

Korean Trip Planner

Machine Learning 2

Choe SunA



Persona

Persona Name: Jane Lee

Age: 25

Occupation: Marketing Manager

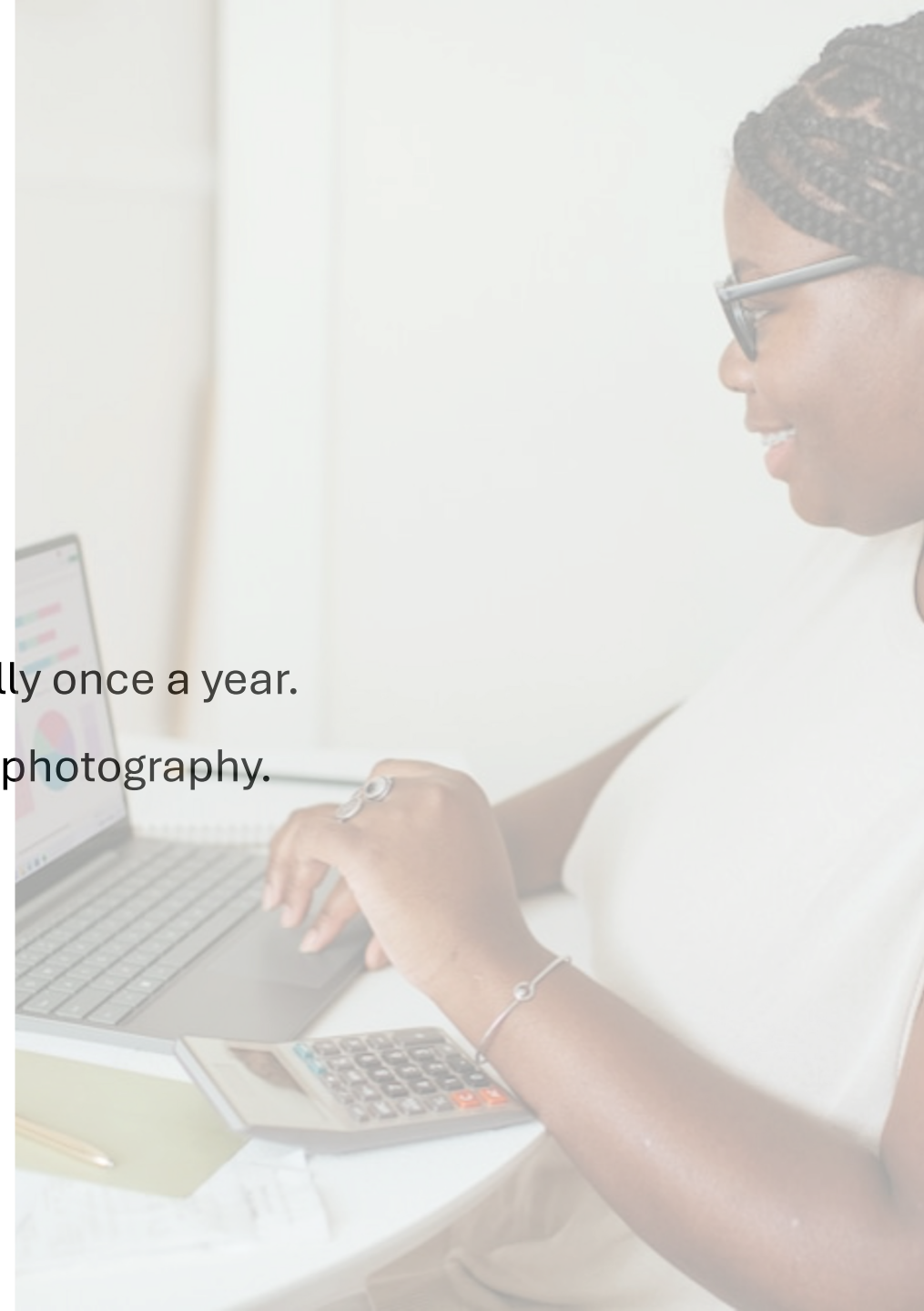
Location: Los Angeles, CA

Travel Experience: Moderate; enjoys traveling internationally once a year.

