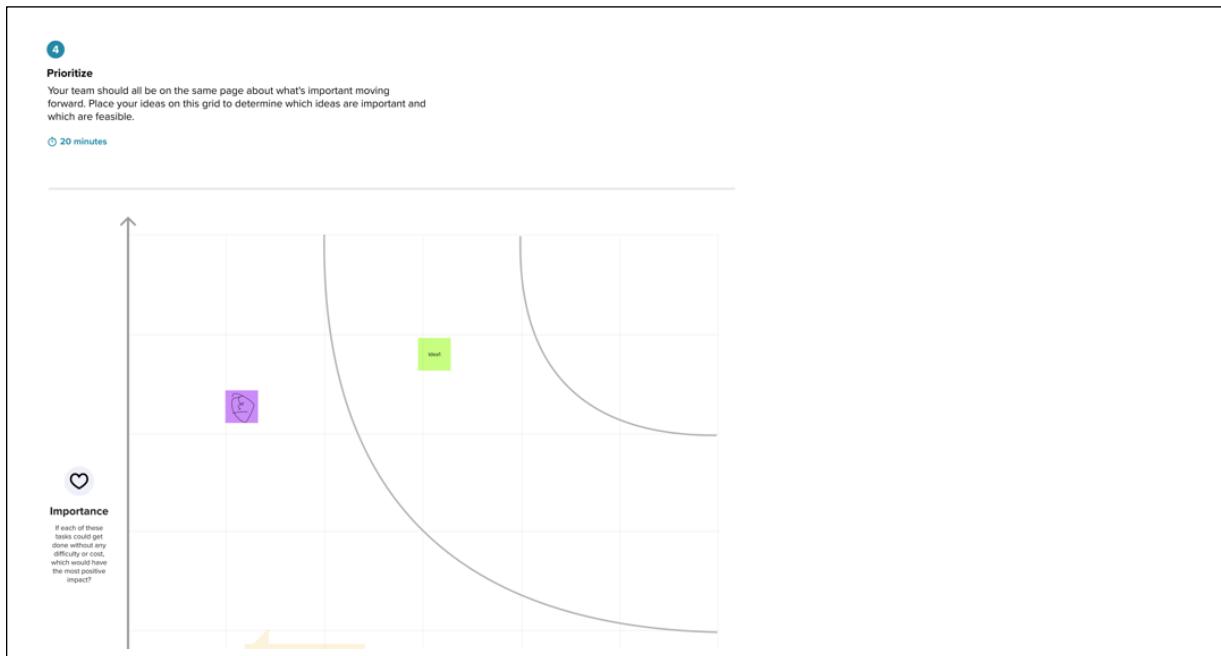
Amar Yuktesh Person 3 Person 4

Person 5 Person 6 Person 7 Person 8

3 Group ideas
Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.
⌚ 20 minutes

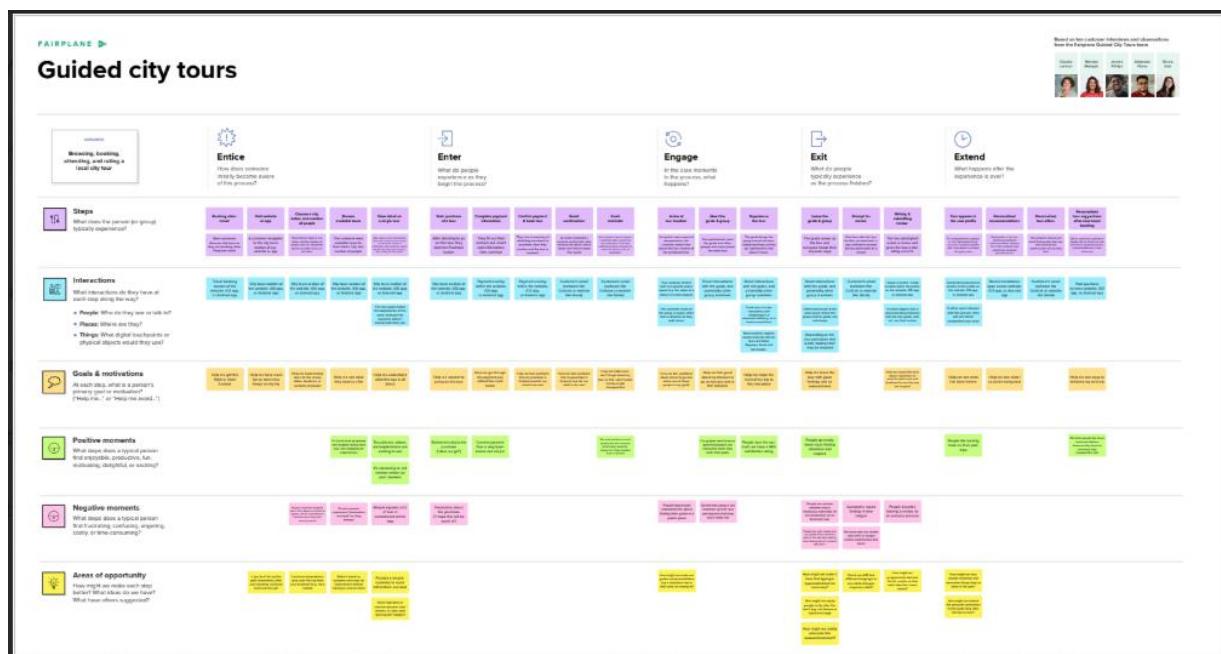
TIP
Add customizable tags to sticky notes to make it easier to find, organize, and categorize important ideas as themes within your mind.

Step-3: Idea Prioritization



3. REQUIREMENT ANALYSIS

3.1 Customer Journey map



3.2 Solution Requirement

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration and Login	Registration through Form or Login through Form
FR-2	Flight Search & Booking	-Search flights by route, date, - View flight details - Book tickets for selected flights
FR-3	Admin Flight Management	-Add, update, or delete flights - Monitor user bookings - Generate reports
