# YOLOgo - Creating Personalized Student Travel Plans with Generative AI

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CPT208
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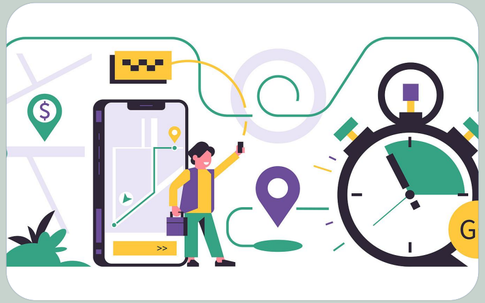
# 01.Background and Introduction

## Theme description



**Advanced natural language processing and generative models**

**Provide multimodal interaction (voice, text and images)**

**Automatic generation and real-time adjustment of travel plans**

**Generative AI in *Tourism***

Targeted at college students.

Generative AI technology can dynamically **generate travel guides** based on user needs, thereby meeting the demands of ***personalization*** and ***low budget*** .

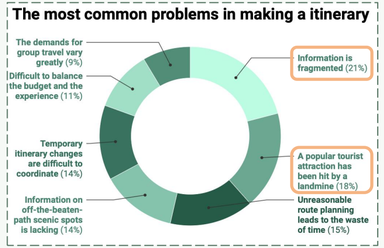
## Core issue in real life

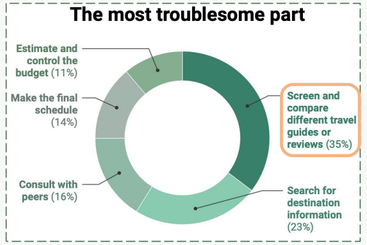
**Fragmented** information;

**Time-consuming** manual itinerary organization;

Failure to meet **personal** expectations in travel guides;

Unexpected situations in **real time**.



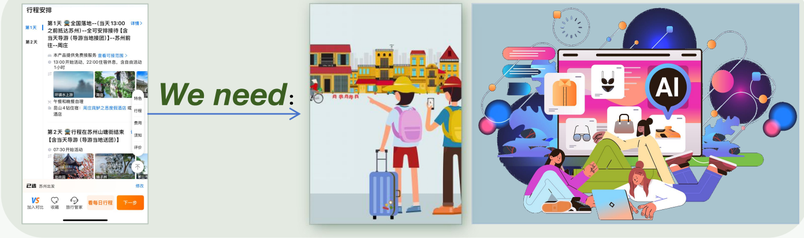

***We need***:

Control expenses while ensuring an excellent experience

Preset templates and static information; Fixed itinerary recommendations ✕ Not Personalized

Presented in text and pictures ✕ Not intuitive and detailed enough

No focus. Just skim through each scenic spot in a cursory manner ✕ Not creative generation.




## Problems in exiting work

***We are going to***:

**AI-Driven Automation**: Generative models enable end-to-end travel planning

**Humanized UX**: Voice commands & dynamic feedback mechanisms

**Visualization**: Interactive map-timeline fusion targeti

**Differentiation**: Transforms travel planning from information listing to experiential design

**Personalized plans** **Dynamic adjustment** **Low budget.**

# 02.Design and Methodology

## Persona

20 years old · University Student

Energetic | Travel with partners/friends | Curious | Low budget

**Requirement**

"Setting up travel plan is too time consuming, I need a tool to help"

**Story:**

- Michael Scott is a sophomore year student from Suzhou. He balances academic pressure with weekend adventures, using his phone to scout cheap buses, student-priced entry tickets, and vegetarian eateries. He needs an app that auto-sorts travel options, adapts plans when he goes on a short trip in weekend or holidays.

**Goals:**

- Access student discounts (tickets, transport, lodging).
- Instantly adjust plans for disruptions.
- Present travel plans in a more interesting way

**Challenge**

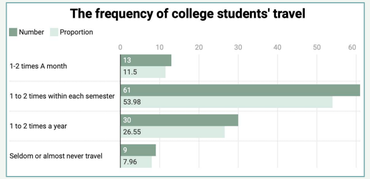
- Limited time to research student discounts across multiple platforms
- Pre-made itineraries lack flexibility for spontaneous changes
- Struggles to balance "must-see landmarks" with offbeat experiences

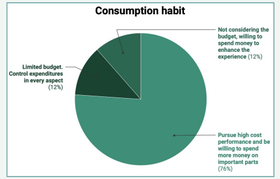
**Personality**

Introverted — Extroverted
Thinking — Feeling
Sensing — Intuition
Judging — Perceiving

**Motivation**

Interest, Knowledge, Growth, Social



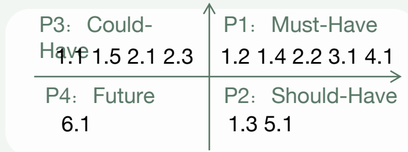

It is mainly targeted at **college students**, especially those with **low budgets** who are passionate about traveling and pursue **cost-effective** travel.

