



STAKT - PRJ GROUP 2

Summer
2025

SOFTWARE REQUIREMENTS SPECIFICATION

GitHub Link: <https://github.com/tommy-chabiras/skytrackr>

Project Name:
SkyTrackR



Seung, Truong, Arky, Khanh, Tommy

Executive Summary

Background

Description

Company Value Add

End-user Value Add

Scope

What is Included

- Price trends

-

What is Not Included

Justification

This project is justified by the growing demand for smarter airfare tracking solutions. Current platforms lack real-time notifications and transparent cost breakdowns, leaving travelers uncertain about the best time to book flights. By providing predictive insights, personalized dashboards, and detailed pricing transparency, SkyTrackR addresses a real-world problem while offering academic value by applying data-driven methods, system design, and user-centered development practices.

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Section 1

1.1 Document Authors

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Tommy Chabiras

Truong Ma

Seung Hoon Han

1.2 Document Revision History

WEEK	DATE	Revisions
1	Sept. 17, 2025	<ul style="list-style-type: none">Initial document formattingEdited Sections 1 - 2.1
2	Sept. 18, 2025	<ul style="list-style-type: none">Edited Section 2.1Added Executive Summary - Justification
3	Sept. 24, 2025	<ul style="list-style-type: none">Initialize sections 2.2, 2.3, 2.5
4	Sept. 25, 2025	<ul style="list-style-type: none">Edited Sections 2.2-2.5Added References to Section 2.1
5	Oct. 01, 2025	<ul style="list-style-type: none">Edited Sections 2.6-2.7
6	Oct. 08, 2025	<ul style="list-style-type: none">
7	Oct. 09, 2025	<ul style="list-style-type: none">Added section 2.8
8	Oct. 30, 2025	<ul style="list-style-type: none">Added sections 3.1 - 3.4
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12		<ul style="list-style-type: none">
13		<ul style="list-style-type: none">
14		<ul style="list-style-type: none">

1.3 Document Purpose

The purpose of this document is to define the foundation of the **SkyTrackR Project**. It establishes the project background, objectives, scope, and intended deliverables, while also serving as a formal agreement between the project team, stakeholders, and faculty advisor. This document provides clarity on expectations, responsibilities, and success criteria for all parties involved.

1.4 Audience

This document is intended for:

Faculty Advisors/Clients: To assess the feasibility, quality, and alignment of the project with academic and business requirements.

Team Members: To maintain a shared understanding of goals, scope, and deliverables.

End-Users/Stakeholders: To confirm that the product vision and scope address their needs.

Project Evaluators: To evaluate progress, adherence to methodology, and overall outcomes.

1.5 Group Agreement

Team #: 2

Project Title: SkyTrackR

Project Time Frame: September 17, 2025 - April 17, 2026

Team Members:

Arky Lun, Khanh Anh Kiet Nguyen, Tommy Chabiras, Truong Ma, Seung Hoon Han

Team Leadership: Khanh Anh Kiet Nguyen

Team Functions/Roles:

Arky Lun (Business Analyst),

Khanh Anh Kiet Nguyen (Project Manager),

Tommy Chabiras (Backend Developer),

Truong Ma (UI/UX Designer),

Seung Hoon Han (Frontend Developer)

Team Meetings

- Weekly In-Person Meeting: Every **Wednesday** on campus to review progress, resolve issues, and plan next steps.
- Weekly Online Meeting: Every **Thursday** through Teams for status updates and coordination.
- Ad-hoc Sessions: Additional meetings as needed for sprint planning, backlog refinement, or urgent reviews, held on **Discord**.

Team Problems

- Keep communication open and clear
- Respect and listen to all member's ideas
- Focus on the problem not the individuals

Team Commitment

The undersigned members agree to work together on the project until the end of the PRJ666 next Semester. They recognize that as a team and individually they are equally responsible for the quality of all deliverables.

Name	Date	Signature
Arky Lun	Sept. 17 2025	Arky Lun
Khanh Anh Kiet Nguyen	Sept. 17 2025	Khanh Anh Kiet Nguyen
Tommy Chabiras	Sept. 17 2025	Tommy Chabiras
Truong Ma	Sept. 17 2025	Truong Ma
Seung Hoon Han	Sept. 17 2025	Seung Hoon Han

Section 2

2.1 Project Proposal

2.1.1 Project Background

Features	Google Flights	Skyscanner	Expedia	Flight Deals	SkyTrackR
Flight Search and Comparison	✓	✓	✓	✓	✓
Price Tracking and Alert	✓	✓	✓		✓
Personalized Watchlist		✓	✓		✓
User Reviews		✓			✓
Price Trend	✓	✓	✓		✓
AI Price Prediction					✓
Airline Info (e.g. pet policy)			✓		✓
Offer deals/discounts	✓	✓	✓		

Google Flights [1]

Google Flights is an online flight search engine that is designed to help travellers quickly find and compare airfare across a wide range of airlines and booking platforms.

This tool offers travellers a fast and reliable way to search for flights across numerous airlines worldwide. One of the strongest advantages of Google Flights is its ability to help travelers visualize price trends. The platform provides interactive charts and calendars that display how fares fluctuate over time, making it easier for users to identify the cheapest travel dates. These visualizations allow travelers to quickly spot patterns, such as seasonal increases or weekend price spikes.

Although Google Flights provides helpful visualizations and price trend charts, these tools remain largely descriptive rather than predictive. Users can only see how fares have fluctuated in the past or compare options across flexible dates. Additionally, they can sometimes oversimplify the data leaving out critical details such as hidden fees, baggage charges or seat selection costs.

Skyscanner [2]

Skyscanner is an aggregation platform that brings together different travel agency information and prices. This includes specific flight prices, 1 to 5 star user reviews, and a page dedicated to decreased ticket prices. This may count as a simple form of price trend analysis. However, with the frequency of ticket prices changing, prices shown on Skyscanner sometimes change after redirecting to the Travel Agency/Airline site. Hidden fees such as baggage costs and taxes are also not included in the prices shown, leading to confusion. Additionally, Skyscanner does not handle the booking, instead requiring users to click through to the OTA/airline sites to book which may cause feelings of redundancy.

Expedia [3]

Expedia is a platform allowing travelers to book and reserve many different traveling services including flights, hotels, rental cars, and vacation packages. They also include the specific details and price tracking of each of these services, but Expedia doesn't really have one main service or feature they excel at, their price prediction feature is very undetailed and leaves a lot to be desired from the user.

Flight Deals [4]

Flight deal platforms save time by scanning multiple routes and sending quick alerts, which can be useful for flexible travelers. These services are not personalized, often focusing on broad routes rather than user-specific needs. Alerts may not be real-time, deals can expire quickly, and there is little transparency about taxes, baggage fees, or policies.

SkyTrackR leverages AI to provide accurate price predictions, detailed insights, and clear all-in-one cost breakdowns. By showing the true cost upfront including baggage, seat selections(economy, business, first class), and taxes, SkyTrackR aids travelers in planning trips with confidence and clarity.

Our AI solution goes beyond static searches by offering real-time notifications with full price breakdown, personalized watchlists/dashboards, and predictive insights into future price changes from OTAs and airlines. This allows travelers to simplify their trip-planning experience with clear, data-driven information our solution seeks to provide.

2.1.2 Problem Statement

The idea for SkyTrackR came from a problem almost every traveller has faced, hunting for cheap flights and never being sure if they're booking at the right moment. One day the ticket looks affordable but becomes expensive the next day. Airline prices are unpredictable and constantly changing because of demand, competition or even the day of the week itself.

The ticket prices for airlines constantly fluctuate, making it difficult for customers to decide on when to purchase a flight ticket. Customers will often book a flight and later discover a price lower than what they purchased it for, creating uncertainty and buyer's remorse when they want to book a flight in the future.

Existing solutions such as Google Flights, Skyscanner, and others attempt to address this issue, but their limited alerts, lack of real-time tracking, and insufficient cost transparency leave travelers without the guidance they truly need.