FR-4	Booking History & Details	-View current and past bookings

Non-functional Requirements:

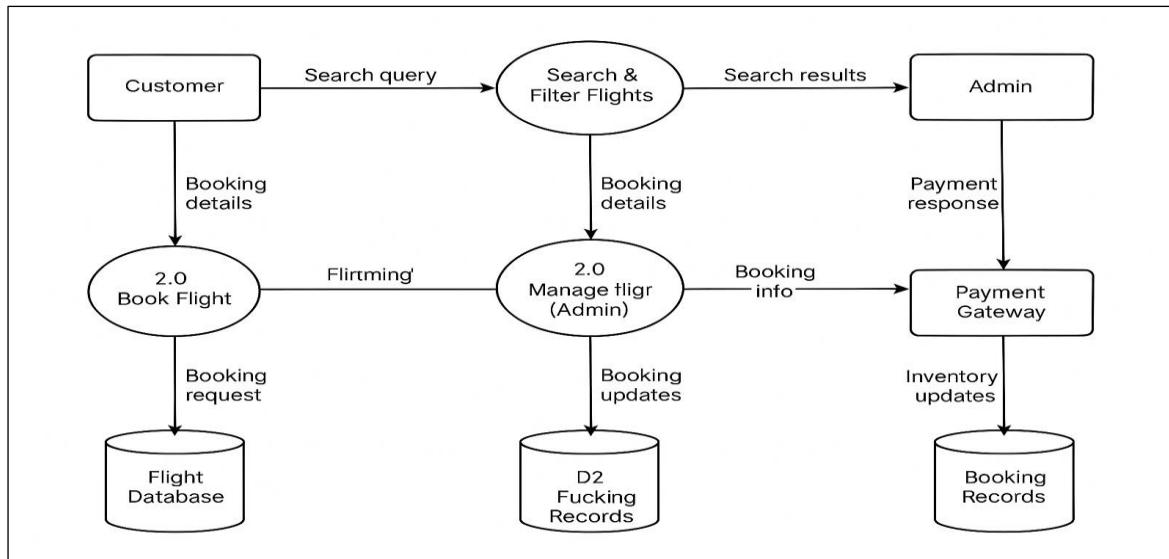
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Interface should be intuitive, responsive, and accessible on web and mobile.
NFR-2	Security	Implement secure login, role-based access, data encryption, and HTTPS protocol.
NFR-3	Reliability	Ensure consistent system uptime, backup mechanisms, and failover strategies.
NFR-4	Performance	Handle multiple simultaneous bookings efficiently; average response < 2 sec.
NFR-5	Availability	System should be available 99.9% of the time, with minimal downtime.
NFR-6	Scalability	The system must scale with increasing users, data, and flight partners.