## Design process

### Discovering Requirements

In the initial stage, questionnaire surveys and group discussions were used to identify college students' travel pain points and expectations.

**1. Natural and smooth interaction mode**
1.1 Voice Input
1.2 Multi-style itinerary generation
1.3 Multi-group chat collaborative planning
1.4 Visual Itinerary planning
1.5 Itinerary comparison and screening
**2. Intelligent itinerary recommendation**
2.1 Hidden Attractions and Novel Experiences
2.2 Automatic balance of scenic spots
2.3 Catering Coordination
**3. Low-budget travel**
3.1 Budget-friendly options
**4. Travel flexibility and response to unexpected situations**
4.1 Real-time travel adjustment
**5. Fun interaction with travel agencies**
5.1 Gamification Experience
**6. Social sharing and travel diaries**
6.1 Travel Diary and Sharing




### Questionnaire results

#### Basic information

| Question | Top Responses | Percentage |
|---|---|---|
| Do you enjoy traveling during college? | **Yes** | 88.5% |
| How often do you travel? | **Once or twice per semester** | 54.0% |
| Travel spending habits | **Seek high cost-performance ratio** | 76.1% |
| Priority spending areas on a limited budget | **Accommodation & Food** | 74% each |

#### Core issue

| Question | Top Issues Identified | Percentage |
|---|---|---|
| Common problems when planning trips | **Fragmented information** | 62.8% |
| | **Risk of disappointing popular spots** | 53.1% |
| | **Inefficient route planning** | 45.1% |
| Most time-consuming planning tasks | **Comparing different guides and reviews** | 76.1% |
| | **Searching for destination information** | 50.4% |

#### Expectation

| Question | Preferred Features | Percentage |
|---|---|---|
| Willingness to use AI for trip planning | **Average score** | 4.36/5 |
| Preferred methods for AI to understand needs | **Multi-round voice/text dialogue** | 70.8% |
| | **Keyword descriptions** | 65.5% |
| Desired presentation formats for itineraries | **Map-based visual itineraries** | 90.3% |
| Desired features for budget travel | **Student-exclusive discounts** | 78.8% |

### *Core functional module*

**• Natural and smooth interaction methods**

voice input, one-click generation, multi-round dialogue

**• Preferential information for low budgets**

Student discounts on accommodation and food at scenic spots

**• Intuitive itinerary visualization**

map and timeline display

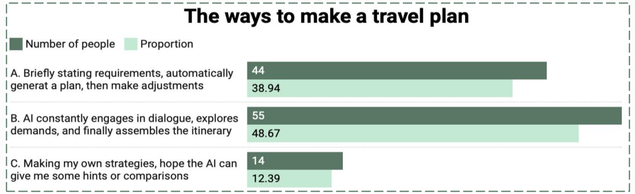
**• Dynamic feedback and real-time adjustment**

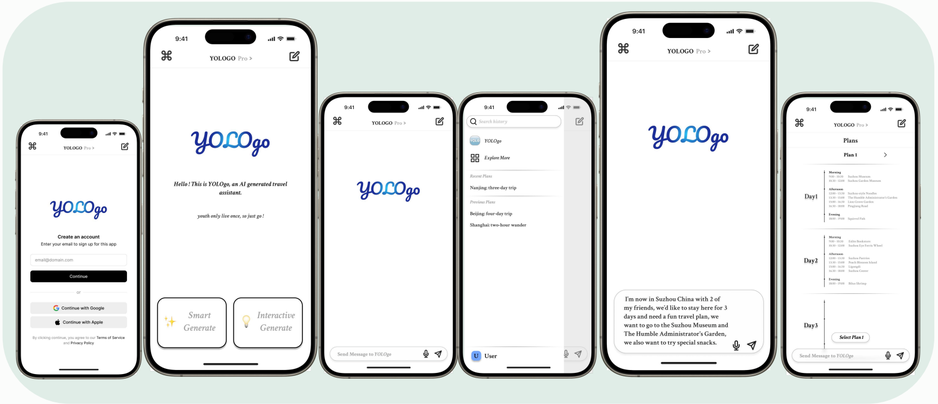
in response to weather conditions, emergencies, etc.

