

DESIGN AND IMPLEMENTATION OF TOURISM MANAGEMENT SYSTEM

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Abstract. *This paper discusses the design and implementation of a tourism management system. The system developed aims to use information technology to manage products, services, sales, etc. in the tourism industry in an all-round way. The system provides a visual interface to facilitate customer operation, and achieves efficient data processing and interaction through a front-end and back-end integrated software architecture.*

Keywords: tourism management system, front-end and back-end integration, visual interface, information system.

With the continuous development of social economy and the improvement of people's living standards, tourism has become one of the important leisure methods in people's lives. As an important part of the tourism industry, tourist attractions carry the needs and expectations of a large number of tourists.

Traditional scenic spot management methods often have many problems, such as low degree of informatization, low management efficiency, uneven service quality, etc., which are difficult to meet the development needs of the modern tourism industry. With the continuous advancement and application of information technology, tourism scenic spot management systems based on the Internet and mobile Internet have gradually become an important tool for scenic spot management. This system can help scenic spot managers to achieve effective integration and efficient management of resources, improve service quality, improve tourist experience, and promote the sustainable development of scenic spots. By integrating tourism-related information, convenient services are provided to tourism companies and customers. The tourism management system developed in this paper focuses on user experience and data analysis to improve the competitiveness of tourism products.

The tourism management system mainly includes modules such as tourism information management, tourism route management, tourism strategy management, and management of attractions and hotels. Through these modules, the maintenance and management of tourism products can be realized, including route design, publication of tourism strategies, and management of attractions and hotels. At the same time, the tourism management system can also provide some

convenient functions, such as online viewing of strategies and reservation confirmation. The business functions are as follows:

The front page mainly includes (Fig. 1):

- system homepage: mainly displays various tourist attractions, routes and hotel information;
- scenic spot tour routes: mainly include viewing and collecting popular routes of various tourist attractions;
- scenic spot travel guide: view, collect and publish travel guides for various tourist attractions;
- hotel reservation: view and book hotels in various tourist attractions;
- attractions reservation: view and book tickets for various tourist attractions;
- personal center: view and modify basic personal information.

The backend management page mainly includes (Fig. 2):

- user management: reset passwords for

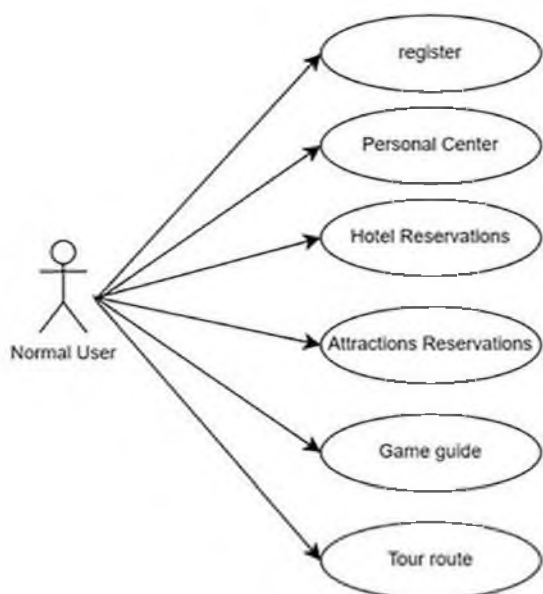


Figure 1 – Common user use case diagram

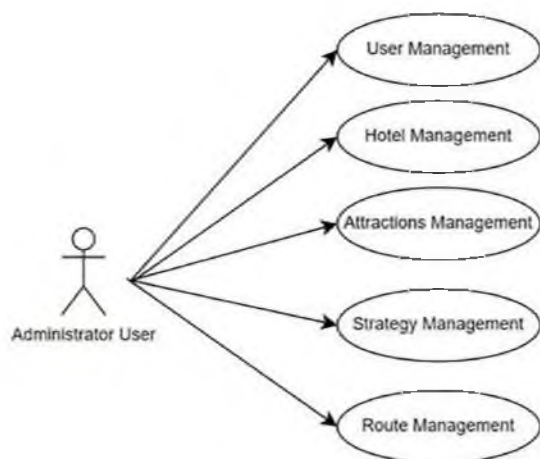


Figure 2 – Administrator User Use Case Diagram

common users;

- hotel management: add tourist attraction hotels, modify the basic information of tourist attraction hotels, enable or disable tourist attraction hotels;

- attraction management: add tourist attractions, modify basic information of tourist attractions, enable or disable tourist attractions;

- guide management: review travel guides posted by ordinary users;

- route management: add tourist attraction routes, modify basic information of tourist attraction routes, enable or disable tourist attraction routes.

After comprehensive system function testing, all functions of the system performed normally and reached the expected quality and stability standards. User login and registration functions,

tourism information management functions, hotel reservation and management functions, scenic spot reservation and management functions, travel route management functions and travel guide management functions have all been verified, and all functions are running well, and no major defects have been found. During peak hours and high traffic conditions, the system still maintains a stable operating state, and has sufficient security protection measures to effectively protect user information.

The tourism management system developed in this paper realizes the all-round management of the tourism industry through information technology. The system provides a visual interface and rich functional modules to facilitate customer operation and administrator management. The test results show that the system has good performance and stability, and is expected to play an important role in practical applications.

Reference

1. Expedia Group Travel Management [Electronic resource]. – Access mode: <https://www.expedia.com/>. – Access date: 24.03.2025.

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DEVELOPMENT AND OPTIMIZATION OF THE UNIVERSITY LABORATORY MANAGEMENT SYSTEM

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Abstract. *The paper analyzes the current situation and problems of university laboratory management, studies the use of digital management tools in laboratory management, studies the development and implementation of intelligent management systems and proposes possible solutions for managing university laboratories.*

Keywords: information system, university laboratory, digital management.

In the university laboratory management system, we adopted Spring Boot architecture design, combined with MyBatis persistent layer framework and MySQL database, at the same time integrated a variety of mainstream technology stack, forming a fully functional, scalable project architecture. The system realizes the laboratory information management, equipment asset management, experiment course management, security management, data statistics and analysis, reservation management and