Journey Facilitator: Technical Specification for a Next-Generation Travel Portal

H3Art
Jinan University
International School
Guangzhou, China

CHI'20,, April 25–30, 2020, Honolulu, HI, USA
ACM 978-1-4503-6819-3/20/04.
https://doi.org/10.1145/3334480.XXXXXXX

Abstract
As the tourism industry booms, the demand for intelligent and personalized travel planning tools continues to grow. This project aims to develop an intelligent travel assistant web page, with the core goal of improving users' travel planning experience through technological innovation. This system integrates advanced data analysis and user interface design, provides scenic spot recommendation, itinerary customization and other functions, aiming to solve the problems of information dispersion and functional limitations of existing tourism applications. Through in-depth analysis of user needs and innovative design, this project not only improves the efficiency of travel planning, but also enhances users' travel experience. In addition, this report explores the project's contribution to individual professional growth and potential socioeconomic impact.

Author Keywords
travel planning and management; Human-Computer Interaction (HCI); Web interface; content integration

Introduction
In modern society, travel has become a popular leisure activity, resulting in an increased demand for travel planning and management tools. This project aims to develop an intelligent travel assistant web page, whose core purpose is

Figure 2: The Icon of Journey Facilitator

to provide users with a platform to simplify the travel planning process and enhance the travel experience.

Figure 1: Journey Facilitator

This report details the design, implementation and expected impact of a smart travel assistant web page. The motivation for the project stems from the common problems in the current tourism application market, such as scattered information, limited functions, and poor user experience. By integrating advanced smart technology and user-friendly interface design, our travel assistant aims to provide users with one-stop travel information services, including but not limited to attraction recommendation, itinerary planning and weather forecast.

Requirements Analysis

Requirements Questions

The list of requirements survey questions is as follows:

- What problems do you usually encounter when planning a trip?
- What features would you like a travel assistant website to provide to solve your travel problems?
- What information is most important to you when choosing a travel destination?
- What is the user experience you most want to improve when using travel websites?
- Do you interact with other travelers in the community? What types of content do you expect to communicate?
- What auxiliary functions do you need most when using map navigation?
- What special needs do you have when shopping online or finding mall locations?
- What specific expectations do you have for the weather forecast feature?

Summary of User Requirements

Based on the answers to the above questions, I got the following summary list of requirements:

- Problems often encountered by users include complicated itinerary planning, failure to find localized travel information, and lack of communication platform with other travelers.
- Users hope that the website will provide one-click itinerary planning, real-time local activity information, and convenient community communication functions.
- Among destination information, users are most concerned about local cultural activities, food recommendations and safety conditions.
- The user experience that users hope to improve includes faster page loading speed, more intuitive interface design, and a more accurate recommendation system.
- Most users are willing to share their travel experiences in the community, and they want to discuss travel tips and hidden attractions.
- Accessibility requirements for map navigation include pedestrian navigation mode, real-time updates of

traffic conditions, and scenic spot previews.

- When users shop online and search for shopping malls, they expect detailed product classifications, user reviews, and convenient price comparison tools.
- For weather forecasts, users expect clothing recommendations, UV index, and suggestions for outdoor activities.

Human-computer interaction scenarios

Due to space limitations, we will use figures to illustrate the human-computer interaction scenarios in this context.

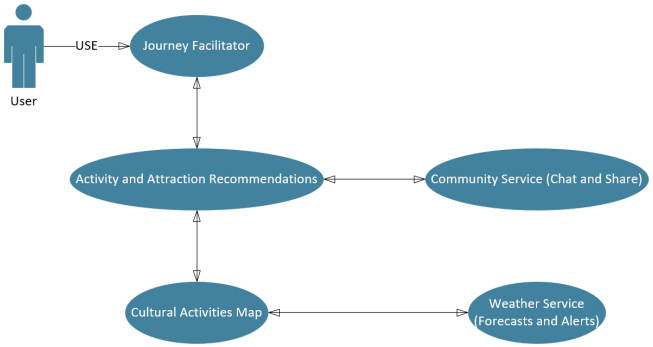

Figure 3: The interaction of a self-guided travel enthusiast, with the "Journey Facilitator" system. It showcases the key services she accesses, including the travel destination search, map service for route planning and attraction recommendations, weather service for forecasts and health recommendations, and the community service where she can share her travel experiences and get feedback.