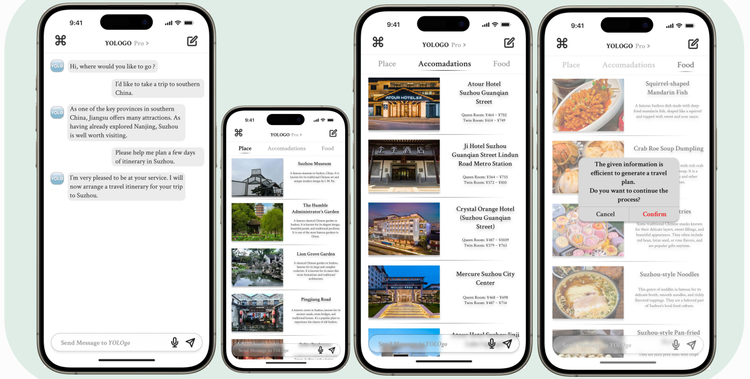
# 04.Prototype implementation

## 01. The generation of "one-click generation" and "conversational guidance"


**38.94%** of college students hope to be able to generate all the strategies with one click by briefly describing the requirements.
Meanwhile, **48.67%** of college students hope to be able to communicate continuously with AI to confirm their needs and then integrate strategies

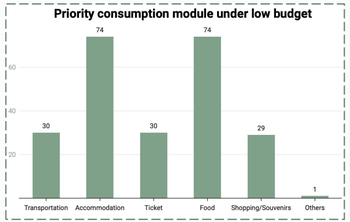


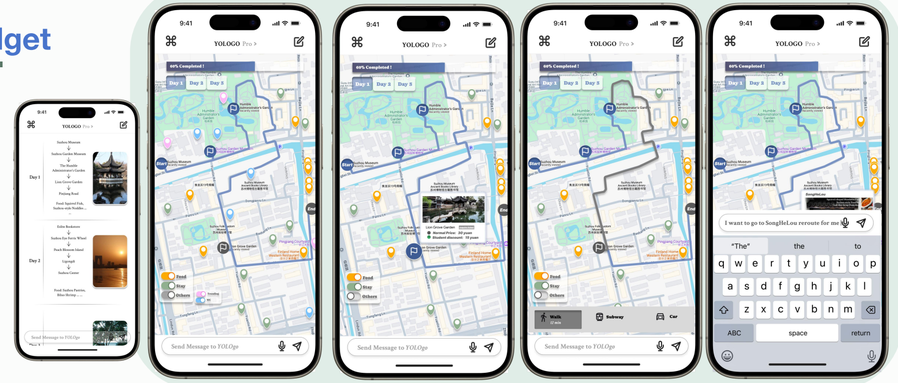




## 02. Cost-effectiveness considerations under a low budget

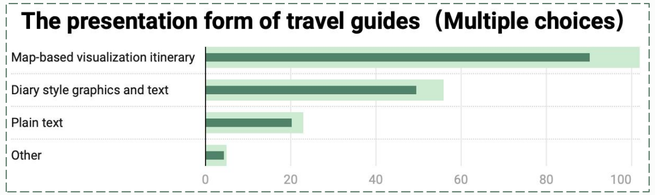

**74%** of college students, while pursuing cost-effectiveness with a low budget, hope to pay more attention to accommodation and food, we have made a detailed display and screening of these two modules




## 03. Present the itinerary planning with an interactive dynamic map

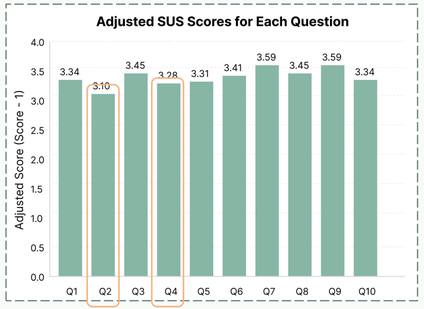

More than **90%** of college students**(102/113)** chose to use Map-based visualization itinerary when choosing the presentation form of their travel guides
While visualizing the itinerary, we can provide **interactive/conversational methods** for adding, modifying or canceling locations, and also view the real time information like nearest delicacies.



# 05.Evaluation and Iteration

## System Usability Scores

FEEDBACK




## *Usability testing*

*Basic feedback of the prototype*

1. I think the travel guide generator APP is very **easy to use.**
2. I think the APP's **functions** are arranged reasonably.
3. I think the APP's **interface design** is good.
4. I think the APP provides **sufficient help information**.