3.3 Data Flow Diagram

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	Search Flights	USN-1	I see a list of matching flights.	I see a list of matching flights.	High	Sprint-1
	Filter & Sort	USN-2	As a user, I can filter or sort flights by price, duration, or airline.	I see updated search results.	Medium	Sprint-2
	View Flight Details	USN-3	As a user, I can view full flight details before booking.	I can view timings, baggage, and cancellation policy.	High	Sprint-1
	Book Flight	USN-4	As a user, I can book a flight by entering details and paying online.	I receive a booking confirmation and ticket info.	High	Sprint-1
	Manage Booking	USN-5	As a user, I can view or cancel my existing bookings.	I see updated booking status.	Medium	Sprint-2
Admin	Manage Flights	USN-6	As an admin, I can add, update, or remove flight schedules.	Updated data reflects in user search.	High	Sprint-1
	View Reports	USN-7	As an admin, I can view booking and revenue reports.	I can view reports.	Low	Sprint-3

3.4 Technology Stack

Technical Architecture:

The SB Flights is built using a scalable and modular 3-tier architecture, ensuring high performance, maintainability, and future scalability.

Presentation Layer (Frontend): Travelers can search for flights, view detailed flight information, and book tickets and administrators can log in to manage flight listings and monitor bookings and Built with modern web technologies (e.g., HTML5, CSS3, JavaScript frameworks like React).

Business Logic Layer (Backend): Flight search, filtering, and booking management and user authentication and role-based access control (traveler vs. admin) and real-time seat availability and booking confirmation.

Data Storage Layer: Passenger profiles, booking history, and transaction records and Flight schedules, seat inventory, and airline information and Admin and service provider records.

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App.	HTML, CSS, JavaScript / React.js / Next.js / React Native
2.	Application Logic-1	Flight search, booking logic, seat selection, confirmation	Node.js / Express.js / Java
3.	Application Logic-2	Admin panel for managing flights, monitoring, and reporting	React.js (Frontend) + Node.js (Backend)
4.	Application Logic-3	Notifications and alerts via email/SMS	Twilio API, SendGrid, Cron Jobs, Node Scheduler
5.	Database	Stores users, flight data, bookings, and admin records	MongoDB / PostgreSQL / MySQL
6.	Cloud Database	Scalable cloud-hosted database service	MongoDB Atlas, Amazon RDS, Firebase Realtime DB.
7.	File Storage	Stores documents, invoices, logs	AWS S3 / Google Cloud Storage / Local Filesystem
8.	External API-1	Real-time flight pricing & availability	Amadeus API / Skyscanner API / AviationStack API
9.	External API-2	Weather or airport status integration	OpenWeather API / Aviation API

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	React.js, Node.js, Express.js, MongoDB, Nginx
2.	Security Implementations	Authentication, encryption, firewall, and access control implementations	JWT, HTTPS, bcrypt, CORS, OAuth2, Helmet.js, IAM Roles (AWS)
3.	Scalable Architecture	System scalability via tiered or service-oriented design	3-Tier Architecture, Microservices (optional), Docker, Kubernetes, Load Balancers
4.	Availability	Measures to ensure application uptime and failover	Multi-Zone Deployment, Auto-Scaling Groups, Load Balancers, Cloud CDN
5.	Performance	Optimization for speed, caching, concurrency, and request handling	Redis (caching), CDN (e.g., Cloudflare), Nginx Reverse Proxy, Lazy Loading, Indexing