2.1.3 Product Vision

The goal is to develop an application that provides real-time updates on ticket prices and transparency on overall cost of the ticket and price trends to travellers as well as building confidence in their purchase. The platform should support user integration, enabling the creation of personalized profiles and a user dashboard where all tracked flights are conveniently saved. It should also offer a comparison between airlines to help users find the best deals. Additionally, travellers should be able to save their preferences for destinations, airlines, and specific travel dates for a more tailored experience. A subscription service can provide access to premium features, including advanced tracking options such as AI-powered pricing predictions and exclusive discounts on hotels and amenities.

2.2 Stakeholders and Users

Internal:

- **Project Manager** - Oversees the project timeline, ensures milestones are met, coordinates communication between team members, and aligns deliverables with client and academic requirements.
- **Developers Team** - Responsible for building the backend services, integrating airline APIs, implementing real-time tracking, and ensuring the application functions smoothly and securely.
- **UI/UX Designers Team** - Designs an intuitive and user-friendly interface, focusing on clear visualization of price trends, cost breakdowns, and seamless navigation for end-users.

External:

- **Travellers** - Individuals searching for flights who want transparent pricing, real-time notifications, and AI-driven recommendations to make informed booking decisions.
- **Travelling Agencies** - Third-party platforms that can integrate SkyTrackR's features into their systems or benefit from data insights to improve their offerings.
- **Airlines** - Provide real-time flight data, pricing, and policy information through APIs, enabling SKyTrackR to deliver accurate and up-to-date information to users.
- **Third-Party API Providers** - Offer additional travel-related services that can be integrated into SkyTrackR in future iterations to improve user experience.
- **Investors/Sponsors** - Provide the financial resources and strategic support necessary for the development and long-term sustainability of SkyTrackR. Their involvement helps fund essential components such as API integrations, AI model training, and infrastructure scaling. In return, they gain opportunities to participate in the platform's growth, future commercializations, and potential partnerships with travel agencies and airlines.

2.3 Project Scope

Included Project Features:

- **User Authentication:** Login/Register interfaces
- **Basic Dashboard:** Flight search and results display
- **Real-Time Data Updates:** Integration with airline APIs
- **Database Integration:** Data storage
- **UI/UX Design:** Clean, easy-to-use front-end
- **(Stretch Goal):** Simplified AI model for basic price trend prediction

Excluded Project Features:

- **B2B Web & Mobile App API**
- **Full AI Integration:** Advanced predictive modeling, data training, and testing
- **Additional Visual Enhancements:** UI polish and dynamic animations
- **B2B Offers, Deals, and Discounts:** Future collaboration after main features are done

2.4 System Risks

- **AI failures to predict prices:** The model may give wrong price forecasts causing users to miss better deals
- **Failure to get the API from the travelling agencies:** APIs from airline or travel agency may be unavailable, change, or block access, breaking daily checks
- **Inaccurate or missing historical pricing data:** Historical flight data may be incomplete or inaccurate, reading prediction quality
- **Data Drift:** Seasonal changes or sudden events make past data less reliable
- **Legal and Compliance Issues:** Scraping or storing user travel data without consent could break laws
- **Web scraping of ticket pricing data:** Causes increased API calls and greatly increases the server load
- **Excessive API calls:** Large amount of API calls leading to increased fees and hitting API rate limits.
- **Notification Failures:** Too many alerts for small price drops also missed or delayed alerts lead to lost trust if users discover cheaper prices elsewhere.

2.5 Operating Environment

Users can use SkyTrackR on the web browser. The web platform will be created with JavaScript, specifically using the React library. For user authentication when signing up or logging in, we will use Next.js which is a subset of React, to protect user's credentials. We will also use Next.js for integrating API for flights to save time from creating the API from scratch.

2.6 Functional Requirements

SkyTrackR must provide the following core functionalities to ensure travelers can search, track, and make informed booking decisions confidently.

2.6.1 User Story Interviews

User Interview

- **Name:** John Smith
- **Age:** 20
- **Occupation:** Student
- **Status:** Returning to university for a career, studying in Canada while still based in Europe
- **Financial situation:** Limited income, juggling part-time work and studies always **cost-conscious**
- **Travel frequency:** Must fly 2-3 times a year to Canada and back to his home country to visit his family

When you search for flights online, what information do you look for first and how do you sort your options to make a final decision (price, airline, etc.)?

"I want to see the **cheapest options** first, but I also want to **check the airline's reputation** and whether it's an economy or business seat. I don't think the lowest price is worth it if baggage isn't included or if there are flight transitions. This is why I usually **sort by price first**, then **filter by airline, class, and baggage option** in order to make my final choice."

How would you like to be notified when flight prices change? Do you prefer email or text messages? Would too many alerts annoy you?

“I would like to be emailed whenever the **price goes below a certain threshold**. I would also like to **control how often I get notified** and maybe only for big changes, not just ever small fluctuations like 2 dollars difference. That’s annoying.”

Have you ever searched for a flight and not been able to find details about baggage allowance or seat selection? How did that affect your book decision? Would you prefer to see baggage and seat fees included in the ticket price, or listed separately?

“Yes, that has happened to me a few times. When I couldn’t find clear information about baggage allowance or seat selection, I felt really uncertain and almost didn’t book the ticket. For me, baggage is important because I usually travel with books, a laptop, and study materials. If I don’t know whether it’s included, I have to assume I’ll be paying extra — which can make the flight much more expensive than it first looks. I’d much rather **see baggage and seat fees included in the ticket price upfront**. That way I can compare flights properly and avoid any surprises at the checkout.”

Would you like to create an account or log in to save your flight searches, watchlists, or preferences, or do you prefer using the system without an account?

“I want to save my favorite flights and preferences so I don’t have to search the same options every time, but I also want login and registrations to be super quick. So I want it to **remember my notification settings and preferred airlines** across sessions. I also want to **log in on multiple devices**.”

If you were willing to pay for extra features, what kind of features would that be?

“Since I’m travelling for studying, flexibility is the most important extra. I’d pay a bit more if I could **change dates without big penalties**. And if the price is reasonable, I’d pay for **extra baggage** because I need to bring a lot of things.”

Would you need to see how confident the AI is or would a simple recommendation be enough?

“I would definitely want to see the confidence level. A simple “buy now” or “wait” isn’t enough for me, because I need to understand the risk of it. If the AI says its **“80% price will drop”**, I might be willing to wait. But if it’s only 50-60%, I’d probably book right away. Since my budget is tight, I can’t afford to gamble too much, the confidence number helps me make safer decisions.”

Business Owner Interview

- **Name:** Tracy Lang
- **Age:** 47
- **Occupation:** Business owner
- **Status:** Primary decision-maker for project scope and funding
- **Financial situation:**

How do you plan to monetize this project?

“**Partnerships** with various **airlines and travel agencies, advertisements, referrals, and royalty**. For example, every successful sale of a flight ticket gives you a fixed percentage of commissions that we can negotiate. A big one is our **user subscription service** for the extra features, especially the AI price prediction.”

Who are the competitors for this system and how would you like to differentiate from those systems?

“As of now, we have Expedia, Skyscanner, Google Flight and many other companies or services that perform the same purpose. One key difference is the use of AI to **predict the price of future tickets including the total cost** which other competitors do not have.”

With AI becoming increasingly prevalent, how would you want to incorporate AI into this project?

"I'd like to implement AI by utilizing its decision making capabilities using it to **smartly predict and track prices**, maybe also providing the users with a chatbot or AI enabled search which can easily provide users with potential trip destinations."

If flight alerts failed or prices were misleading, how would you rebuild user trust?

"If flight alerts failed or the prices turned out to be misleading, the first priority would be honesty and transparency. I'd notify users immediately, explain what went wrong and apologize. More importantly, I'd **show users that we're improving the system**, for example by sharing updates on how accuracy is being increased."