*Feedback on the realization of main functions*

5. The **"one-click" and "interactive"** generation methods meet my expectations.
6. The presentation of multiple **'accommodation' and 'food' options** helps me filter choices.
7. The **"interactive map"** helps me visualize my itinerary intuitively.
8. The **"dynamic real-time adjustment"** function allows for flexible itinerary changes.

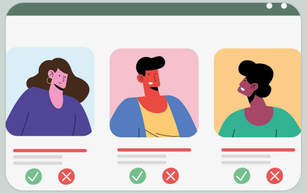
*Feedback on the APP usage experience*

9. I found using this travel guide APP pleasant.
10. I didn't need to learn a lot before I could use the YOLOgo travel guide APP.

**SUS score = ( 3.34 + 3.10 + 3.45 + 3.28 + 3.31 + 3.41 + 3.59 + 3.45 + 3.59 + 3.34 ) * 2.5 = 84.65**

## Interview

I invited college students from various universities who had participated in our two questionnaire surveys to take part in in-depth interviews.



**Question**:
1. Do the functions involved in the current prototype meet your expectations in mind?
2. Which areas do you think are lacking and need improvement?

"I suggest adding a comment pop-up on each destination page, allowing users to instantly share their thoughts and create an interactive space similar to a forum or chat area."

"It might be more convenient to integrate with other apps. For example, when a hotel is recommended, clicking on it could directly open Ctrip for reservation; clicking on a restaurant could link to Dianping or Meituan for reviews.

"Options can be added, such as “military-style tour” or “leisure tour,” allowing users to select the appropriate itinerary. Additionally, itineraries can be generated based on keywords for different themes, such as photo-worthy tours or cultural routes focused on museums and historical sites."

"I feel that when I choose a plan, I will consider transportation instead of studying it after choosing the plan

## *User testing*

Based on feedback from
**Comparing our Prototype and prior requirement analysis**,
**Usability tests**,
and **Student interviews**, Here are two **iterative goals**:

### Improvement

**01**

**Budget Transparency**

Display **student ticket** prices for attractions and hotel rates during itinerary planning to help students budget wisely.

**02**

**Style Customization**

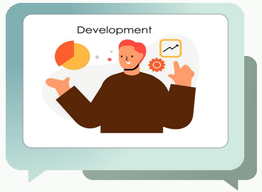
Allow users to **choose specific keywords** for AI to generate itineraries that match their desired style.

**03**

**Detailed Presentation**

Improve the initial **itinerary layout** by detailing daily schedules, individual location information, and incorporating **user reviews** for each spot.

### New functions




**01**

**History Integration**

Add an option for **historical itinerary records** to enable AI to generate more personalized plans based on past travels (meeting 53% of user demand).

**02**

**Forum Interaction**

Create **a city review platform** where users can post ratings and recommendations for attractions, restaurants, and hotels, facilitating experience sharing and tips.

## Reflection and Planning

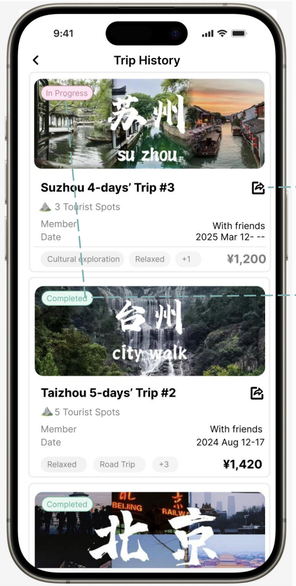
# Iteration-2 Improvement

## Requirements

Based on the demand analysis of interviews and questionnaire surveys, we need to create **History Integration** **Style Customization** two functional areas.

**The way AI understands requirements**

| | Number of people | Proportion |
|---|---|---|
| Key word description | 74 | 65.49 |
| Multiple rounds of voice or text conversations | 80 | 70.8 |
| Upload reference pictures/videos | 46 | 40.71 |
| Analysis of Historical Travel Preferences | 61 | 53.98 |

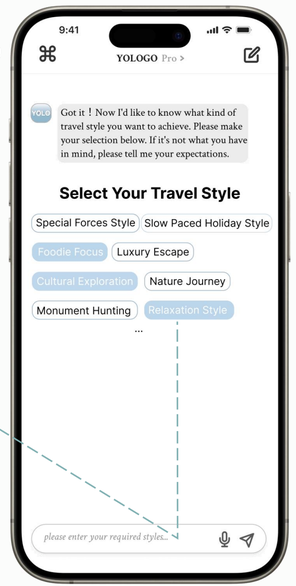



## Design and prototype

You can **share** your travel records with the community or forward them to others for reference