4. PROJECT DESIGN

4.1 Problem Solution Fit

Problem – Solution Fit Template:

The Problem–Solution Fit represents the critical stage where we validate that a real customer problem exists, and that our solution effectively solves it. For our project “Flight Finder,” this means understanding travelers’ frustrations with booking flights and ensuring our platform directly addresses these pain points.

This concept is vital for entrepreneurs and innovators because it:

- Identifies clear behavioral patterns, needs, and annoyances of customers.
- Ensures we are not creating a solution looking for a problem, but rather solving an actual, validated issue.

Purpose:

Purpose in Our Project

Solve complex problems in a way that fits the state of your customers:

Our customers (budget travelers, busy professionals) want quick, transparent, and reliable ways to find flights. Our platform is tailored to their needs—saving them time and reducing stress.

Succeed faster and increase solution adoption:

By aggregating multiple airlines, predicting price changes, and offering smart notifications, we align with customers' existing behaviors (using mobile apps, price comparison tools) but deliver it faster and smarter.

Sharpen communication and marketing strategy:

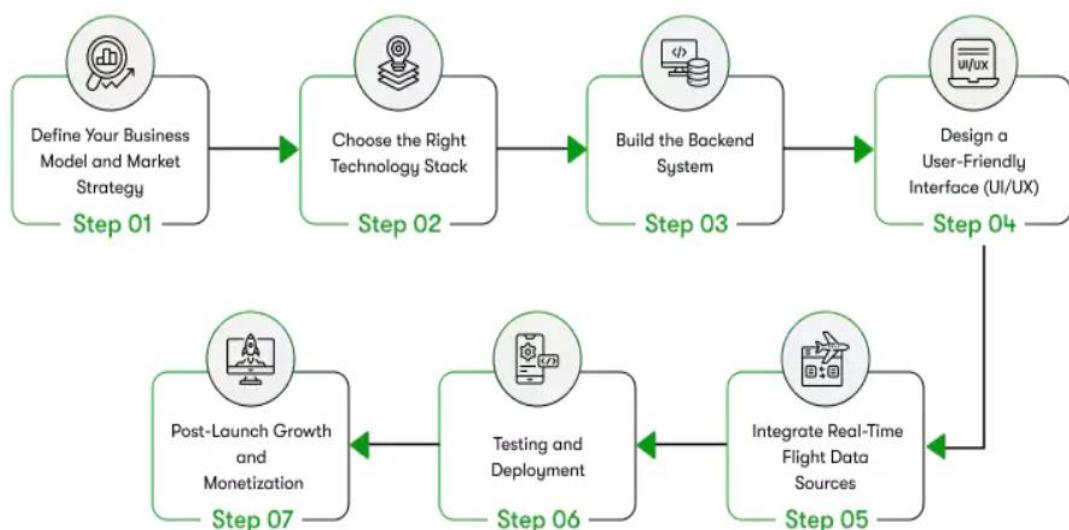
We focus our messaging on **“Save time. Save money. Travel smart.”**—directly tapping into customers' triggers of convenience and cost savings.

Increase touch-points and build trust:

Frequent, helpful notifications on price drops or better routes build trust and keep users engaged, addressing urgent or costly issues like last-minute fare hikes.

Understand and improve the existing situation:

By studying how travelers currently use multiple platforms and still feel uncertain, we streamline the process into one intuitive tool, reducing confusion and decision fatigue.



