COMP3421 Web application design and development

Project report

Group member: 24134206d Cheok Chi Chon

Project title: Travel Planner Assistant

Project Overview: The purpose of Travel Planner is to streamline the entire process of itinerary management and creation. Previously, many people were too lazy to plan trips thoroughly; moreover, the phone notes apps and even some planning apps are not intuitive enough to support the management and brainstorm organization of many itineraries.

Within Travel Planner, users can highly personalize design their personal itineraries. For instance, when a user creates a 3 days trip, the website platform will automatically create 3 blocks for the user to fill in itinerary details, and all the itineraries are sorted by timeline automatically. Secondly, to address a pain points those users feeling difficult to decide on a destination, or they don't know the popular attractions in the country. The Travel Planner also provides a recommended list. The user can simply click the "add" button below the recommended attraction and add it to the itinerary list.

In addition, I would like to further design Travel Planner and apply it for use in the future. As I fall into the category of people who dislike to trip planning. Therefore, there some initial feature ideas that are still in developmental stage. One concept as a 3D Earth model, which allow users to click on any area in to view the detailed information of the countries that user clicked. but currently this application is a technical challenge for me. Another feature is a chatbot to assist with itinerary design, However, it's hard to apply a real AI chatbot at the moment, so the chatbot now only responds to user input with some predefined messages.

Overall, Travel Planner combines all essential step of a trip planning, from information researching, attractions selection to itinerary design. Making it easier and more convenient for users to organize a great journey.

Project design:

- **System Structure, Components, and functionalities:**

  Travel Planner System Using three files, HTML, CSS, and JavaScript, and the Overall Structure is combined by five key components: Homepage and navigation bar, destination recommendation, 3D earth, itinerary planning, and chatbot. There are more detailed reveals of each sub-structure :

  Homepage and navigation bar:

  Function: Core function entrances and navigation; the function of the button to jump to other components.

  Destination recommendation:

  Function: Display the photo, the function to add it to the itinerary, and the filter function to choose the state the user want to display.

3D Earth:

Function: Display the Earth, the function to change the size of the Earth, and the animation to rotate the Earth. There is also a page load fade-in

Itinerary planning (Core):

There are lots of functions to support creating editing, and saving multiple itineraries. Moreover, it also contains the function of creating a subcomponent (activities block of each day), calculating the number of date of the trip , activity management and local Storage.

行程安排

第1天 - 2025-12-19 (星期五)

09:00 ◎ **吃飯** 酒店
     ☑ 編輯 🗑 刪除

11:00 ◎ **午餐** Polyu
     ☑ 編輯 🗑 刪除

+ 添加活動

第2天 - 2025-12-20 (星期六)

09:00 ◎ **run** hotel
     ☑ 編輯 🗑 刪除

09:00 ◎ **東京鐵塔** 東京
     ☑ 編輯 🗑 刪除

09:00 ◎ **淺草寺** 東京
     ☑ 編輯 🗑 刪除

09:00 ◎ **明治神宮** 東京
     ☑ 編輯 🗑 刪除

+ 添加活動

Chatbot:

The main function of chatbot is to create the message block when user send a input message and the chatbot reply, and to design the pre-defined answer with specific user input.

