

# Solution Challenge






AI for a better tomorrow







## Team Details

- Team name: BusyCoder
- Team leader name: An-Syu Li, Yin-Fan Chao
- Problem Statement: Tourism Recommender & Budget Saving Systems: TravelPlan AI

## Brief about your solution

-  **Custom Itinerary**: Personalized travel plans based on user preferences.
-  **Cost Estimates**: Real-time pricing for meals, lodging, transport, and activities via **Gemini API**.
-  **Eco-friendly Options**: Carbon footprint analysis for sustainable travel choices.
-  **User Interface**: Simple, intuitive design with **Flask**, **HTML/CSS**, and **JavaScript**.
-  **Future Plans**: User accounts, PDF downloads, and expanded travel options.

## 1. How different is it from any of the other existing ideas?

-  **Personalization:** Offers highly tailored itineraries based on user preferences.
-  **Real-Time Data:** Uses **Gemini API** for up-to-date pricing and travel options.
-  **Cost Efficiency:** Focuses on providing the most cost-effective travel solutions.
-  **Additional Feature:** PDF Download for Convenient Offline Use

## 2. How will it be able to solve the problem?



### **Saves Time:**

Quickly generates detailed itineraries with all travel components.



### **Informed Decisions:**

Helps users make smart choices with cost breakdowns and recommendations.



### **All-in-One Solution:**

Covers meals, lodging, transport, and activities in one platform.

### 3. USP of the proposed solution:



#### **Cost Optimization:**

Generates personalized itineraries for budget efficiency, covering costs for meals, lodging, transport, and activities.



#### **Real-Time Smart Recommendations:**






Uses Google Gemini API for up-to-date, user-specific suggestions, adjusting activities by interests.



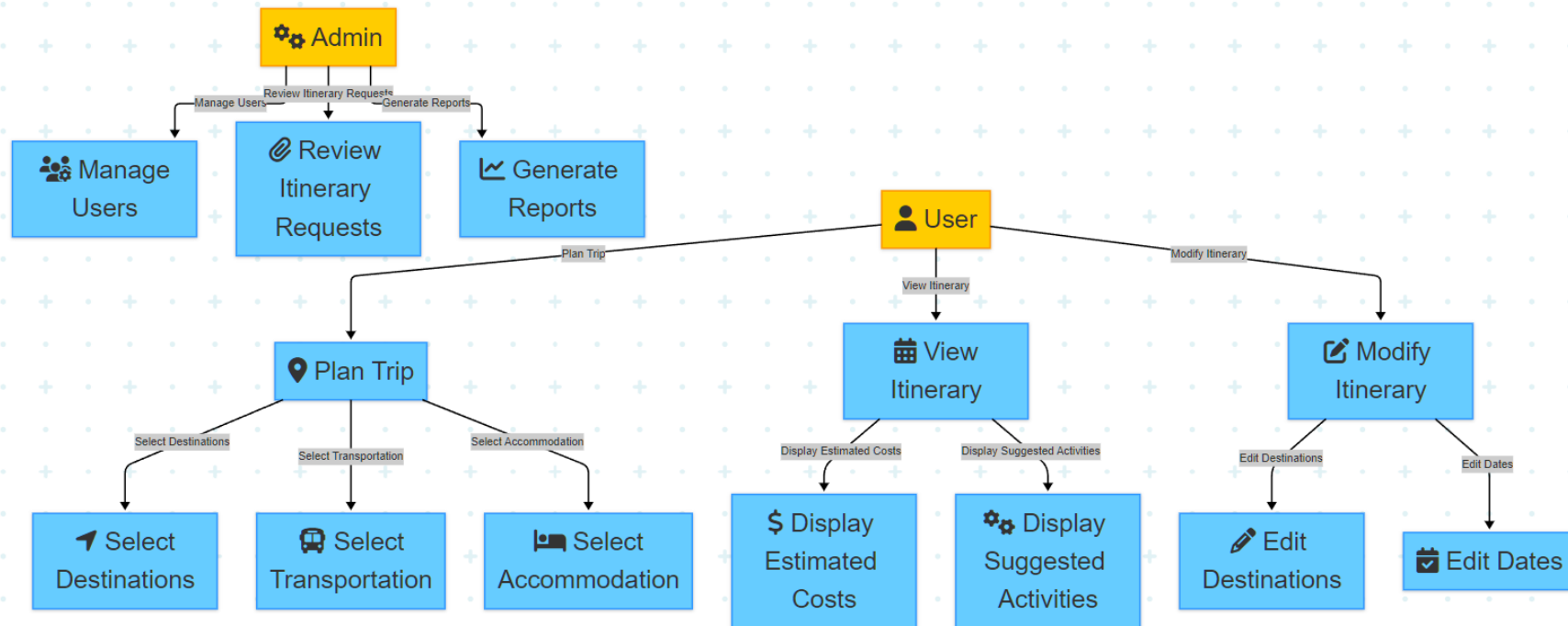
#### **Enhanced All-in-One Experience:**

Provides comprehensive planning with daily activities and budgets, downloadable as a PDF for offline use, minimizing platform switching.