What kinds of reports or dashboards should the system provide so you can monitor active users, alerts sent, and premium conversions?

"I want an administrative dashboard that tracks **active users, number of alerts sent, user retention**, and number of **subscription accounts**. I also want to monitor platform performance like **how long each page loads for the user**."

2.6.2 Core Functionalities

User Accounts and Authentication

- Register, log in, and manage personal profiles securely.
- Maintain user sessions and allow preference updates.

Flight Search and Comparison

- Search flights by route, travel dates, and passenger details.
- Filter and sort results by price, airline, duration, or class.
- Display full cost breakdowns, including baggage fees, seat selection, and taxes.

Price Tracking and Alerts

- Add flights or routes to a personal watchlist.
- Continuously update flight prices through airline API integration.
- Notify users of significant price drops or changes in real-time.

AI Price Prediction

- Analyze historical pricing data to estimate future trends.
- Provide confidence levels and “buy now” or “wait” recommendations.

User Dashboard

- Display all tracked flights with updated prices in one place.
- Visualize price trends with simple interactive charts.
- Personalize future search results based on user preferences.

Notifications

- Send email and in-app alerts for price changes and recommendations.
- Allow users to customize notification types and frequency.

Data Integration and Storage

- Retrieve real-time flight and pricing data through third-party APIs.
- Securely store user profiles, searches, watchlists, and price history.
- Refresh flight data periodically or on-demand.

Administrative Functions

- Provide an admin panel for monitoring system status and managing users.
- Log errors and track API performance for troubleshooting.
- Dashboard for administrations to track the revenue, active users and number of alerts sent.

2.7 Nonfunctional Requirements

1. Usability (API, UI)

- Minimal layout
- Less buttons to navigate
- Reduced bugs and crashes

2. Performance

- Ensures loading page satisfy SEO Ranking and ensure URLs are SEO-friendly, clean and descriptive
- Speed of data that is gathered from APIs
- Flight search results must load in few seconds
- System must handle 10k users at the same time without noticeable slowdowns

3. Security

- Only store essential information and avoid requesting sensitive data from users.
- All data transfers encrypted by using HTTPS
- User accounts are always protected by 2 factor authentication

4. Privacy

- Only necessary personal information is stored such as their name, email, and personalized site data.
- No Third-Party sharing without consent
- Provide full functional requirements for the users.

5. Maintainability

- Codebase will follow modular design principles to support future feature expansion

2.8 UI/UX Interface Mock-ups

2.8.1 Home Page

SkyTrackR

Flights CAD Pricing Login

Fly Smart, Fly Cheap

Please search for your flight below:

From where? Where to? Depart - Return 1 adult Search

Popular Destinations

Toronto → Hawaii
\$375+
[Book Now →](#)

Toronto → Tokyo
\$365+
[Book Now →](#)

Toronto → Machu Picchu
\$350+
[Book Now →](#)

SkyTrackR

Descriptive line about what your company does.

Features	Learn more	Support
Core features	Blog	Contact
Pro experience	Case studies	Support
Integrations	Customer stories	Legal
	Best practices	

2.8.2 Search Page

SkyTrackR

Flights CAD Pricing Login

YYZ ORD Depart - Return 1 adult Search

Max price Shops Times Airlines Seat class More

Filters

Deals Best value Members deals

Your Budget Less than \$150 \$150 - \$250 \$250 - \$350 \$500 - \$1000 Show more

Rating 1 Star 2 Stars 3 Stars 4 Stars 5 Stars

Airlines	Flight Duration	Departure Time	Arrival Time	Stops	Price	Type
Hawaiian Airlines	16h 45m	7:00AM	4:15PM	1 stop 2h 45m in HNL	\$624	round trip
Japan Airlines	18h 22m	7:35 AM	12:15 PM	1 stop 50m in HKG	\$663	round trip
Hawaiian Airlines	18h 04m	8:20 AM	2:15 PM	1 stop 1h 50m in PVG	\$690	round trip
Delta	18h 52m	9:47 AM	4:15 PM	1 stop 4h 05m in ICN	\$756	round trip
Hawaiian Airlines	16h 05m	11:15 AM	7:45 PM	Nonstop	\$837	round trip
Hawaiian Airlines	15h 45m	10:55 AM	8:15 PM	Nonstop	\$839	round trip
Delta	18h 20m	1:00 PM	9:15 PM	1 stop 4h 45m in ICN	\$886	round trip
EVA Air	18h 55m	2:15 PM	11:15 PM	1 stop 2h 45m in HNL	\$913	round trip
Korean Air	22h 37m	6:45 PM	7:15 PM	2 stops Arrives next day	\$989	round trip
Japan Airlines	20h 23m	7:00AM	4:15PM	2 stops Arrives next day	\$624	round trip
Japan Airlines	16h 45m	7:00AM	4:15PM	Nonstop Arrives next day	\$1,079	round trip
EVA Air	16h 10m	7:00AM	4:15PM	Nonstop	\$1,114	round trip
Korean Air	14h 37m	7:20 AM	1:15 PM	Nonstop value	\$1,347	round trip
Air France	19h 45m	9:00AM	1:15PM	1 stop 5h 45m in HNL	\$1,392	round trip
Emirates	16h 55m	7:10AM	4:35PM	1 stop 2h 45m in HKG	\$1,403	round trip

AI Prediction

Price grid (flexible dates)

	2/12	2/13	2/14	2/15	2/16
3/7	\$837	\$592	\$592	\$1,308	\$837
3/8	\$837	\$592	\$592	\$837	\$1,308
3/9	\$624	\$592	\$624	\$592	\$592
3/10	\$1,308	\$624	\$624	\$837	\$837
3/11	\$592	\$624	\$1,308	\$837	\$624

Price history

Price rating **Buy soon**

We recommend booking soon. The average cost of this flight is \$750, but could rise 18% to \$885 in two weeks.

Tripma analyzes thousands of flights, prices, and trends to ensure you get the best deal.

SkyTrackR
Descriptive line about what your company does.

Social media icons: Instagram, LinkedIn, Twitter

Features Core features Pro experience Integrations

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Support Contact Support Legal

2.8.3 Ticket Details Page

SkyTrackR

Flights CAD Pricing Login

YYZ ORD Depart - Return 1 adult Search

Max price Shops Times Airlines Seat class Round trip More

Ticket Details

Toronto, CA - Tokyo, Japan (Round Trip)

Price: \$365

Airline: Air Japan

Flight Number: JP 892

Aircraft: Airbus A350

Cabin Class: Business

Flight Duration: 8 hours, 32 minutes

Number of Stops: 1

Book Now



AI Prediction

Price grid (flexible dates)

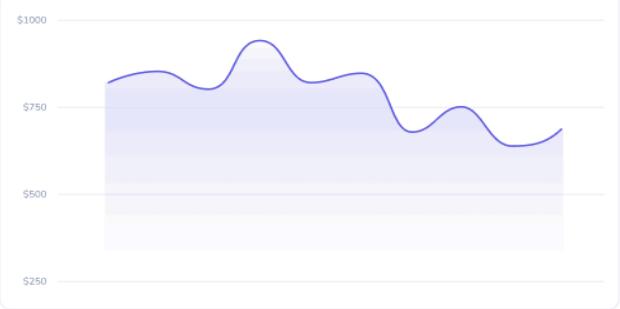
	2/12	2/13	2/14	2/15	2/16
3/7	\$837	\$592	\$592	\$1,308	\$837
3/8	\$837	\$592	\$592	\$837	\$1,308
3/9	\$624	\$592	\$624	\$592	\$592
3/10	\$1,308	\$624	\$624	\$837	\$837

Price rating **Buy soon**

We recommend booking soon. The average cost of this flight is \$750, but could rise 18% to \$885 in two weeks.

SkyTrackR analyzes thousands of flights, prices, and trends to ensure you get the best deal.

Price Prediction



SkyTrackR

Descriptive line about what your company does.