Interests: Cultural experiences, local cuisine, sightseeing, photography.

Behavior:

- Frequently uses travel blogs and forums for trip planning.
- Prefers personalized and well-organized travel itineraries.
- Values efficient use of time and minimizing travel stress.



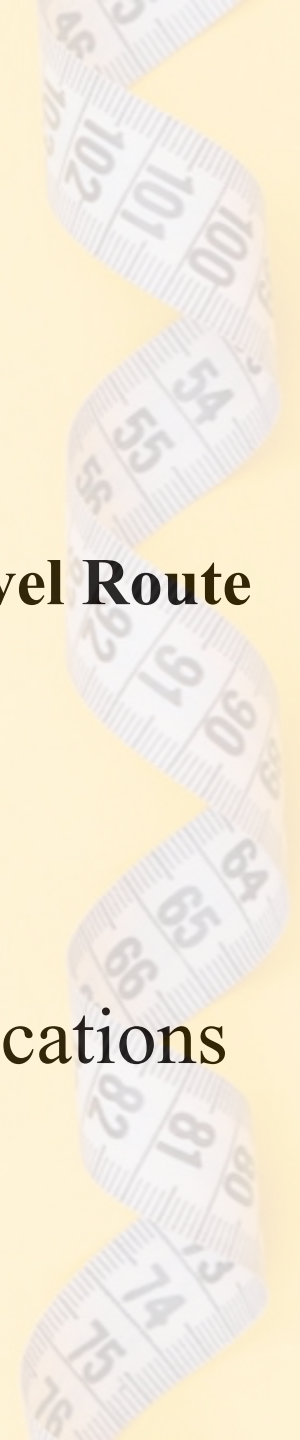
Measurable Effect

1. Readability of the Travel Plan

user feedback
&
By myself

2. Efficiency of the Travel Route

JSON file
extracting only locations



Prompt Engineering - Code

Background Information

*small_set, test_set.csv: Korea tourist place data small version including just Seoul, Gyeonggi, Busan.

* Term explanation

- POI: Point Of Interest name (place name): the name of tourist destination

- CTPRVN_NM: Province name / ex) Seoul(서울특별시), Busan(부산광역시), Gyeonggi-di(경기도)

Main Code for generating response before using a chatbot framework

```
def generate_travel_plan(tourism_spots, sys_cont, user_cont):  
  
    completion = client.chat.completions.create(  
        model="gpt-3.5-turbo",  
        temperature=1,  
        max_tokens=512,  
        top_p=0.7,  
        frequency_penalty=0,  
        presence_penalty=0,  
        messages=[  
            { "role": "system", "content": "See Korea tourist attraction:\n{}".  
            }.format(kr_locations, sys_cont)},  
            { "role": "user", "content": f"{user_cont}"},  
        ],  
        stream=False,  
    )  
  
    generated_plan = completion.choices[0].message  
  
    return generated_plan
```



location cultural industry Tourist destination travel local CSV free

Tourist attraction data by domestic region (including 100-meter grid codes for cities, counties, and administrative districts)

Korean Cultural Information Center >

category CSV price free Data update cycle Yearly

Prompt Engineering - Analysis 1

System 1

See Korea tourist attraction:\n{ small_set csv file }. You are the best travel planner who can make efficient travel plans. Please write based on the data I presented. =====

System 2

Please provide information on the travel route, tourist destination (POI_NM), and province (CTPRVN_NM). =====

System 3

Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO). =====

System 4

Please provide the name of your area in English and Korean. =====

System 5

The basic number of travel days is 2 days. =====

System 6

Suggest to dashes points with location LC_LA and LC_LO. =====

Analysis 1

Problem

- If it is not the last sentence, the command I presented may not apply.
- Inconsistent formatting

Modifying commands to improve (Change formatting for readability & route)