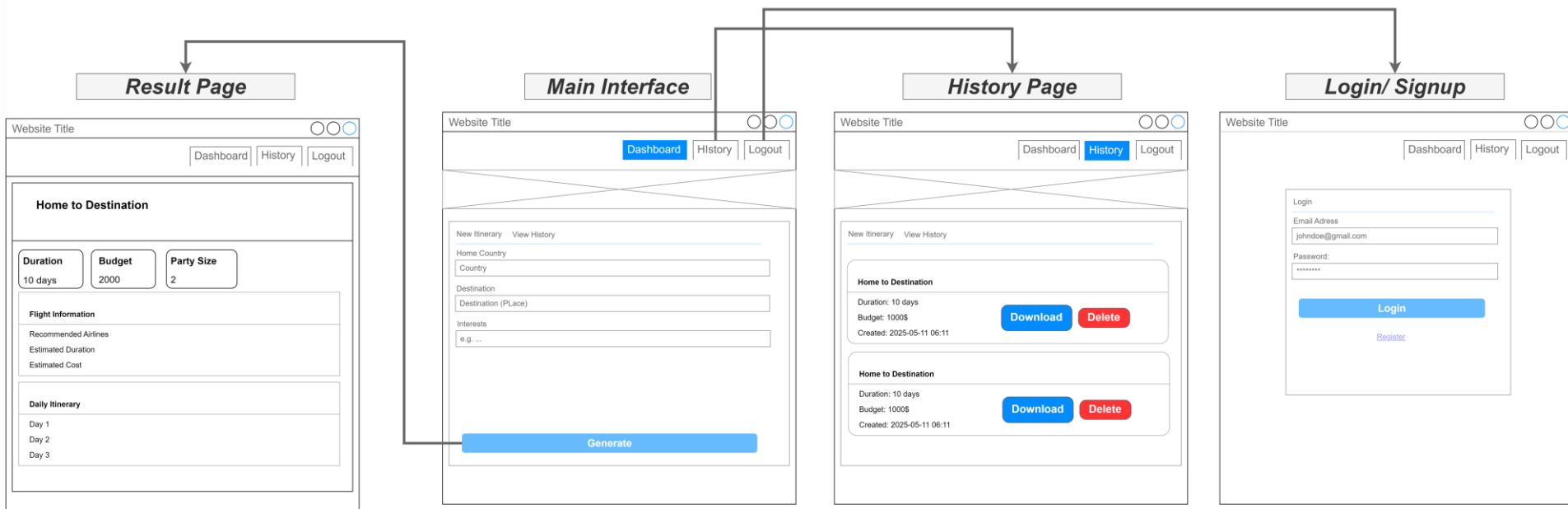
## List of features offered by the solution

-  **Personalized Itinerary:** Custom travel plans based on user preferences.
-  **Cost Estimation:** Real-time pricing for meals, lodging, transport, and activities.
-  **Real-Time Data Integration:** Uses **Gemini API** for up-to-date travel options.
-  **Accommodation Suggestions:** Recommends hotels and stays based on budget and location.
-  **Itinerary Download:** Option to download the itinerary as a PDF.

## Process flow diagram or Use-case diagram

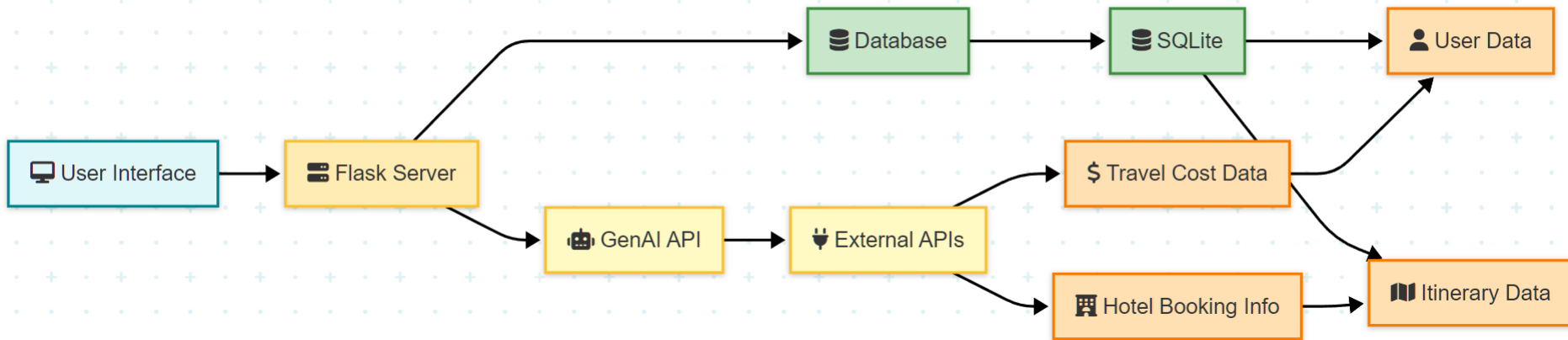


# Wireframes/Mock diagrams of the proposed solution





## Architecture diagram of the proposed solution




## Technologies to be used in the solution

(Mandatory to integrate Gemini APIs)

- **Flask:** Web framework for building the backend of the application.
- **Gemini API:** Real-time data integration for travel pricing, lodging, and activity suggestions.
- **SQLite:** Database for user account management and saving itineraries (future feature).
- **HTML/CSS/JavaScript:** Frontend technologies for creating the user interface.