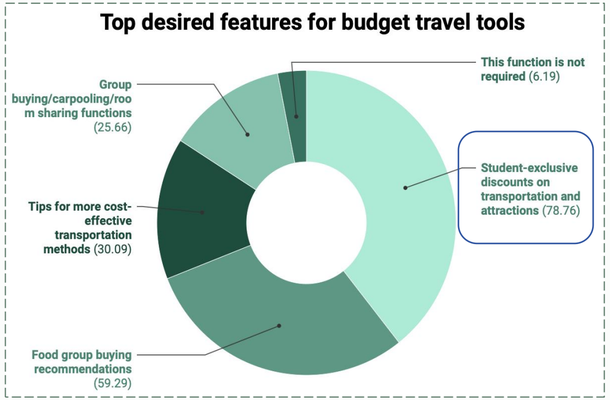
Here is the record of your travel status. Since we **pursue real-time adjustment**, it will only jump to *Completed* when you finally complete the trip and the record is successful. Before that, it is all *In progress* and **can be adjusted**.

Here, you can choose your expectations for the **key words** of your trip. You can make multiple selections, and then the AI will generate a **personalized itinerary** based on your choices. Meanwhile, you can also **describe it** through conversations.




## Requirements

**Top desired features for budget travel tools**

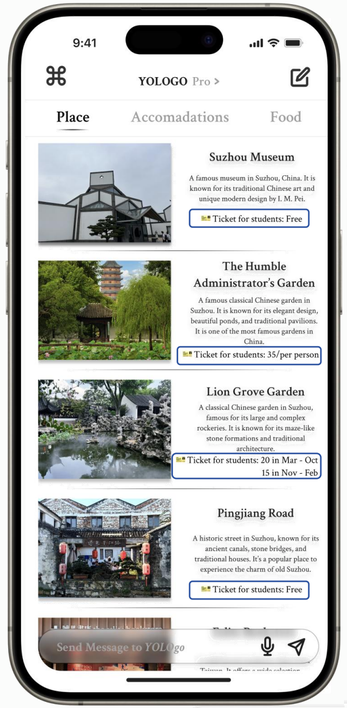


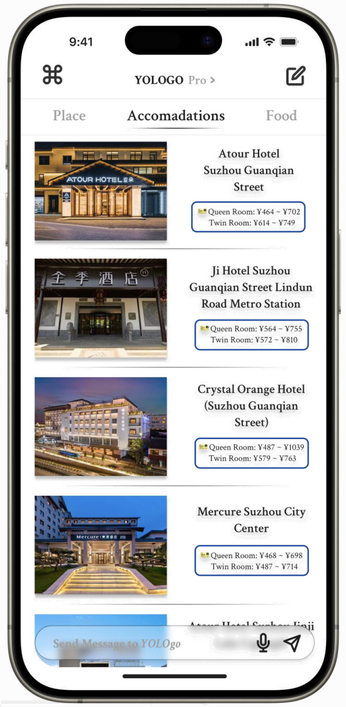


According to the survey interviews, **78.76%** of students consider **student discounts** a key need for low-budget travel.

Instead of only displaying traditional ticket information on the map after the initial plan, my improvement is to **show student ticket prices during the attraction preview stage**, providing users with valuable reference.

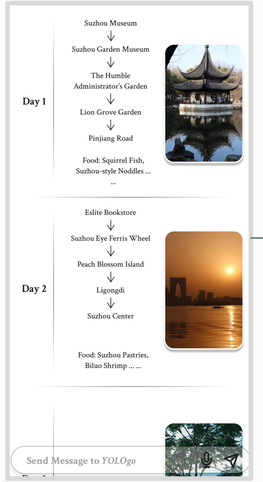
## Design and prototype



# Iteration-2 Improvement

## Requirements




1.**Insufficient details** about specifics about attractions and transportation options.

2.**No real-time itinerary adjustments**; If changes are needed, the user must go back and reselect.