4.2 Proposed Solution

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Finding, comparing, and booking flights is often time-consuming, scattered across multiple platforms, and lacks a unified, user-friendly interface. Customers struggle to get the best options tailored to their needs quickly, while airlines and agencies need effective channels to reach potential travellers.
2.	Idea / Solution description	Develop a Flight Finder application that allows users to search, filter, and book flights in an intuitive interface. The system connects to airline databases or APIs, providing real-time availability, booking options, secure payments, and automated notifications. Admins can manage flight inventories, monitor bookings, and generate reports.
3.	Novelty / Uniqueness	Combines an easy search and booking process with intelligent filters (price, duration, stops, airlines) plus a built-in admin portal to manage flights. Includes secure online payments and real-time updates, reducing dependency on travel agents or fragmented platforms.
4.	Social Impact / Customer Satisfaction	Simplifies air travel planning, saving customers time and effort while giving them more control over travel choices. Helps small airlines and agencies reach more customers, improving service accessibility.
5.	Business Model (Revenue Model)	The platform can generate revenue through commissions on ticket bookings, premium placement for airlines, advertising, or offering a subscription model for frequent travelers to access exclusive deals and priority support.

4.3 Solution Architecture

Solution Architecture:

Flight Finder system is to develop a user-friendly, secure, and scalable platform that allows customers to search, filter, and book flights easily. This system serves as a bridge between airline inventory systems and customers by providing a seamless experience for browsing available flights, making reservations, and managing bookings.

- Enables users to search for flights by specifying source, destination, travel dates, and other preferences.
- Allows filtering and sorting of search results based on price, duration, stops, and airlines.
- Facilitates quick booking by collecting passenger details and processing payments securely.
- Administrators can manage flight inventory, schedules, and monitor overall system usage.

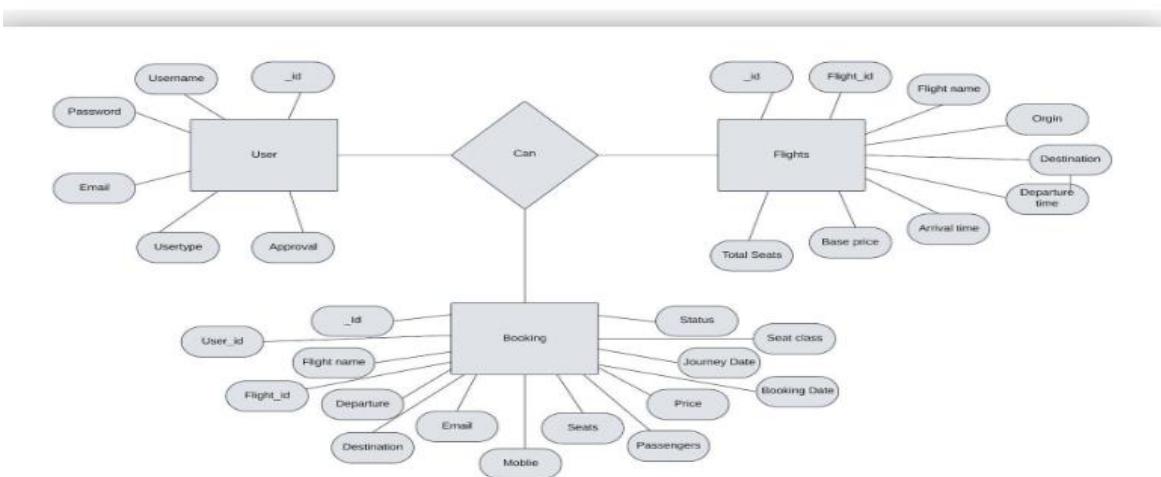


Figure 1: Architecture and data flow of the Flight Finder

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Search Flights	USN-1	As a user, I can search for flights by entering source, destination, and dates.	3	High	
Sprint-1	View Flight Details	USN-3	As a user, I can view full flight details before booking.	2	High	
Sprint-1	Book Flight	USN-4	As a user, I can book a flight by entering details and paying online.	5	High	
Sprint-2	Filter & Sort Flights	USN-5	As a user, I can filter or sort flights by price, duration, or airline.	3	Medium	
Sprint-2	Manage Booking	USN-2	As a user, I can view or cancel my existing bookings.	3	High	
Sprint-3	Manage Flights (Admin)	USN-6	As an admin, I can add, update, or remove flight schedules.	4	High	
Sprint-4	View Reports (Admin)	USN-7	As an admin, I can view booking and revenue reports.	4	Low	