## Snapshots of the prototype

 **TravelPlan AI**

Home Login Register

### Login


Sign in to access your travel itineraries

Email Address

Password

Login

Don't have an account? [Register](#)

 **TravelPlan AI**

Dashboard History Logout

Welcome, ss348774832@gmail.com

Create a new travel itinerary or view your saved ones.

Login successful!

[New Itinerary](#) [View History](#)

### Create Your Itinerary

Home Country:

Select your home country

Destination:

e.g., Paris, France

Duration (days):

e.g., 7

Budget:

e.g., \$2000

Party Size:


e.g., 1

Interests (comma separated):

e.g., museums, food, hiking, local culture

Generate Itinerary

# Snapshots of the prototype


 Dashboard History Logout

## Taiwan to Washington DC, US

Your personalized travel itinerary

|                            |                       |                        |  |
|----------------------------|-----------------------|------------------------|--|
| <b>Duration</b><br>10 days | <b>Budget</b><br>2000 | <b>Party Size</b><br>2 | <b>Time Difference</b><br>8 hours behind |
|----------------------------|-----------------------|------------------------|--|


**Interests**

 **Flight Information**

**Recommended Airlines:** [Delta](#), [United](#), [Korean Air](#)

**Estimated Duration:** Approximately 18-25 hours with layovers

**Estimated Cost:** \$1000

 **Travel Requirements**

**Visa Requirements:** Taiwanese citizens can travel to the United States without a visa for tourism or business stays of up to 90 days under the Visa Waiver Program (VWP). An ESTA (Electronic System for Travel Authorization) is required before departure [12, 33]. If the stay exceeds 90 days, or is for purposes other than tourism or business, a visa is required [13].


**Local Customs:** Washington, D.C. is a diverse city with a mix of political, historical, and cultural influences [34, 36]. Be aware of the city's history and culture, including its significant role in Black history [34]. Tipping is customary in restaurants and for services. The city is generally formal due to its political nature, but casual attire is acceptable for sightseeing [32].

### Daily Itinerary

**Day 1 - Monday**

**Morning** Arrive at Dulles International Airport (IAD), take the Metro to your accommodation.  
📍 *Dulles Airport, Washington DC*  
Transportation

\$6

 Dashboard History Logout

New Itinerary View History

### Your Itinerary History

**Taiwan to Washington DC, US**  
Duration: 10 days | Budget: 2000  
Created: 2025-05-15 07:34

[Download PDF](#) [Delete](#)

**Taiwan to Washington DC, US**  
Duration: 10 days | Budget: 2000  
Created: 2025-05-15 07:09

[Download PDF](#) [Delete](#)

**Taiwan to Atlanta, US**  
Duration: 10 days | Budget: 10000  
Created: 2025-05-15 06:11

[Download PDF](#) [Delete](#)

**Taiwan to Kanto, Japan**  
Duration: 10 days | Budget: 20000  
Created: 2025-05-15 06:08

[Download PDF](#) [Delete](#)

## Additional Details/Future Development (if any)

- **Carbon Footprint Estimate:**

For environmental concerns and to find solutions to cut back.

- **Added Must-Visit Cities Feature:**

Ensure the system mandatorily generates a plan including the city or attraction specified by the user.

- **Add Multi-Country Travel Planning Feature:**

Enable the system to generate multi-country travel plans.

- **Added Coordinates Information:**

Easier for users to track locations

- **Ratings and Reviews from Online Platforms or Forums:**

to give users a basic idea of the destinations and suggestions.

- **Historical Itinerary Adjustment:**

Customizes travel plans for registered users by leveraging their historical itinerary data.

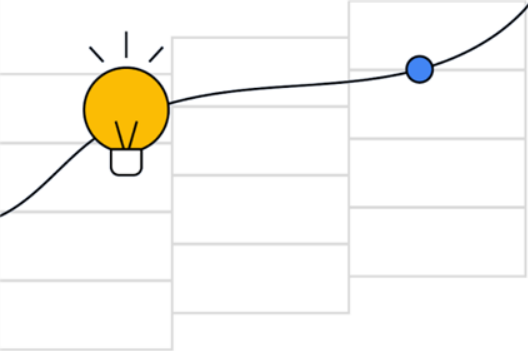
## Provide links to your:

1. Demo video link (3 minutes):

<https://www.youtube.com/watch?v=8zmszxsehj4&feature=youtu.be>

2. Working prototype link:

<https://solutionchallengetravelplannervalidkey-849435182118.asia-east1.run.app/>



# Solution Challenge

Thank you