[Instagram](#) [LinkedIn](#) [Twitter](#)

Features

Core features Pro experience Integrations

Learn more

Blog Case studies Customer stories Best practices

Support

Contact Support Legal

2.8.4 Customer Details Page

 SkyTrackR

Flights CAD Pricing Login

Passenger information

Enter the required information for each traveler and be sure that it exactly matches the government-issued ID presented at the airport.

Passenger 1 (Adult)

First name*	Middle (Optional)	Last name*
Suffix	Date of birth*	MM/DD/YY
Email address*	Phone number*	
Redress number	Known traveller number*	

Emergency contact information

Same as Passenger 1

First name*	Last name*
Email address*	Phone number*

Bag information

Each passenger is allowed one free carry-on bag and one personal item. First checked bag for each passenger is also free. Second bag check fees are waived for loyalty program members. See the [full bag policy](#).

Passenger 1 Checked bags
First Last - 1 +

Continue to payment **Select seats**



*Dimensions include handles and wheels

SkyTrackR
Descriptive line about what your company does.



Features	Learn more	Support
Core features	Blog	Contact
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	Best practices	

2.8.5 Payment Method Page

 SkyTrackR

Flights CAD 🇨🇦 Pricing Login

Payment method

Select a payment method below. SkyTrackR processes your payment securely with end-to-end encryption.

Credit card G Google Pay Apple pay P Paypal C Crypto

Credit card details

Billing address is same as Passenger 1

Name on card

Card number

Expiration date CCV MM/YY

Create an account

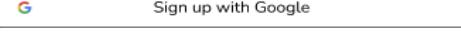
SkyTrackR is free to use as a guest, but if you create an account today, you can save and view flights, manage your trips, earn rewards, and more.

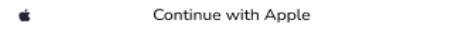
Save card and create account for later

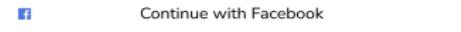
Email address or phone number

Password

or

 Sign up with Google

 Continue with Apple

 Continue with Facebook

Cancellation policy

This flight has a flexible cancellation policy. If you cancel or change your flight up to 30 days before the departure date, you are eligible for a free refund. All flights booked on Tripma are backed by our satisfaction guarantee, however cancellation policies vary by airline. See the [full cancellation policy](#) for this flight.

Confirm payment Cancel



 Japan Airlines FIG4312	16h 45m (+1d) 7:00 AM - 4:15 PM 2h 45m in HNL
 Japan Airlines FIG4312	16h 45m (+1d) 7:00 AM - 4:15 PM 2h 45m in HNL

Subtotal \$503
Taxes and Fees \$121
Total \$624

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Integrations	Customer stories	Legal
	Best practices	

Home Page

- Displays flight search bar.
- Advertises top 3 most popular / best deal tickets.
- Basic navigation bar.
- Future expansion could include advertisements to partnered airlines / travel agencies.

Search Page

- Displays a list of flights that the customer searched for.
- Flight watchlist add/removal for each ticket listing (logged in feature)
- Included general AI price prediction.
- Displays basic details like flight duration, direct or transfer flight, and price.

Ticket Details

- Displays ticket information.
- Allows customers to start the booking process
- Displays an AI prediction and recommendation of future prices for the specific flight
- Flight watchlist add/removal (logged in feature)

Customer Detail Page

- Displays form.
- Allow customers to fill out their personal information including emergency contact
- Gives the option to add amount of checked bags for the customer
- Gives the option for customer to select their seats

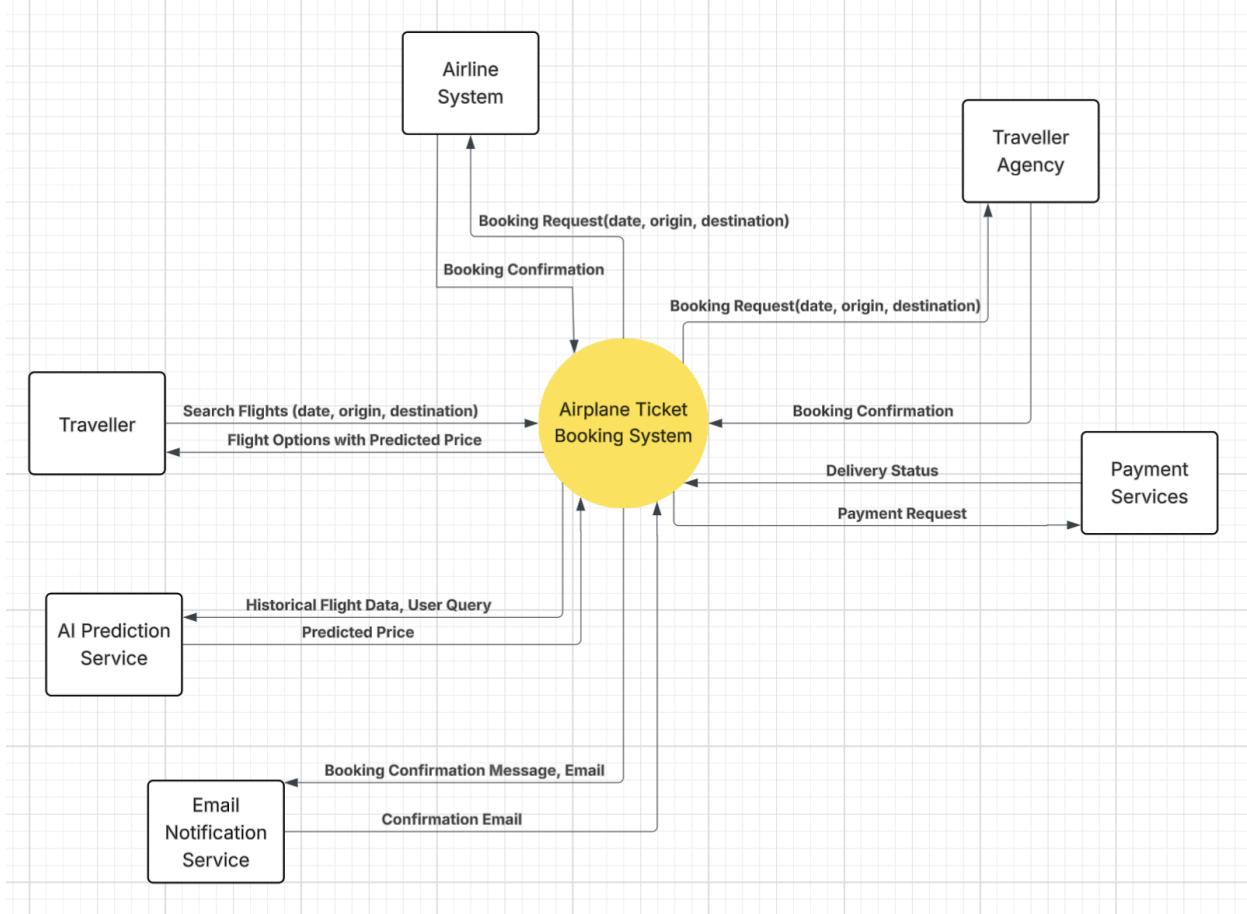
Payment Method Page

- Display multiple payment options, flight summary, and hotel recommendations.
- Ensuring secure transactions and improved user convenience.