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	10	4 Days	17 June 2025	20 June 2025	10	20 June 2025
Sprint-2	6	4 Days	21 June 2025	24 Nov 2022		
Sprint-3	4	1 Days	25 June 2025	26 June 2025		
Sprint-4	4	1 Days	27 June 2025	28 June 2025		

Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

Average Velocity

6

6. FUNCTIONAL AND PERFORMANCE

Project Overview:

Project Name: Flight Finder Application

Project Description: A web-based platform that allows customers to search, filter, and book flights, with secure payments and booking management. Admins can manage flight inventory and view reports.

Project Version: 1.0

Testing Period: 17 June 2025 to 27 June 2025

Testing Scope:

Features & Functionalities to be Tested

- Flight search based on source, destination, and dates
- Filtering & sorting flights (by price, duration, stops, airlines)
- Viewing detailed flight information
- Booking a flight with secure payment
- Managing user bookings (view/cancel)
- Admin dashboard for managing flight inventory
- Notifications & confirmation emails

User Stories / Requirements to be Tested

- USN-1: Search Flights
- USN-2: Filter & Sort Flights
- USN-3: View Flight Details
- USN-4: Book Flight & make payment
- USN-5: Manage Bookings
- USN-6: Admin manages flights
- USN-7: Admin views reports

Testing Environment:

Credentials (if required):

Admin: admin@gmail.com / admin123

User: john123@gmail.com / john123

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Search for available flights	1. Open app 2. Enter source, destination, date 3. Click search	List of matching flights is displayed	[Result]	Pass
TC-002	Filter flights by price	1. Perform a search 2. Apply price filter	Flights displayed according to selected price range	[Result]	Pass
TC-003	View flight details	1. Click on a flight	Detailed info (timing, stops, baggage, rules) shown	[Result]	Pass
TC-004	Book a flight	1. Select flight 2. Enter passenger details 3. Pay	Booking confirmed, ticket issued, email sent	[Result]	Pass
TC-005	Cancel booking	1. Go to 'My Bookings' 2. Cancel booking	Booking status updated, refund initiated	[Result]	Pass
TC-006	Admin add flight schedule	1. Login as admin 2. Add new flight schedule	Flight available in user search	[Result]	Pass

Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	Booking fails on invalid card input	1. Select flight 2. Enter wrong card data 3. Pay	Medium	Open	Should show clear error message
BG-002	Search returns empty on valid inputs	1. Enter valid locations 2. Click search	High	In Progress	Needs urgent fix
BG-003	Admin report date filter not working	1. Login admin 2. Apply date filter	Low	Open	Filter gives same results

Sign-off:

Tester Name: Gayathri

Date: 25 June 2025

Signature: Gayathri

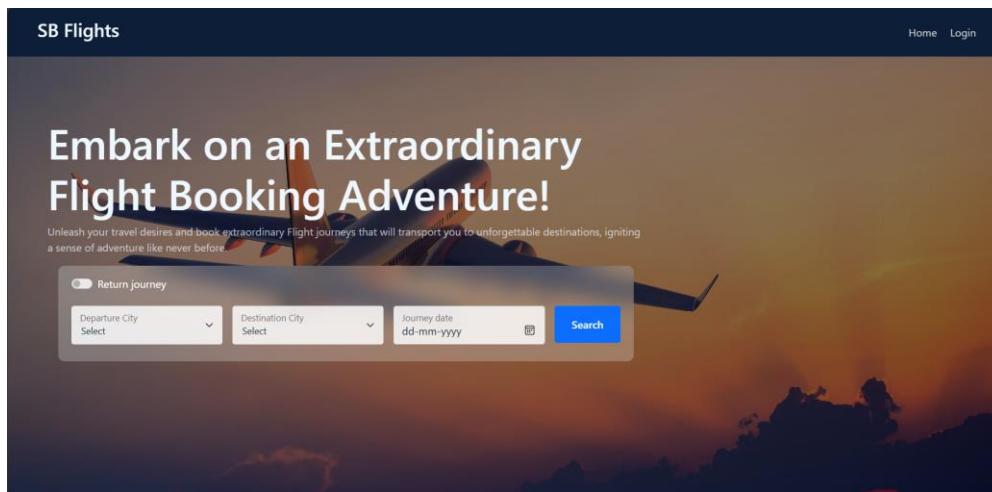
Notes:

- Ensure that all test cases cover both positive and negative scenarios.
- Encourage testers to provide detailed feedback, including any suggestions for improvement.
- Bug tracking should include details such as severity, status, and steps to reproduce.
- Obtain sign-off from both the project manager and product owner before proceeding with deployment.

7. RESULTS

7.1 Output Screenshots

Landing Page:



Authentication:

The screenshot shows the login screen of the SB Flights website. It has a light blue header bar with the "SB Flights" logo on the left and "Home" and "Login" links on the right. The main body is a light blue card with the word "Login" at the top. It contains two input fields: "Email address" and "Password", both with placeholder text. Below these is a red "Sign in" button. At the bottom of the card, there's a link "Not registered? Register".

User Bookings:

SB Flights

Bookings

Booking ID: 685f9c74b3d21f8baa83b088
Mobile: 9247676017 Email: john123@gmail.com
Flight Id: 396436 Flight name: indigo
On-boarding: Kolkata Destination: Hyderabad
Passengers:
1. Name: John, Age: 55
2. Name: sowj, Age: 50
Booking date: 2025-06-28 Journey date: 2025-07-03
Journey Time: 03:00 Total price: 14000
Booking status: cancelled

Booking ID: 685f92fb3d21f8baa83af22
Mobile: 9247676017 Email: john123@gmail.com
Flight Id: 396436 Flight name: indigo
On-boarding: Kolkata Destination: Hyderabad
Passengers:
1. Name: John, Age: 55
2. Name: sowj, Age: 50
Booking date: 2025-06-28 Journey date: 2025-07-12
Journey Time: 03:00 Total price: 10000
Booking status: confirmed

[Cancel Ticket](#)

Booking ID: 685f975db3d21f8baa83ada3
Mobile: 9247676017 Email: john123@gmail.com
Flight Id: 405355 Flight name: indigo
On-boarding: Trivendrum Destination: Jaipur
Passengers:

Booking ID: 685f923bb3d21f8baa83ab00
Mobile: 7893492422 Email: sujith123@gmail.com
Flight Id: 768346 Flight name: sujith
On-boarding: Mumbai Destination: Kolkata
Passengers:

Admin Dashboard:

SB Flights (Admin)

Home Users Bookings Flights Logout

Users 13 [View all](#)

Bookings 6 [View all](#)

Flights 12 [View all](#)

New Operator Applications

Operator name: yamini	Operator email: yamini123@gmail.com	Approve	Reject
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All Users:

SB Flights (Admin)

Home Users Bookings Flights Logout

All Users

UserId 6854e0c2b227aa51a4553e94	Username Alice	Email alice123@gmail.com
UserId 685f90f5b3d21f8baa83aad7	Username John	Email john123@gmail.com
UserId 685f9123b3d21f8baa83aad	Username Raji	Email raj123@gmail.com
UserId 685f91d1h3t71fRhaaRtaef	Username arin	Email arin123@gmail.com

Flight Operators

Id 685f8dd3b3d21f8baa83aa01	Flight Name Bob	Email bob123@gmail.com
Id 685f8f40b3d21f8baa83aae6	Flight Name ajay	Email ajay123@gmail.com
Id 685f8f6eb3d21f8baa83aa77	Flight Name sujith	Email sujith123@gmail.com
Id 685f8f6eb3d21f8baa83ab87	Flight Name ram	Email ram123@gmail.com