Product Details

The main objective of this project is to create a versatile travel assistant website that acts as a one-stop platform for travelers to organize and undertake their journeys. It's designed for travelers seeking easy access to data and services for destinations, shopping, e-commerce, navigation, and social engagement. I employ technologies like the React framework for the front end, bootstrap framework for UI design, Java SpringBoot framework for the backend, and MySQL for the database. Tools such as Baidu Maps API for navigation, weather API and integrated social media APIs for community features will also be utilized.

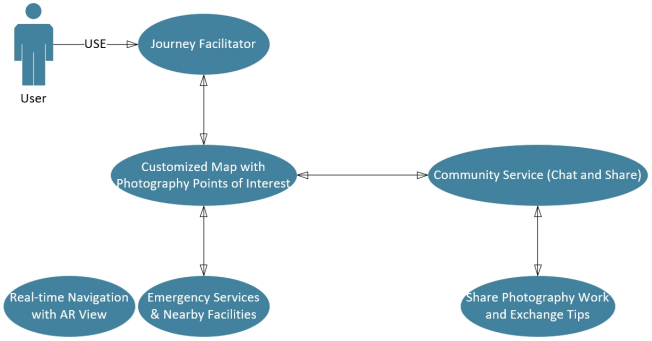

Figure 4: A professional photographer and urban explorer, engaging with the travel assistant website. It details his journey from planning with a customized map of photography points of interest, navigating the city in real-time with augmented reality, to interacting with the community of fellow travelers and photographers. The system also provides emergency assistance, ensuring safety and convenience during his urban exploration.

System Level Structure

Journey Facilitator is a comprehensive travel assistant platform designed to streamline the travel planning process for users by providing a suite of interconnected services. Here's an overview of the primary services offered by the platform:

1. Search Service: This is the core service that enables

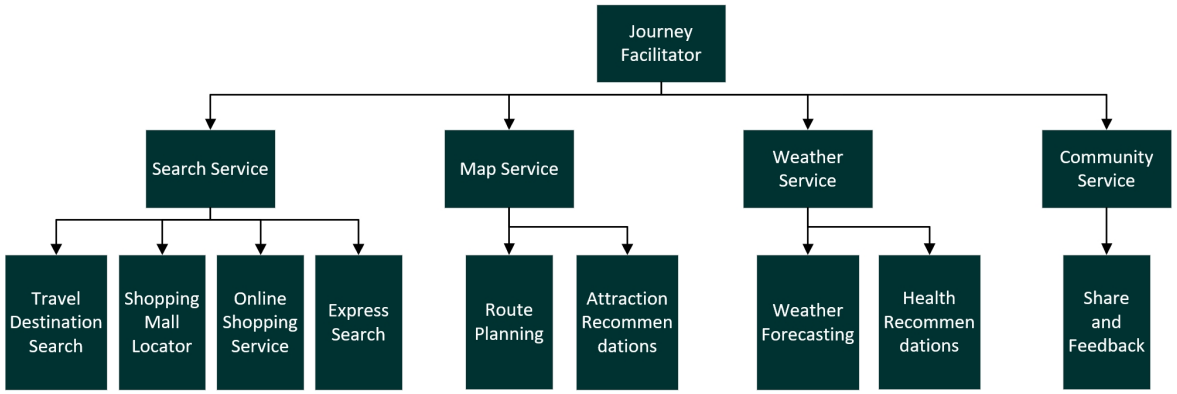

Figure 5: System-level Structural Diagram

users to find a wide range of travel-related information. It includes:

- Travel Destination Search: Allows users to search for detailed information about various travel destinations, including cultural background, attractions, and accommodations.
- Shopping Mall Locator: Helps users find shopping malls in their vicinity or near their chosen travel destination, facilitating a convenient retail experience.
- Online Shopping Service: Provides users with the ability to shop online, offering access to a selection of goods and services that may be required for their travels.

2. Map Service: Aims to assist users with geographic navigation and route optimization, it encompasses:
   - Route Planning: Offers users efficient travel routes and directions to get from one location to another, whether by foot, car, or public transport.
   - Attraction Recommendations: Suggests tourist attractions and points of interest based on the user's location and preferences, aiding in the discovery of new experiences.
3. Weather Service: Delivers real-time weather information to assist users in travel planning, it includes:
   - Weather Forecasting: Provides current and forecasted weather conditions for user-specified locations, helping to plan travel activities around the weather.
   - Health Recommendations: Offers health and safety advice based on weather conditions, such as alerts for air quality or extreme weather events.
4. Community Service: This feature fosters a social ecosystem within the platform, allowing users to connect and share their experiences. It includes:

- Share and Feedback: Enables users to share their travel experiences, post reviews, and provide feedback on the services, creating a community-driven knowledge base.