AI旅行助手

有任何旅行問題？AI助手隨時為您提供建議和解答，幫助您規劃完美旅程。

旅行助手
隨時為您提供旅行建議

您好！我是您的AI旅行助手。有什麼可以幫您規劃旅行的問題嗎？

巴黎必去景點？

巴黎必去景點包括：艾菲爾鐵塔、羅浮宮、巴黎聖母院、凱旋門、香榭麗舍大街、蒙馬特高地和塞納河遊船。建議至少安排3-4天時間遊覽這些主要景點。
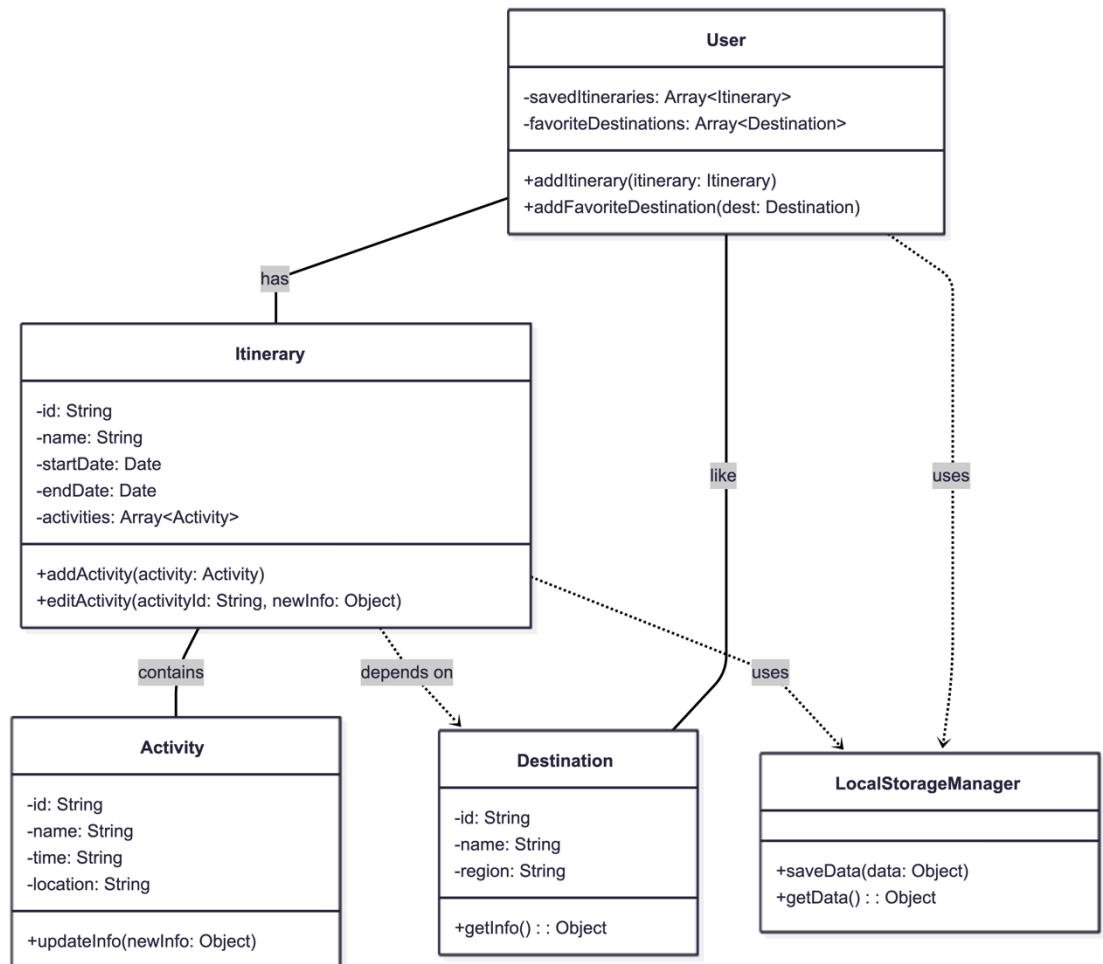
輸入您的問題...

試試這些問題：
東京最佳旅遊季節？   巴黎必去景點？   如何規劃歐洲多國遊？

- **Class diagrams:** Travel Planner Class Diagram by Using Mermaid Live Editor

- **Database:** Travel Planner uses local Storage instead of server-side databases to manage itinerary information(create, add, delete). Since the Instruction said that in a single-person group, just developing the client side is okay, I chose an easier way to solve the storage problem.

  Therefore, the itinerary data will be retained even after refreshing the Page or restarting the browser (local storage). However, users should ensure that they do not clear the browser data since this will cause them to lost the data.

- **Programming languages and tools:** HTML, CSS, and JavaScript are the

main programming languages applied to Travel Planner. However, there are some extra external Frameworks and Libraries. Tailwindcss that applies to HTML files, which makes it possible to add CSS styles inside the element tag. This contributes to a rapid, responsive UI development. Three.js is a 3D JavaScript graphics library it is used to implement the 3D Earth. Then finally, a Lucide Icon library to provide icon photos in the Webpage. And all the code is used in VS Code to editing and Chrome for testing.

- **Testing strategies:** The testing strategies for Travel Planner focus on functionality, usability, Compatibility and stability, ensuring the system meets the user's needs and provides a great experience. The core testing methods are as follows:

  - **Functionality:** It ensures all main functions work as expected. Repeatedly testing by user operations, such as trying buttons, testing creating, editing, and saving itineraries and checking if the date logically valid.

  - **Usability:** Is to testing the Webpage is easy to understand and use for common users. I invite 2 friends as users to try to manage itineraries and collect feedback from them, actually they suggest that the system collect the start date and end date and automatically calculate the number of travel dates. In the original version user should add the itinerary block themselves.

  - **Compatibility:** Ensure Travel Planner works successfully on different browsers and devices. So I test on common browsers such as Safari and Chrome, and also test on desktop and mobile phone, I focus on checking the interface display and the function availability.

  - **Stability:** To confirm that the system is running stably. Continuously repeated controls, creating a lot of itineraries, refreshing the page, and checking if there a crashes or data loss.

- **User manual:** This manual is to help users quickly get started with using Travel Planner.

  - 1. On the home page, click "探索目的地" or "開始規劃" to explore

some recommended destinations or start planning. These icons are also in the navigation bar.

◆ 2. Create a new travel plan by clicking "創建新行程" and entering some basic information, the destination, date (most important!!), and notes, and save the plan first.

◆ 3. After that, the system will calculate the number of days the user travels. For example, user inputs the start date 20 Dec 2025 to 22 Dec 2025, the system will know that I have a 3-day travel and create 3 3-day itinerary blocks. And the user can add the activity details in each day's block. Moreover, users can also add the itinerary system recommended through the "recommended destinations" section.

◆ 4. After all creation, save the itinerary, and later you can find it in the saved itinerary section. The user can also create a new itinerary. If there are any problems, they can scroll to the bottom in Travel Planner and find help from the chatbot.

◆ * The best browsers and device I suggest using to open Travel Planner are Safari and Desktop, and there is a detail demonstration for using Travel Planner in the demonstration video.

Role of member: CheokChiChon24134206d

This group only has one member, so all of the work was finished by me.