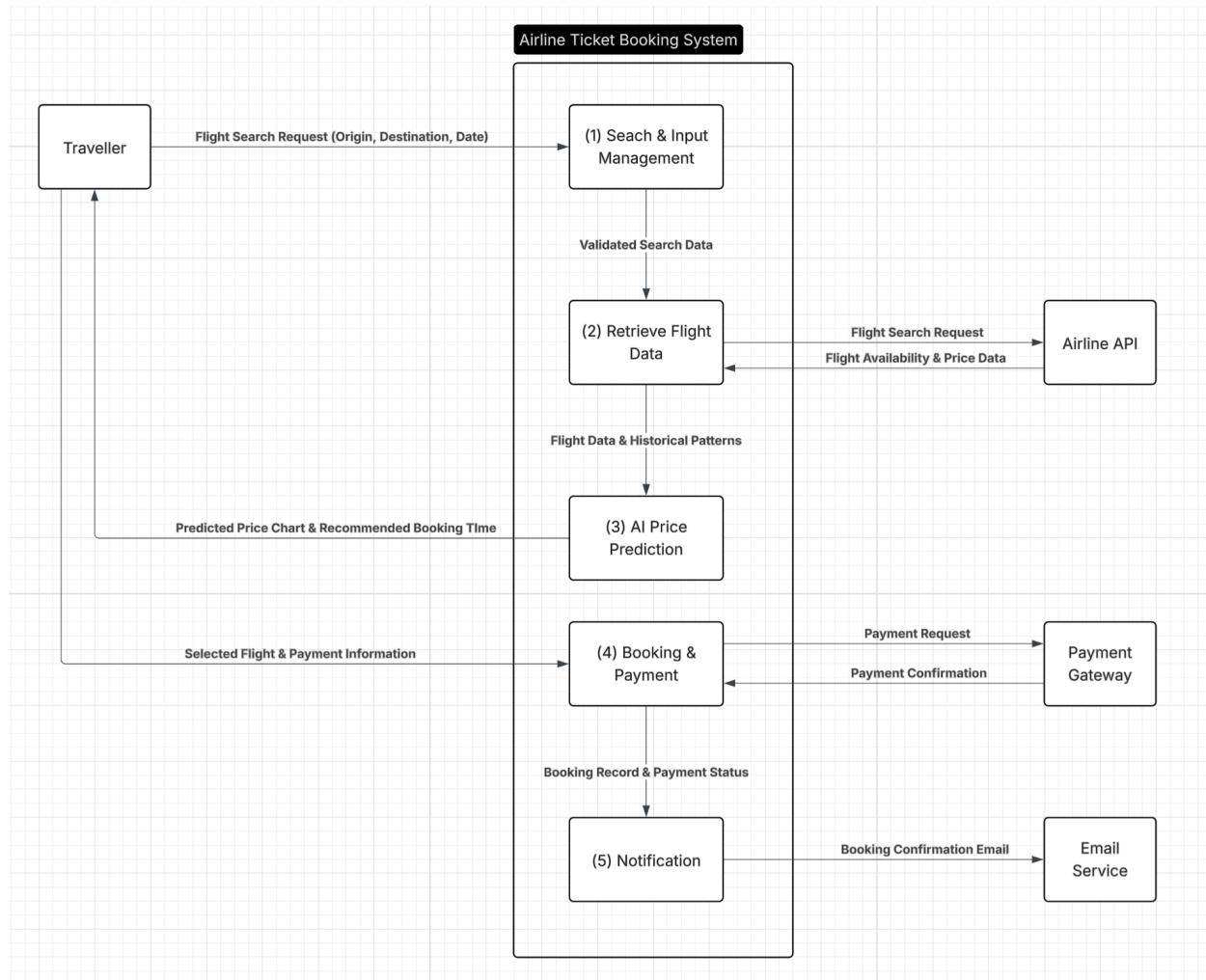
Section 3

3.1 Data Flow Diagrams

Context Diagram (level 0):



Data Flow Diagram (level 1):



3.2 User Stories and related Use Case Scenarios

User Story 1: “As a traveler that has already booked a flight, I’d like to view my ordered tickets so that I can take note of the flight details.”

Use Case Name	Query user tickets
Triggering Event	User request to view ordered tickets
Brief Description	User wants to view ordered tickets so that user can take note of the flight details
Actors	User

Related Use Cases			
Preconditions	User is logged in and opened the profile page		
Post Conditions	Ordered tickets have successfully displayed.		
Flow of activities	Actor		System
	1.	Request to view ordered tickets.	Display itinerary number entry form
	2.	Enter itinerary number	Validate itinerary number data Display ordered tickets details
	3.	Confirm	
Exception Conditions	User wants to cancel the project		

User Story 2: “As a user, I’d like to add a specific flight to my watchlist so I can easily keep track of the price.”

Use Case Name	Add to watchlist	
Triggering Event	User requests to add to their watchlists	
Brief Description	User wants to add a flight to their watchlist so they can keep track of the price changes.	
Actors	User	
Related Use Cases		
Preconditions	User is logged in and on ticket details or search page	
Post Conditions	User’s watchlist is updated with the new flight	
Flow of activities	Actor	System

	1.	User requests to add Flight to watchlist.	Displays the user's watchlists
	2.	Selects which watchlist to use.	Adds the flight to the watchlist. Displays alert notifying the watchlist is updated.
	3.	Confirms	Watchlist is saved to the data source.
Exception Conditions	User wishes to cancel process		

User Story 3: “As a user, I'd like to search and select a flight so I can view the flight details”

Use Case Name	Query flights		
Triggering Event	User wants to search for a flight		
Brief Description	User wants to search and select a flight to view the flight details.		
Actors	User		
Related Use Cases	BookFlight		
Preconditions	User has the website opened on the homepage		
Post Conditions	The flight ticket details page will be displayed		
Flow of activities	Actor	System	
	1.	User enters flight destination, source, departure date, and passenger amount.	Displays a list of flights with the criteria that the user searched for.
	2.	The user selects a flight.	Displays flight information.

Exception Conditions	User wants to exit searching process
-----------------------------	--------------------------------------

User Story 4: "As an admin, I'd like to cancel a customer's ticket so that I can refund a customer."

Use Case Name	Cancel Ticket Order		
Triggering Event			
Brief Description	User wants to cancel flight ticket order due to specified reason (e.g. wrong purchase)		
Actors			
Related Use Cases	RefundTicketOrder		
Preconditions	User is logged in and opened the order page		
Post Conditions			
Flow of activities	Actor	System	
	1.	Admin enters the ticket id.	Displays ticket information.
	2.	Admin selects to cancel the flight ticket.	Requests confirmation from the user.
	3.	Admin confirms	Ticket is deleted from the data source
Exception Conditions			

User Story 5: "As the site manager, I'd like to add a new airline to the system to give travelers a new traveling option"

Use Case Name	Add Airline
Triggering Event	Site Manager selects the option to add a new airline.

Brief Description	The Site Manager enters airline information into the system. The system validates information and saves a new airline record.		
Actors	Site Manager (Admin)		
Related Use Cases	Manage Airlines		
Preconditions	Admin is logged into the system and is ready to add an airline to the system.		
Post Conditions	A new airline is added into the system and is available for selection.		
Flow of activities	Actor		System
	1.	Admin selects add Airline	Prompts for airline details
	2.	Enters Airline details (name, code, country, details)	Prompts for confirmation
	3.	Confirms	Creates system Airline ID Saves Airline record into database
Exception Conditions	Admin wants to cancel adding Airline		