Flight Operator:

SB Flights (Operator)

Home Bookings Flights Add Flight Logout

Bookings 3 View all

Flights 4 View all

New Flight (new route) Add new

All Bookings:

SB Flights (Admin)

Home Users Bookings Flights Logout

Bookings

Booking ID	Mobile	Email	Flight Name	On-boarding	Destination	Passengers	Booking Date	Journey Date	Time	Total Price	Status
685f95c74b3d21fbbaa3b3d88	9247676017	john123@gmail.com	indigo	Kolkata	Hyderabad	1. John, 2. Sowmya	2025-06-28	2025-07-03	03:00	14000	Cancelled
685f92d0b3d21fbbaa3ada22	9247676017	john123@gmail.com	indigo	Kolkata	Hyderabad	1. John, 2. Sowmya	2025-06-28	2025-07-12	03:00	10000	Confirmed

[Cancel Ticket](#)

Booking ID	Mobile	Email	Flight Name	On-boarding	Destination	Passengers	Booking Date	Journey Date	Time	Total Price	Status
685f92d0b3d21fbbaa83ab10	787797944	raji123@gmail.com	ajay	varanasi	Pune	1. Raja, 2. Priya	2025-06-28	2025-07-12	03:00	10000	Confirmed

New Flight:

SB Flights (Operator)

Home Bookings Flights Add Flight Logout

Add new Flight

Flight Name	Flight Id
indigo	

Departure City	Departure Time
Select	12:00

Destination City	Arrival time
Select	14:00

Total seats	Base price
0	0

[Add now](#)

8. ADVANTAGES & DISADVANTAGES

Advantages

- Provides a centralized platform to search, compare, and book flights from multiple airlines.
- Offers transparent pricing, reducing surprises from hidden fees.
- Saves customers time and effort by avoiding multiple websites.
- Includes secure, trackable online payments and refunds.
- Sends real-time notifications for bookings, cancellations, or schedule changes.
- Helps small airlines or agencies reach more customers.

Disadvantages

- Complex to integrate with multiple airline APIs and payment gateways.
- Requires maintaining large datasets and ensuring data accuracy in real time.
- High initial development cost and potential ongoing expenses for server infrastructure.
- Must strictly handle data privacy and compliance (GDPR, PCI-DSS for payments).
- Needs robust testing to handle peak loads and concurrency.

9. CONCLUSION

The **Flight Finder application** offers a smart, scalable solution to the fragmented and often frustrating process of searching, comparing, and booking flights. By providing a centralized, user-friendly platform with transparent pricing, secure transactions, and easy booking management, it significantly improves the travel planning experience for customers.

10. FUTURE SCOPE

User Experience Improvements

- **Advanced Flight Filtering & Sorting:**
Allow users to filter flights by price, duration, layovers, airlines, time of day, and class.
- **Seat Selection Feature:**
Enable users to choose specific seats during booking, with real-time seat map updates.
- **Multi-Language & Multi-Currency Support:**
Add internationalization features to support global users with localized content and pricing.
- **Passenger Profile Management:**
Allow users to create accounts and save personal details, travel preferences, and frequent flyer info for faster booking.

Flight Search & Real-Time Data

- **Live Flight Pricing and Availability:**
Integrate with real-time airline APIs (e.g., Amadeus, Sabre, or Skyscanner) for accurate price and seat data.
- **Dynamic Pricing Engine:**
Implement an algorithm to adjust pricing based on demand, availability, or booking window.
- **Live Flight Tracking:**
Allow users to track live flight status (delays, gate changes, weather) via third-party API.

11. APPENDIX

Github Repository:- https://github.com/L-Gayathri/Flight_Finder

Project Demo Link:-

<https://drive.google.com/file/d/1WoPzAgsjbSTJLSOArWntXpMFqGc65pA2/view?usp=sharing>