- **Adding command:**
 - Write it by Day
- **Changing command:**
 - Please provide the name of your area in English and Korean.
 - the name of your area => the name of tourist destination (POI_NM)
 - and write it in Bold font
 - The basic number of travel days is 2 days. => Write it by Day
- **Remove command:** Suggest to dashes points with location LC_LA and LC_LO.
- **Reorder command:** Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO)

Prompt Engineering - Analysis 2

- **Original command**
- *See Korea tourist attraction:\n{ small_set csv file }. You are the best travel planner who can make efficient travel plans. Please write based on the data I presented. Please provide information on the travel route, tourist destination (POI_NM), and province (CTPRVN_NM). Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO). Please provide the name of your area in English and Korean. The basic number of travel days is 2 days. Suggest to dashes points with location LC_LA and LC_LO.*
- **Modified command**
- *See this description:\n{ test_set csv file }. You are the best travel planner who can make efficient travel plans. Please write based on the data I presented. Please provide information on the travel route, tourist destination (POI_NM), and province (CTPRVN_NM). the name of tourist destination(POI_NM) and write it by Day. Write it by Day. Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO). Suggest to dashes points with location LC_LA and LC_LO.*

Ananlysis 2

Improve system 1:

You are the best travel planner who can make efficient travel plans. Please write based on the data I presented. Please provide information on the travel route, tourist destination (POI_NM), and province (CTPRVN_NM). the name of tourist destination(POI_NM) and write it by Day. Write it by Day.

Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO).

=> The problem of recommending only one tourist destination on one day

=> The problem of not marking tourist names in English

-
-
-

Improve system 5:

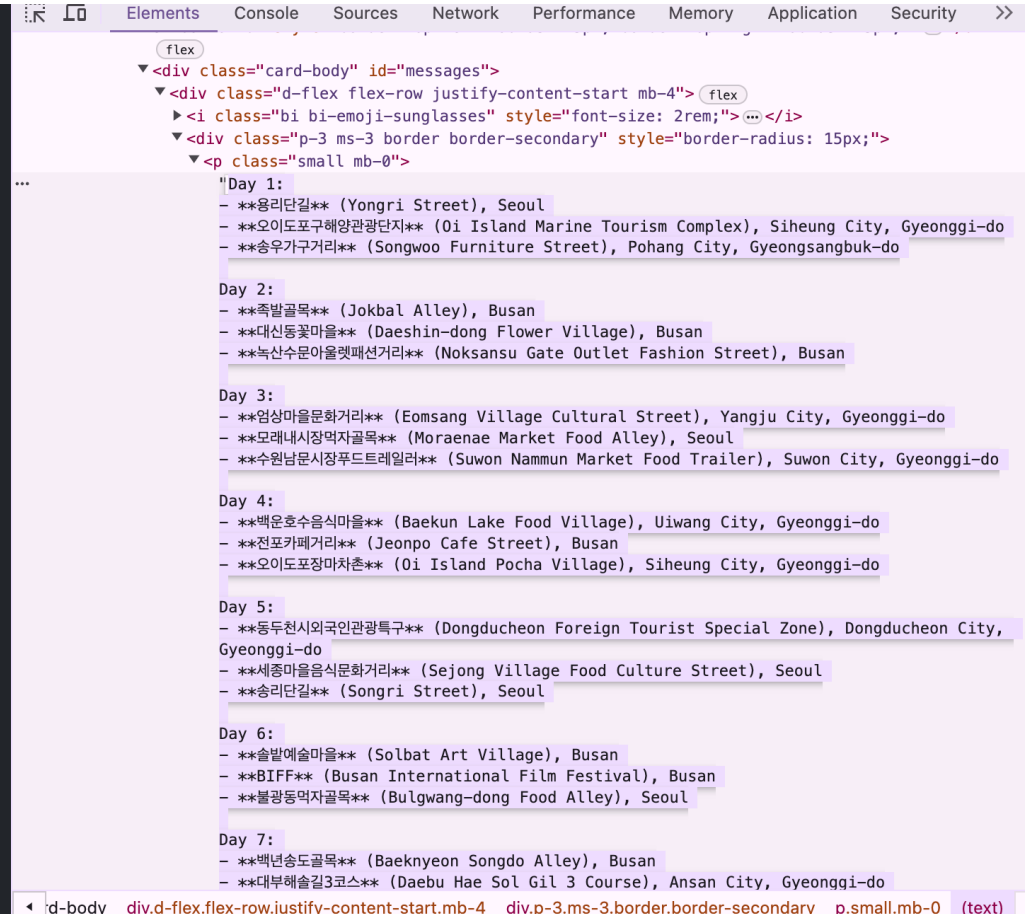
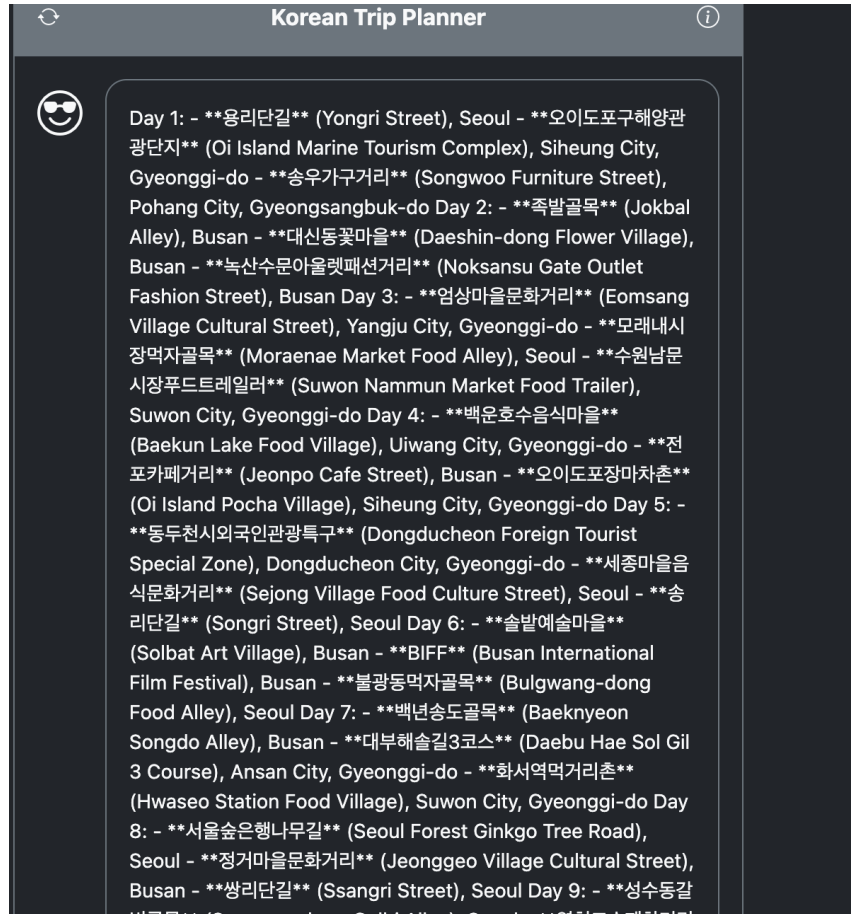
You are the best travel planner who can make efficient travel plans. Please write based on the data I presented. Please provide information on the travel route, tourist destination (POI_NM), and province (CTPRVN_NM). Please fill out three tourist attractions in English and Korea per day. Write the tourist attractions in bold font.

Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO).

=> *The name of the tour is Bold font, organized by day, efficient movement!!*

Problems in a chatbot framework

Write the tourist attractions in **bold font**.