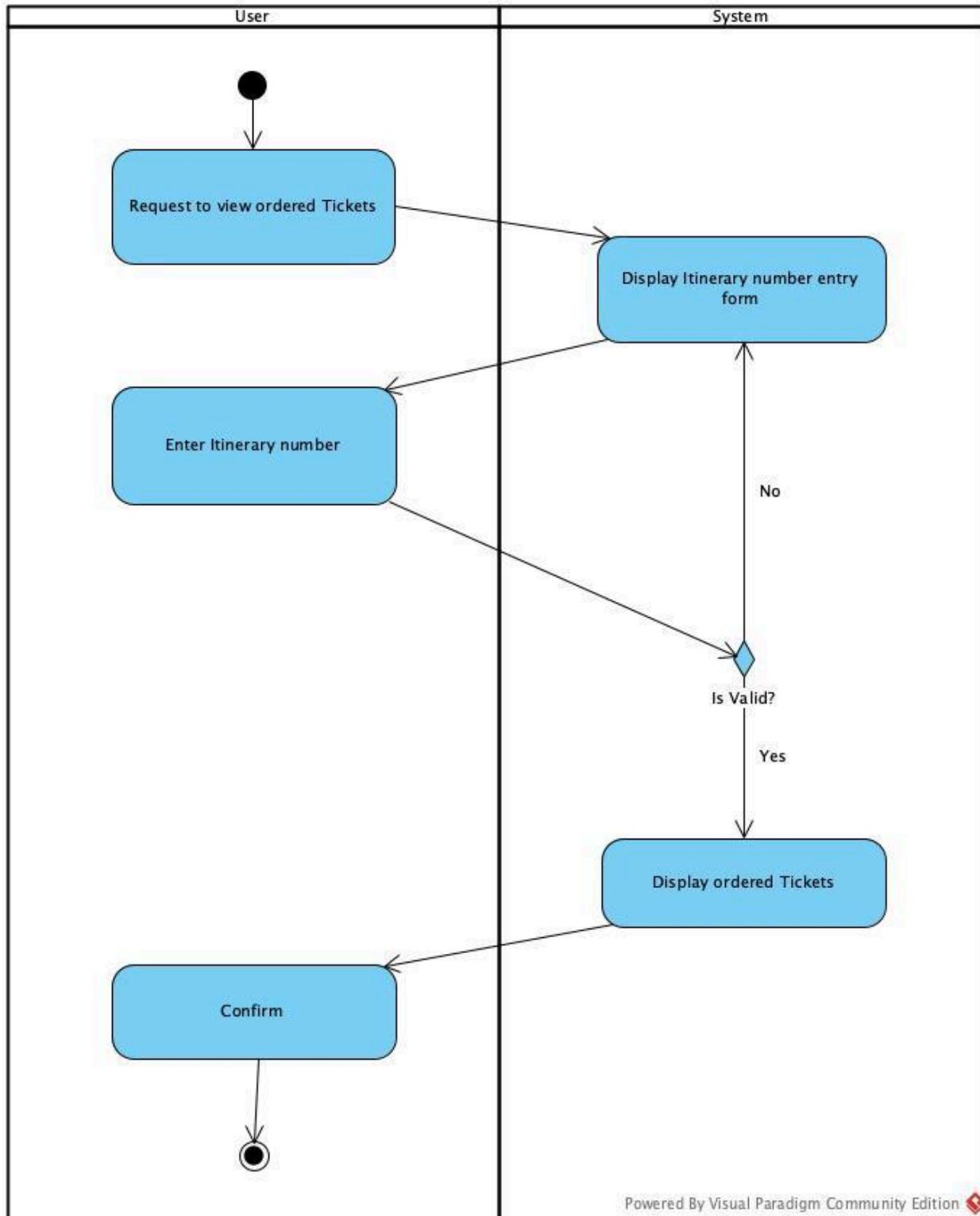
User Story 6: “As a user, I’d like to purchase a ticket, so I could travel”

Use Case Name	Purchase a ticket
Triggering Event	User wants to purchase a ticket
Brief Description	User wants to purchase a ticket to travel.
Actors	User
Related Use Cases	Query flights

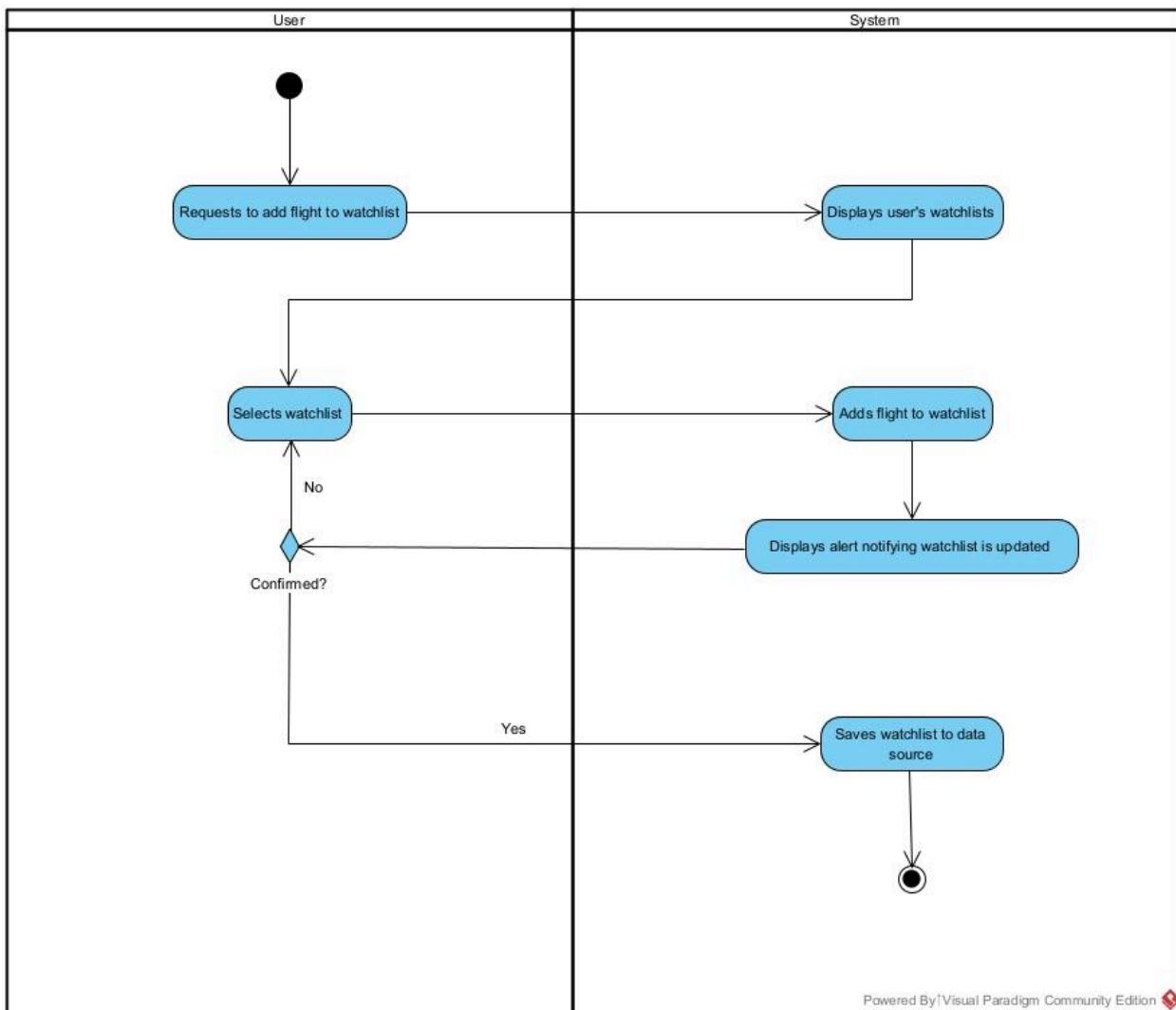
Preconditions	User has selected a flight and is on the ticket details page		
Post Conditions	The flight ticket be purchased for the user.		
Flow of activities	Actor	System	
	1.	User requests to book a flight	Displays a customer details entry form.
	2.	The user enters their first name, last name, suffix, phone number, redress number, traveler number, date of birth, email, emergency contact, and baggage number	Displays the payment method form
	3.	User enters their name, card number, and card expiration date.	Validates payment details. Prompts user confirmation.
	4.	confirms	Ticket is saved to the data source
Exception Conditions	User wants to cancel booking process.		