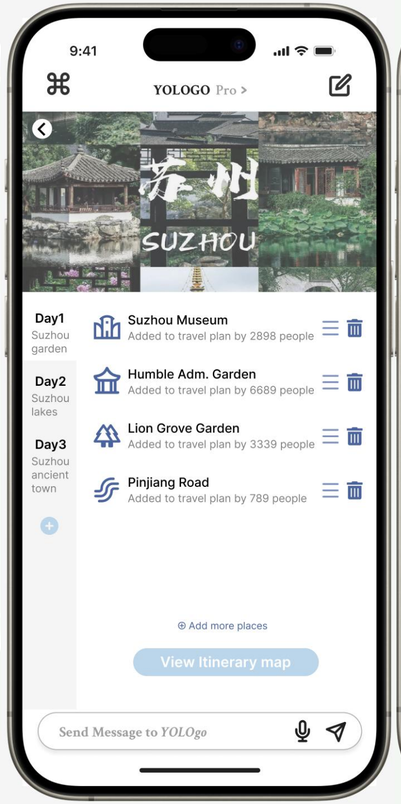
3.**Rough itinerary presentation** and lacks detail.

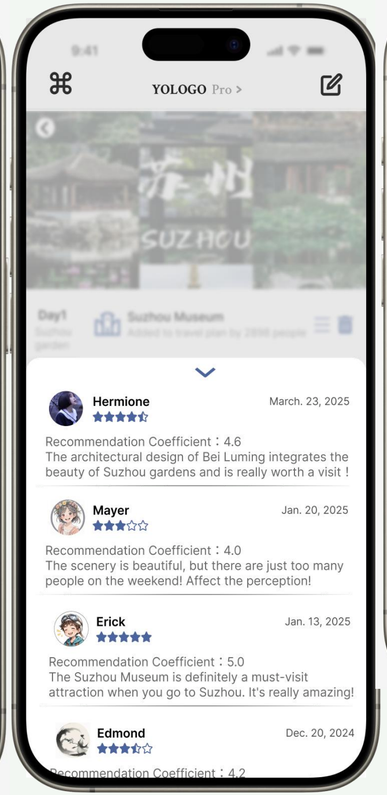
4.**Simplistic interface** design

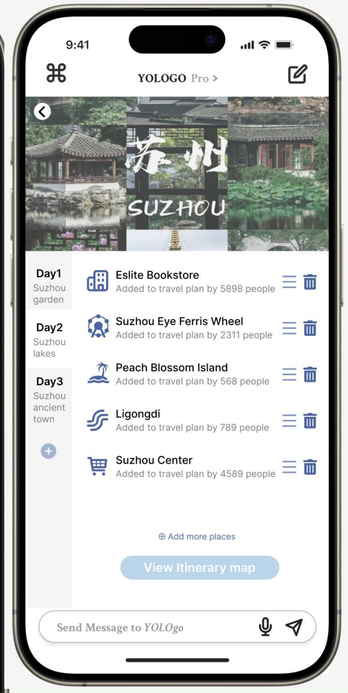
5.There is no section for viewing **authentic reviews** of the attractions.

## Design and prototype

The layout style has been adjusted, and new functions such as **scenic spot evaluation** and **dynamic itinerary adjustment** have been added.


Two college students who mentioned in the last interview that the information about this overall interface was unclear are invited for another ***feedback interview***.

Name：Honglin He
Age：20

“I think the information has become **much clearer**. The layout of the entire interface and the adjustment of the font are very clear. Then I especially like this **new review viewing** about scenic spots. I can see others' true thoughts and feelings. It's really, really good. **The interactivity** has increased.

Name：Yiran Qi
Age：20

“The new version has added the user's price and **recommendation coefficient**, providing users with more detailed destination information. It enables users to **see more of what they want**, such as how many people want to go, and also helps me **make a more suitable travel decision** for myself.”

## Evaluation


# Iteration-3 New functions

## 01.Requirement

“Create a city review platform where users can post ratings and recommendations for attractions, restaurants, and hotels, facilitating experience sharing and tips.”