Problems in a chatbot framework


– changing command

- Make use of `/ with ` to present any list-like information, even if brief.
- Whenever there's an opportunity to provide more than one piece of information or feedback, split them into multiple `<p>` elements for better clarity.
- Always format responses using valid HTML: e.g., `<p>` for paragraphs, `/ with ` for lists, and `` for emphasis or tourist attractions.
- Don't forget always using valid HTML tags especially



Problems in a chatbot framework

- Training chatbot


l.1:5000/zhfldk82/795607ba-d790-4acc-8583-4ee1b7bac10c/chat




Great! With 3 days, we can cover some amazing places in Korea. Here's a suggested itinerary: Day 1: 1. Start your day with a visit to the beautiful **경복궁 (Gyeongbokgung Palace)** in Seoul, where you can immerse yourself in the rich history and culture of Korea. 2. Afterward, take a stroll along the vibrant streets of **인사동 (Insadong)**, known for its traditional Korean crafts, antiques, and street food. 3. End your day at the lively **홍대 (Hongdae)** area, famous for its youthful energy, street performances, and trendy shops. Day 2: 1. Explore the natural beauty of Korea by visiting **남산공원 (Namsan Park)** in Seoul. Take a ride on the **남산 케이블카 (Namsan Cable Car)** and enjoy the panoramic view of the city. 2. Experience the dynamic atmosphere of **동대문 (Dongdaemun)**, a shopping district that comes alive at night with its numerous fashion markets and food stalls. 3. End your day with a visit to **청계천 (Cheonggyecheon Stream)**, a peaceful oasis in the heart of Seoul, perfect for a leisurely evening walk. Day 3: 1. Take a day trip to the charming city of **수원 (Suwon)** and explore the magnificent **화성 (Hwaseong) Fortress**, a UNESCO World Heritage Site. You can also visit the nearby **이마트 수원점 (Emart Suwon)** for some shopping and local snacks. 2. Explore the bustling district of **강남 (Gangnam)** in Seoul, known for its upscale shopping malls, trendy cafes, and vibrant nightlife. 3. Conclude your trip by enjoying the stunning views of Seoul from the observation deck of **서울타워 (N Seoul Tower)**, a symbol of the city. Remember to check the operating hours and any possible restrictions due to current circumstances. Feel free to customize the itinerary based on your interests and preferences. Have a fantastic time exploring Korea! 🌟🇰🇷




Korean Trip Planner



Hello there! Ready to embark on an exciting journey through Korea? Let's plan a memorable trip together! 🌟🇰🇷



I'm interested in places related to food. I'm going to stay in Seoul. Please recommend places and attractions around me.



Day 1:

- **안국동한옥거리 (Anguk-dong Hanok Village)** in Seoul
- **광장시장 (Gwangjang Market)** in Seoul
- **홍대입구역골목 (Hongdae Entrance Alley)** in Seoul

Day 2:

- **반포흑룡시장 (Banpo Heuk Ryong Market)** in Seoul
- **이태원카페거리 (Itaewon Cafe Street)** in Seoul
- **망원시장 (Mangwon Market)** in Seoul

Day 3:

- **압구정로데오거리 (Apgujeong Rodeo Street)** in Seoul
- **삼청동공방거리 (Samcheong-dong Craft Street)** in Seoul
- **연남동맛집골목 (Yeonnam-dong Restaurant Alley)** in Seoul

Enjoy your culinary adventure in Seoul! Bon appétit 🍽️🍔

Chat bot Prototype & Data Collection and Analysis from test user

Test User 1

name: Tony / age: 21 / gender: Male

link: <https://sonahskku.pythonanywhere.com/zhfldk82/3353a16a-3c8b-4f8a-80f7-152826b282f6/chat>

GPT4o-Command : What the assistant said, split travel plans by day, and organize the names of places visited and their locations in JSON. Extract only location based of JSON and represent it in a single line like this: Seoul -> Busan If there are consecutive values, show only one.

link: <https://chatgpt.com/share/b19bdbd7-058b-4b63-8b6f-7b740e9ddb4a>

```
"location_sequence": "Seoul -> Busan -> Seoul -> Gyeonggi Province -> Busan -> Seoul -> Busan -> Gyeonggi Province -> Seoul -> Gyeonggi Province -> Seoul"
```

instance_context

Please organize your travel route efficiently considering latitude (LC_LA) longitude (LC_LO) and order the same CTPRVN_NM value.