3.3 Activity Diagrams

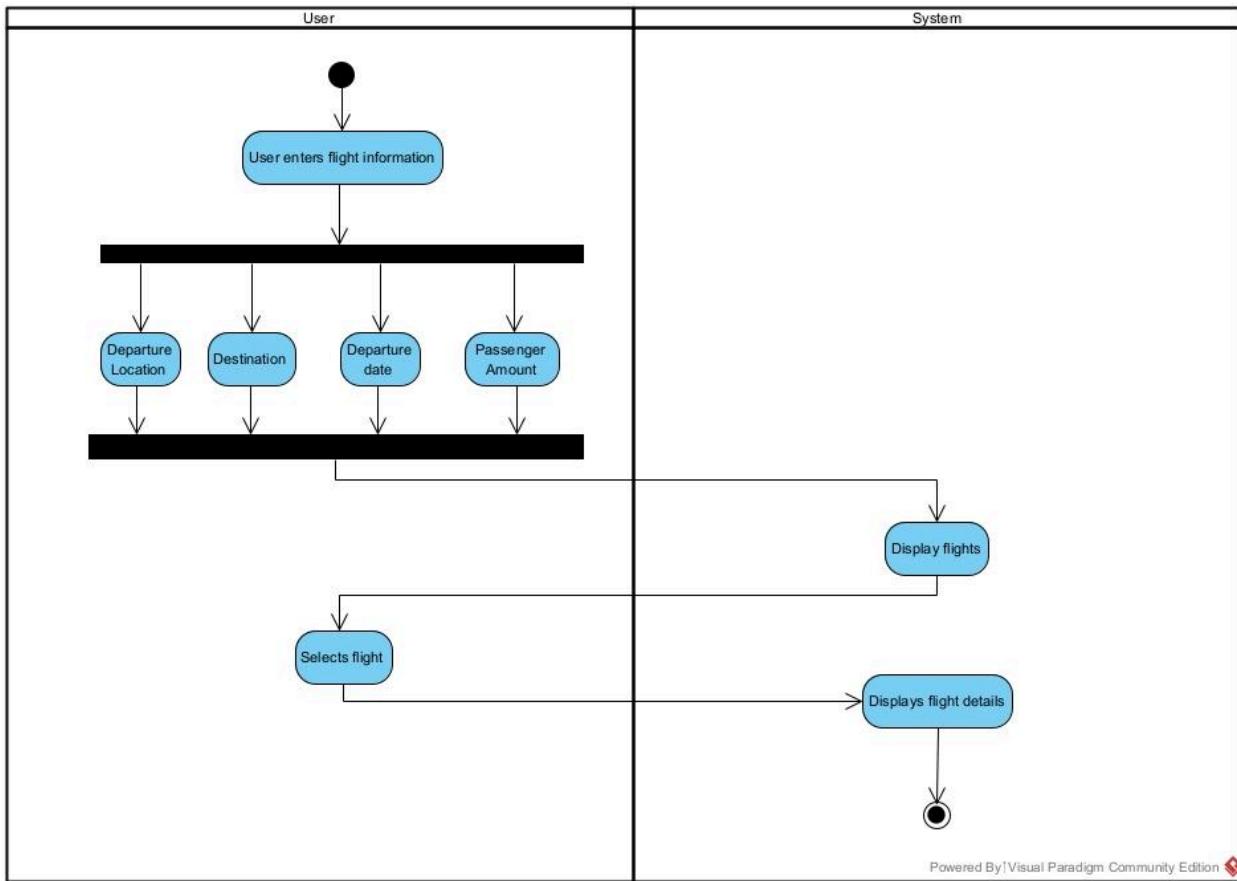
User Story 1:

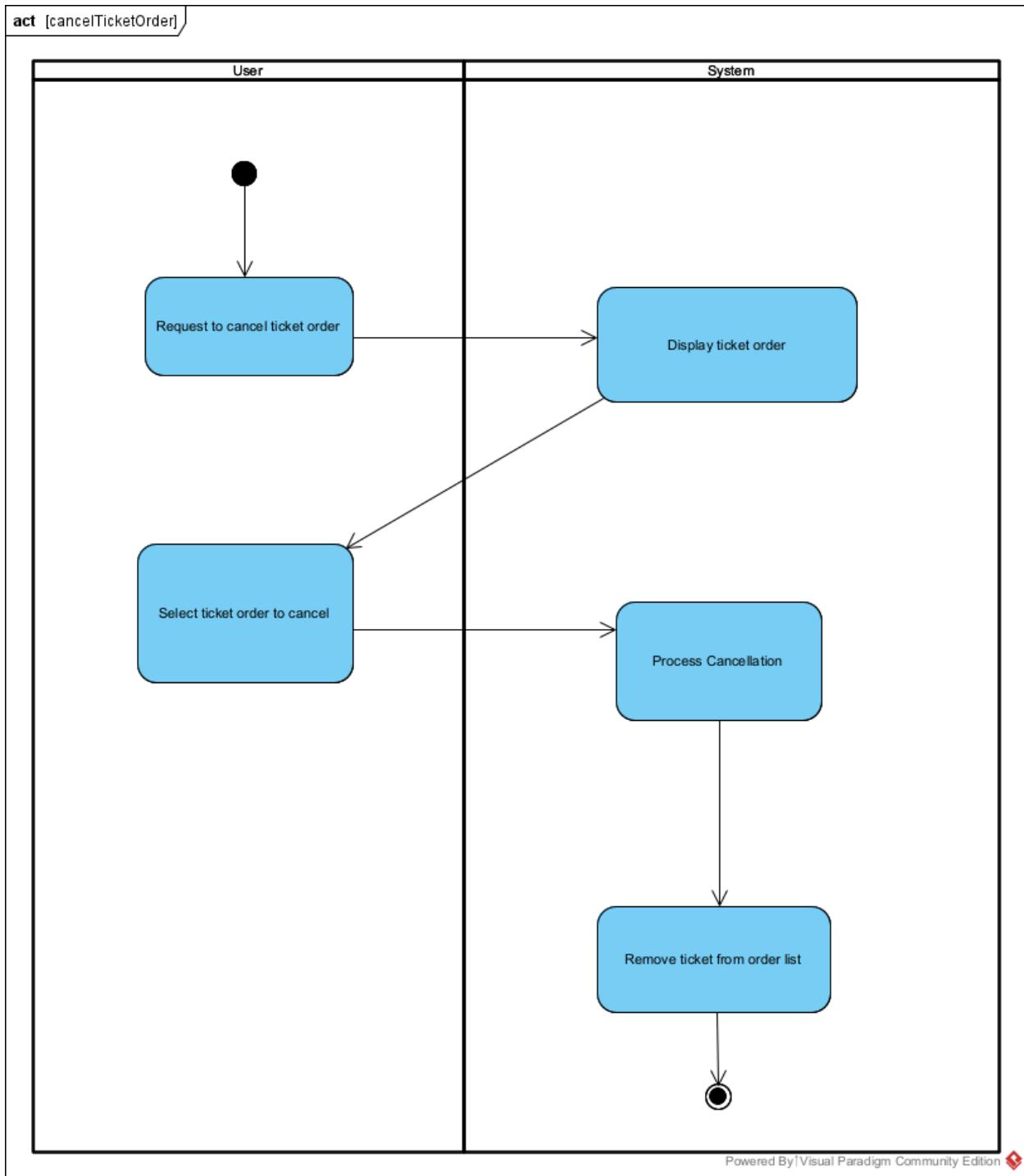


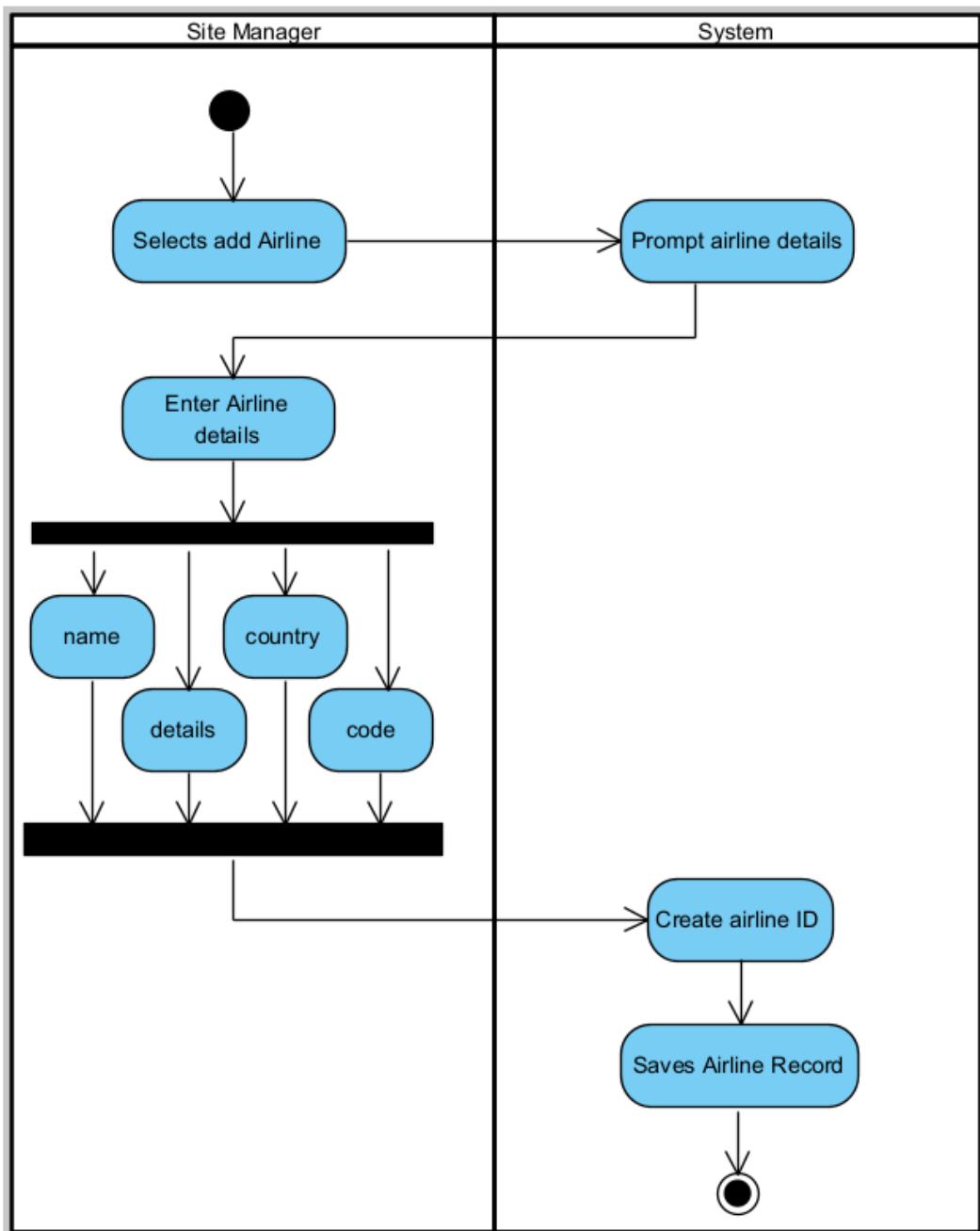
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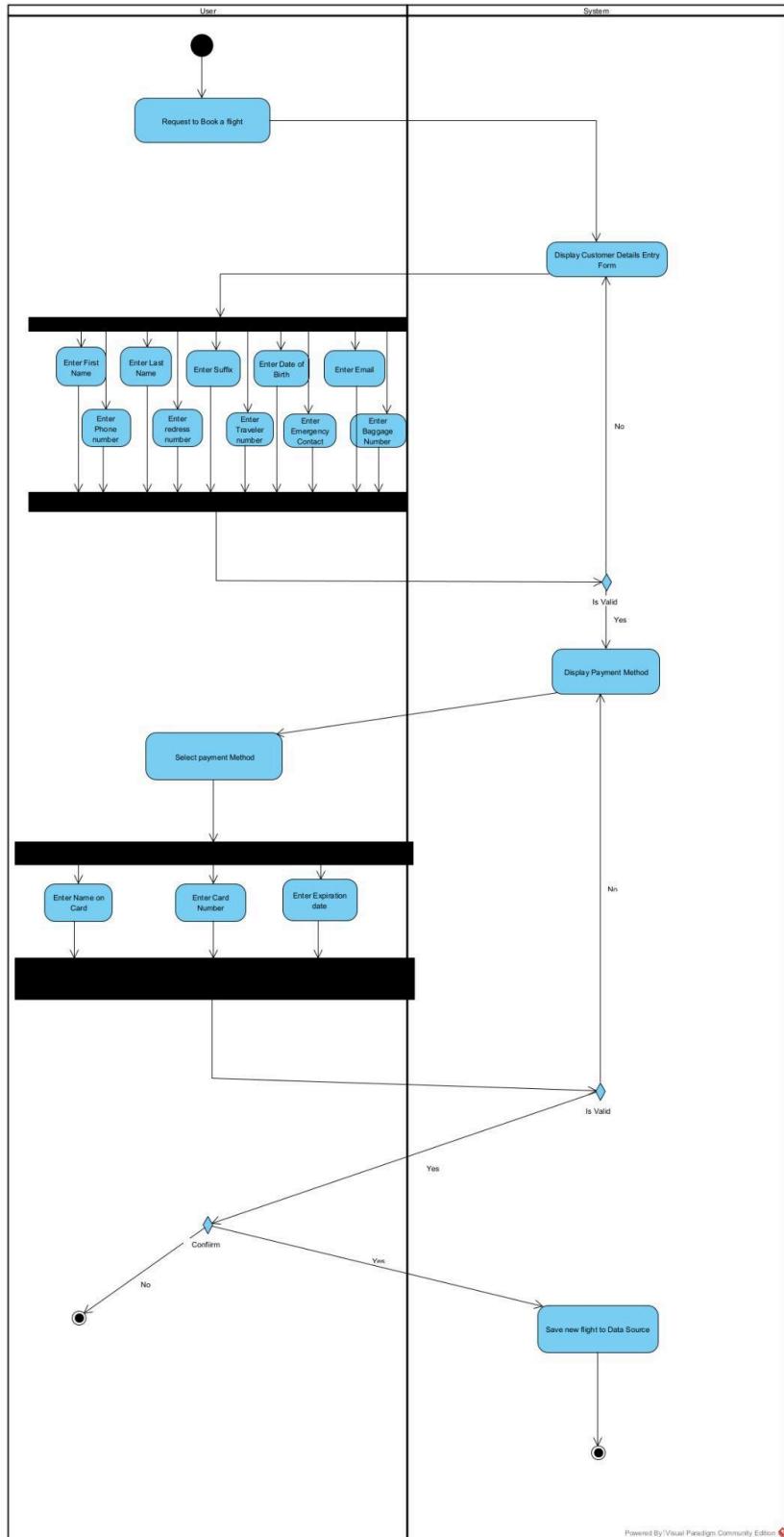
User Story 2:

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User Story 3:

User Story 4:

User Story 5:**User Story 6:**



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3.4 Business Rules

Business Rule #	Description	Activity Diagram	Related UCS	UI Mock-up
BR1	Query user tickets	AD1	UC1	
BR2	Query flight	AD2	UC2	UI 2.8.1, 2.8.2, 2.8.3
BR3	Add to watchlist	AD3	UC3	UI 2.8.2, 2.8.3
BR4	Cancel ticket order	AD4	UC3	UI 2.7.4
BR5	Add Airline	AD5	UC4	
BR6	Purchase ticket	AD6	UC6	UI 2.8.3, 2.8.4, 2.8.5

Section 4 – Domain Class

Section 5 – Database

Section 6 – Project Management

6.1 Work Breakdown Structure

6.2 Milestones & Acceptance Criteria

Section 7 – Product Backlog & Implementation Schedule

Section 8 – Client/Faculty Sign-off

Section 9 – References

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