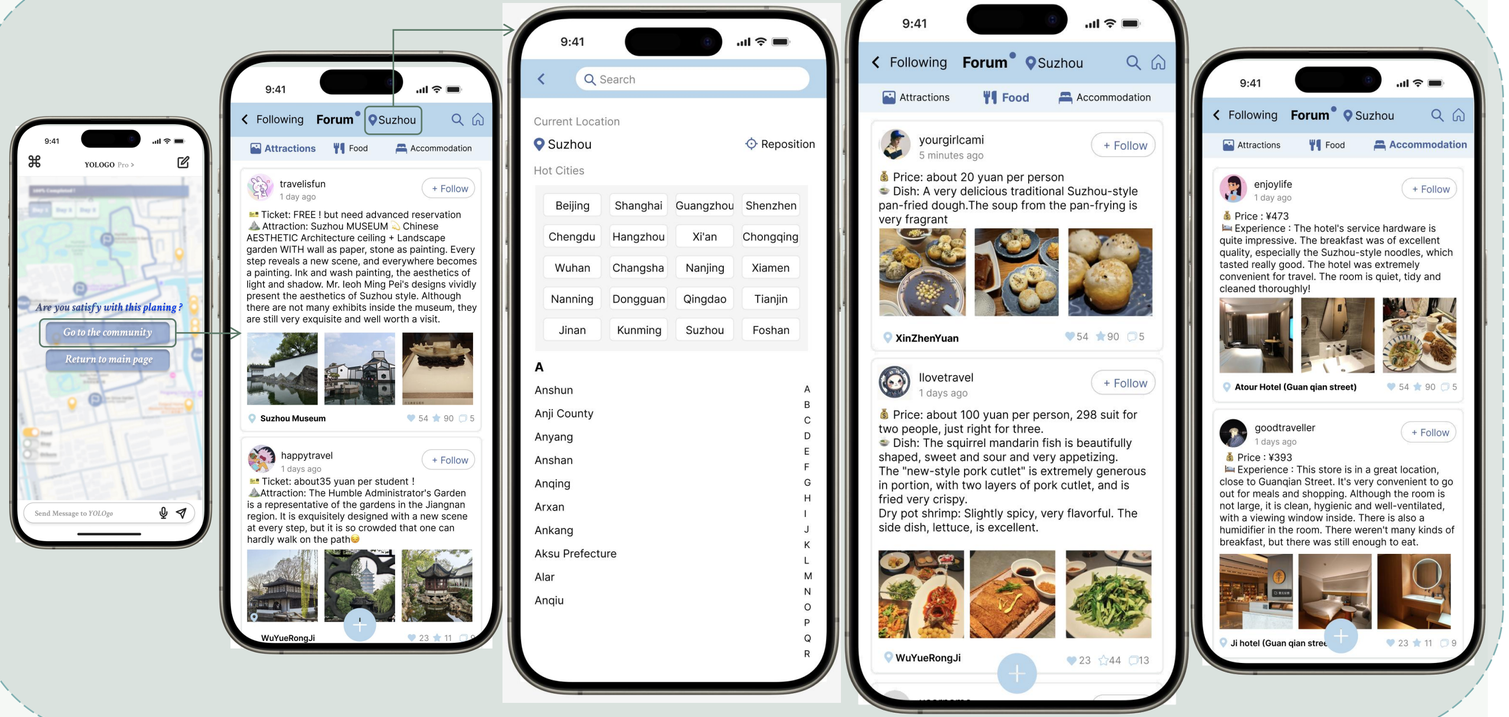
## 02.Design

--Interface must be simple.
--Coexistence of pictures and text
--Content must have price sharing

## 03.Prototype

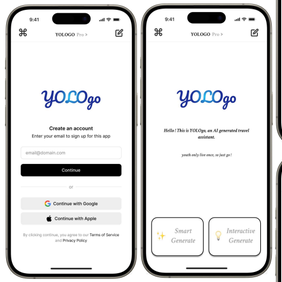
## 04.Evaluation

**Usability test**
Let the users who propose this functional improvement perform the preset tasks, observe their behaviors and record the problems.



# An overview of YOLOgo APP prototype design

## 01. "One-click" and "Interactive" generation methods

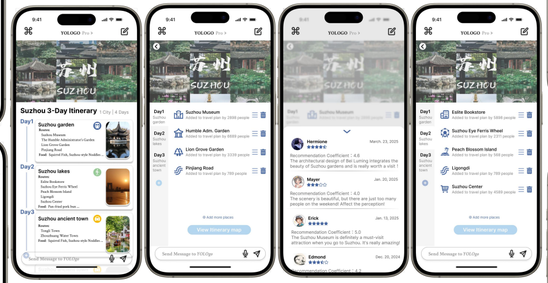


## 02. Style Customization

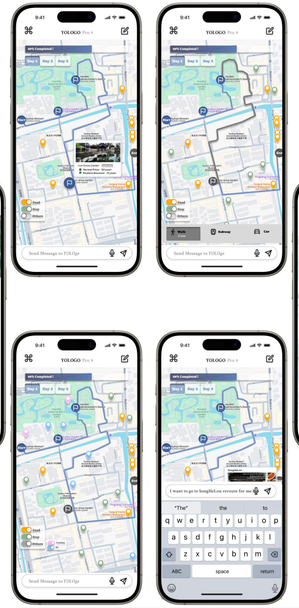
## 03. Student discount information under a low budget