Interface design

Part of the design interface of “Journey Facilitator" is shown in Figures 6 to 9:

Figure 6: Main Page, also provides shopping mall search and online shopping functions

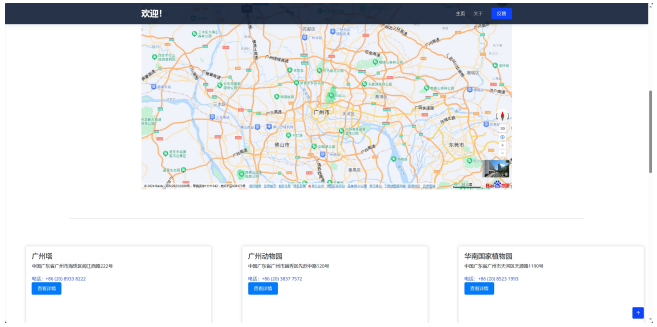

Figure 7: Map Service

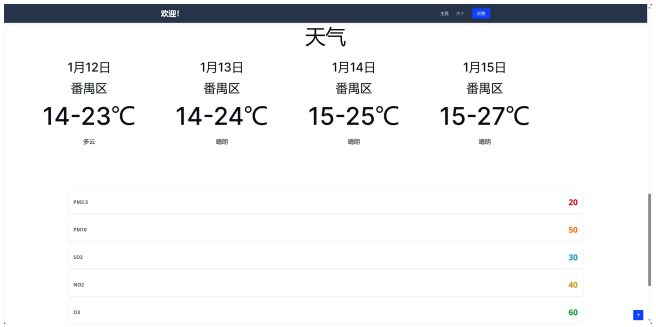

Figure 8: Weather Service

Figure 9: Feedback Page

Intended Significance and Impact

The expected user group is mainly self-guided travelers who pursue in-depth cultural experience and personalized travel services. In terms of novelty/innovation of the project, the project I proposed was innovative in several ways:

- A localized and personalized content recommendation system that not only provides standardized travel information, but also provides personalized recommendations based on the user’s past behavior and

preferences.
- Integrate a community communication platform to provide users with a social space to share and obtain travel experiences.
- Dynamic weather adaptation function, which adjusts recommended travel plans according to real-time weather changes.

The expected global, economic, environmental and social impacts of the project are as follows:

- Global impact: By providing multi-language support and culturally sensitive content, the solution will facilitate the travel experience of global users and increase understanding and respect between different cultures.
- Economic impact: Increased tourism will bring economic benefits to destination countries.
- Social impact: Community functions encourage users to share real travel experiences, promote social communication and mutual understanding, and help travelers prevent problems they may encounter during their journeys.

Outlook

Moving forward, Journey Facilitator aims to transform travel by combining key services on one unified platform. User engagement is expected to grow, driven by customization, community content, and adaptable interfaces for all users. Simplified design and instant updates, along with AI enhancements, will make travel planning more efficient and informative. This project will deepen my expertise in user experience and front-end technology, enriching my professional skills throughout the product's lifecycle.

REFERENCES

[1] J. Antonio Garcia-Macias and Cuauhtemoc Rivera-Loaiza. 2022. Reassessing the H in Human-Computer Interaction. In *Proceedings of the 9th Mexican International Conference on Human-Computer Interaction (MexIHC '22)*. Association for Computing Machinery, New York, NY, USA, Article 7, 2 pages. DOI: http://dx.doi.org/10.1145/3565494.3565502

[2] Tomayess Issa and Pedro Isaias. 2022a. *Sustainable design: HCI, usability and environmental concerns*. Springer Nature.

[3] Tomayess Issa and Pedro Isaias. 2022b. Usability and human–computer interaction (hci). In *Sustainable Design: HCI, Usability and Environmental Concerns*. Springer, 23–40.

[4] Weilin Liu, Yaqin Cao, and Robert W Proctor. 2022. The roles of visual complexity and order in first impressions of webpages: An ERP study of webpage rapid evaluation. *International Journal of Human–Computer Interaction* 38, 14 (2022), 1345–1358.

[5] Aliaksei Miniukovich and Kathrin Figl. 2023. The effect of prototypicality on webpage aesthetics, usability, and trustworthiness. *International Journal of Human-Computer Studies* 179 (2023), 103103.

[6] Sri Lasya Polasanapalli and Pravalika Buggareddy. 2020. Usability Evaluation to design a userinterface by implementing HCI designprinciples. (2020).

[7] Sagar Premchand Yatam. 2021. Evaluation and redesign of an interactive system by applying HCI principles. (2021).