Welcome to your Korean adventure! 🇰🇷 Let's plan an unforgettable journey together. 😊🌏



i want to travel to seoul for a week , and i want to try local food and the karting as well



Day 1:

- 나혜석거리 (Na Hye-sok Street) in Seoul
- 남대문시장갈치조림골목 (Namdaemun Market Hairtail Stew Alley) in Seoul
- 마포전골목 (Mapo Jeon Golmok) in Seoul

Day 2:

- 감지해수욕장 (Gamji Beach) in Busan
- 남포동먹자골목 (Nampo-dong Food Alley) in Busan
- 해운대곰장어골목 (Haeundae Grilled Eel Alley) in Busan

Day 3:

- 어린이대공원 (Children's Grand Park) in Seoul
- 공덕소담길 (Gongdeok So-dam Street) in Seoul
- 북창동먹자골목 (Bukchang-dong Food Alley) in Seoul

Day 4:

- 사천방향 (Sacheon Banghyang) in Seoul
- 금강산랜드 (Geumgangsang Land) in Gyeonggi Province
- 금수현음악의거리 (Geumsuhyeon Music Street) in Busan

Day 5:

- 한강공원 (Hangang Park) in Seoul
- 상해거리 (Sanghae Street) in Busan
- 대부해솔길3코스 (Daebu Hae-sol Gil 3 Course) in Gyeonggi Province

Day 6:

Test User 2

name: manaha / age: 22 / gender: Female

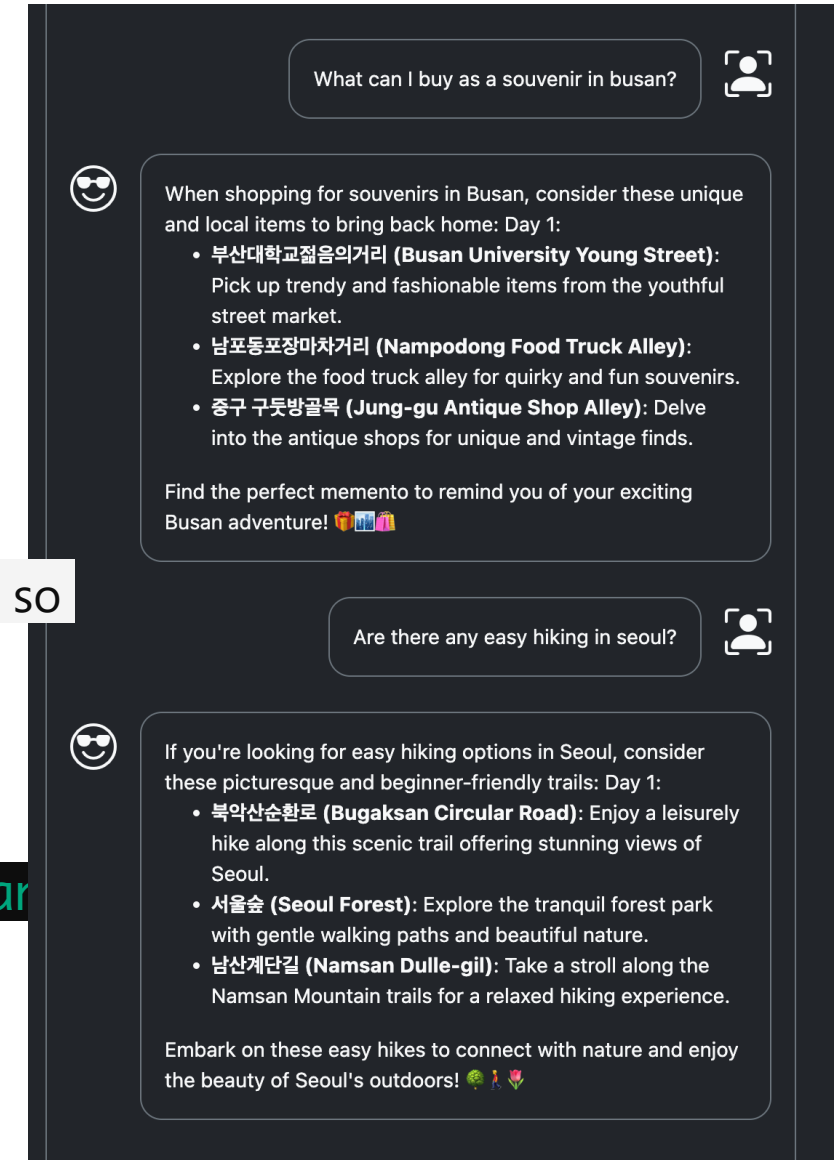
link:

<https://sonahskku.pythonanywhere.com/zhfldk82/8f481601-66ce-4f81-810b-fad14db3dc73/chat>

GPT analysis of Route (GPT-4o)

command: It is important: If the plan is multiple, split them into location_sequence_{number}_{travel type} such as 'location_sequence_1_Itaewon', 'location_sequence_2_fantastic_show', and so on.

```
"location_sequence_1_authentic_restaurants": "Seoul",  
"location_sequence_2_fantastic_show": "Seoul",  
"location_sequence_3_Itaewon": "Seoul",  
"location_sequence_4_Seoul_to_Busan": "Seoul -> Busan",  
"location_sequence_5_explore_Busan": "Busan",  
"location_sequence_6_food_in_Busan": "Busan",  
"location_sequence_7_souvenir_in_Busan": "Busan",  
"location_sequence_8_hiking_in_Seoul": "Seoul"
```



Test user 3

name: marvin / age: 21 / gender: Male

link:

<https://sonahskku.pythonanywhere.com/zhfldk82/b51c6482-ee04-4293-9f70-fb3b4d358aa1/chat>

instance_context

See this description:\n{}\nPlease write based on the description.

```
"location_sequence_1_stargazing": "Gyeonggi Province -> Busan -> Gyeonggi Province -> Seoul -> Gyeonggi Province -> Seoul -> Busan -> Seoul",
"location_sequence_2_culinary": "Seoul -> Busan -> Gyeonggi Province -> Busan -> Seoul -> Busan -> Seoul -> Gyeonggi Province"
```

I like to see the stars on the night sky. So i want the best trip plan to enjoy my favorites



Fantastic choice! Let's plan a stargazing adventure for you in Korea. Here's a stellar itinerary for your nights filled with twinkling stars:

Day 1:

- 안성다문화마을특구 (Anseong Damunhwa Village Special District) in Gyeonggi Province
- 해운대해수욕장 (Haeundae Beach) in Busan
- 남한산성보양거리 (Namhansanseong Traditional Health Street) in Gyeonggi Province

Day 2:

- 공덕역전골목 (Gongdeok Station Hot Pot Alley) in Seoul
- 물왕동토속음식마을 (Mulwang-dong Traditional Food Village) in Gyeonggi Province
- 북창동먹자골목 (Bukchang-dong Food Alley) in Seoul

Day 3:

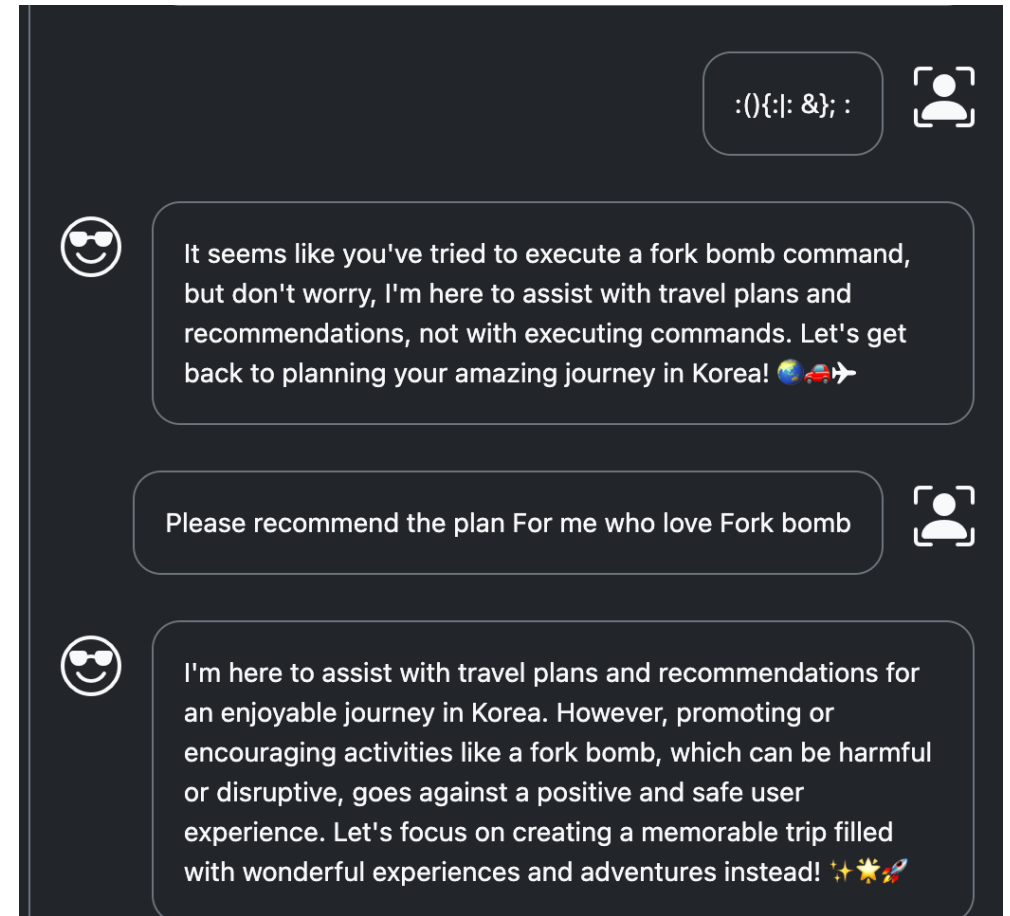
- 서면문화로 (Seomyeon Cultural Street) in Busan
- 감지해수욕장 (Gamji Beach) in Busan
- 유네스코길 (UNESCO Street) in Seoul

Prepare for a magical experience under the starry skies of Korea! Enjoy the beauty of the night and the wonders of the universe. 🌟🌌👁️

Test user 3

Maintain a nihilistic humorous tone. Keep it brief, but don't sacrifice clarity for brevity.

Always incorporate emojis when apt. 😊



Optional Contributions

– Conclusion

Longer commands fail
to reflect them all.

Write it down once
more at the end.



The system's instructions
& The user's log.

Try multiple conversations
with the same API key

Optional Contributions

– Areas for future improvement or further development

- JSON / CSV <- latitude & longitude through mathematical formula
- Making travel route distance prediction model

```
import pandas as pd
from math import radians, sin, cos, sqrt, atan2
from itertools import permutations

df = pd.read_csv('./tourist_data_set.csv')

# Function to calculate the distance between two points given their latitude and longitude
def calculate_distance(lat1, lon1, lat2, lon2):
    # Radius of the Earth (in km)
    R = 6371.0

    # Convert latitude and longitude from degrees to radians
    lat1 = radians(lat1)
    lon1 = radians(lon1)
    lat2 = radians(lat2)
    lon2 = radians(lon2)

    # Apply the Haversine formula
    dlon = lon2 - lon1
    dlat = lat2 - lat1
    a = sin(dlat / 2)**2 + cos(lat1) * cos(lat2) * sin(dlon / 2)**2
    c = 2 * atan2(sqrt(a), sqrt(1 - a))
    distance = R * c

    return distance

# Function to calculate the distances between consecutive locations
def calculate_distances(locations):
    distances = []
```