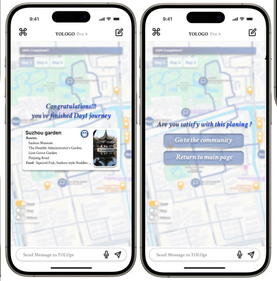
## 04. Detailed strategies that can be adjusted in real time

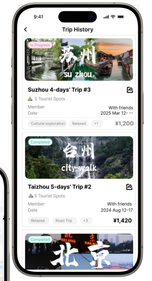


## 05. Present the itinerary planning with an interactive dynamic map

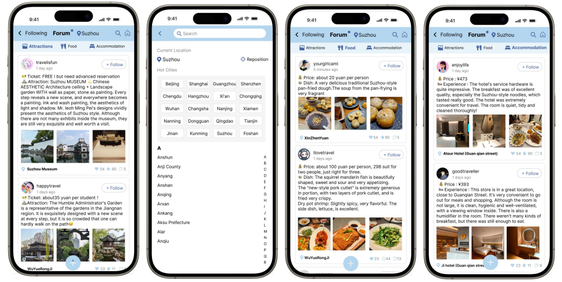


## 06. The preservation and sharing of historical travel guides





## 07. Forum Interaction in one city



# 06.Discussion and Reflection

## Project Result Analysis

### Advantages

**Innovation**: Utilizing generative AI for fully automated itinerary planning, it fully meets users' personalized and real-time adjustment needs. 01

**User experience**: Multimodal input and interactive visualization design effectively enhance the convenience of use. 02

**Clear and simple UI**: The prototype design ensures the realization of all functional areas while making the interface as simple as possible, and logical. 03

### Disadvantages

**Data update**: The connection between some scenic spots and real-time traffic information is lagging behind, and a more real-time data interface needs to be introduced. 01

**Personalized recommendation:** The accuracy of the model when dealing with users' history record. 02

**User privacy and data security**: At present, there is no detailed consideration or implementation in this regard, which will require a large amount of engineering. 03

**Compared with** traditional static travel guides and some tools based on big data recommendation, the generative AI model of this system can achieve the **dynamic generation** and **real-time optimization** of the itinerary, demonstrating a high degree of ***adaptability and interactivity.***

## The Human-centered impact

### Accessibility and User Experience

01.Our system has realized natural language interaction, enhancing the convenience of information acquisition.

02.Through the immediate feedback mechanism, the travel experience and social interaction of users have been enhanced.

### Social benefits

01.In response to the demand for low-budget travel, it helps relieve the financial pressure on students and promotes the development of the sharing economy.

02.The system design takes into account both privacy protection and data security, complies with ethical requirements, and further enhances user trust. (To be implemented)

## Personal contributions and experiences

| 01 | 02 | 03 | 04 |
|---|---|---|---|
| Analysis, organization and prioritization of the overall project requirements; | Design the questionnaire and visualize the data | Conceive the framework structure of the design prototype | Conduct three iterations including evaluation to refine the prototype |

01 **The value of the iterative process**

02 **The necessity of user testing**

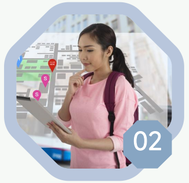
03 **The combination of iteration and testing**

**This project** demonstrates the potential of Generative AI in student travel planning. **Intelligent generation**, **dynamic adjustments**, and **interactive maps** effectively address the inefficiencies, fragmented information, and challenges in integrating user preferences found in traditional planning. However, improvements in real-time data, model accuracy, and **security** are still needed.

## Future Work

### Enhance the connection with other apps

he system should integrate direct links: hotels connect to platforms like Ctrip for reservations, while restaurants link to review platforms such as Dianping or Meituan.

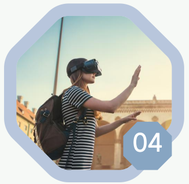




### Integrate real-time traffic information

Integrate the latest traffic data to provide students with real-time travel advice and ensure the accuracy of travel planning.

### Develop multilingual interactive interfaces

To adapt to students from different regions, develop a multilingual interactive interface to enhance the user experience.


### Introduce virtual reality experiences

By using virtual reality technology, students can preview the destination before planning enhancing the intuitiveness and appeal.

# 07. Conclusion and Future Work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