Development of Tourism Website Based on Java

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Abstract. This article is based on the IDEA platform, using Spring Boot and Vue as the main development frameworks, using MySQL to create a backstage database, and ultimately designing and implementing a tourism website. The website mainly includes functional modules such as attraction inquiry, information management, message management, and user information management. During the development process, this article adopted advanced software development techniques, which shortened the development time and improved the quality of the website. After the completion of the development, it has had a strict software testing, which ensures the normal operation of the travel website.

Keywords: Tourism information, Database, B/S, Spring Boot

1 INTRODUCTION

With the rapid development of mutual benefit network technology, it has now reached a very mature stage. People's life and production have been infiltrated by the Internet, entering the information age. In order to cater to the national "Internet" action plan, the National Tourism Administration issues a new tourism development plan, which requires giving full play to the comprehensive advantages of the tourism industry and closely combining the Internet to promote the innovative development, transformation and upgrading of the tourism industry[1]. Compared to traditional travel methods, travel websites are more popular in this fast-paced era[2].

The tourism website designed in this article takes Sichuan as an example. Visitors can browse website information, and administrators can manage attractions, information, users and other data in the background[3]. This travel website adopts a three-layer architecture. The three-layer architecture mentioned in this system divides the business layer into three layers: data access layer, business logic layer and presentation layer.

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2 REQUIREMENTS ANALYSIS AND FUNCTIONAL DESIGN

Users can view scenic spots, consultation information, and a small amount of message content on the homepage of the website. When users want to leave messages, they need to register and log in. The system starts checking if the user has logged in. If they do not log in, they will be redirected to the login page. If the user does not have an account, they will register first. After registration is completed, they will automatically be redirected to the website homepage.

2.1 Front desk design

On the navigation bar of the front page, there are functional modules such as homepage, Sichuan introduction, play, login, registration, information, and messages. Clicking on these modules can jump to the corresponding page respectively. Under the homepage module, there is a display place for scenic spots and information. Below the free tourism and information are specific and detailed information, while the message module provides a place for users to communicate.

2.2 Backstage management

The backstage management mainly includes attraction information, attraction orders, information, message information, users, etc.

- Attraction information management: New attractions can be added, deleted, and edited in the attraction list;
- Information management: able to add the latest information, delete and edit existing information;
- Message information management: You can view all the messages replied by front-end users and delete them;
- User management: It can query user data, delete and activate user accounts, and modify user account number information.

3 DATABASE DESIGN

Through the demand analysis of the tourism website, the main entities of the website backstage database designed in this article are as follows:

- Tourist attraction information: attributes such as tourist attraction ID, tourist attraction introduction, tourist attraction level, tourist attraction features, tourist attraction images, address, English name, ticket price, and tourist attraction ranking.
- Information: attributes such as information ID, title, content, date, and ranking.
- Administrator information: administrator ID, username, password, phone number, email address, whether enabled, creation time.

- User information: attributes such as user ID, username, password, email, registration time, gender, role ID, and user status.
- Message: attributes such as message ID, message content, message time, and message author's ID.

Through a detailed analysis of the system, table structures such as administrator table, user table, attraction information table, information table, and message table were obtained. A backstage database was created by adopting MySQL[4].

4 SYSTEM REALIZATION

4.1 Front-desk design

The navigation bar of the website has home page, Sichuan introduction, play, login, registration, information, message and other pages. The relevant page can be entered by pressing the jump button, and there is also the weather forecast, which can display the weather information of the place where you are currently. Attractions and information are in the middle, and external links and welcome images are prepared below. The upper part of the homepage is a banner, which can rotate to display pictures of popular tourist attractions. In the middle section, you can click View More to view all the information on the list of tourist attractions. Display information under View Attractions, click on the latest information to view a list of all information. The lower part provides friendly links for tourists to easily access relevant websites and search for information.

The website adopts a front-end and back-end separation architecture, with VS Code as the writing tool in the front-end and Vue3 framework combined with Element UI components to build the page. The data interaction and interface access parts are written in TypeScript language. Using Axios to process requests from front-end pages, encapsulating the required requests into TypeScript files, as using Axios enables asynchronous requests, thus achieving the effect of not refreshing the entire page when some data changes on the page. Whenever a request needs to be sent, the required TS request file is called in the corresponding Vue page. After the request is sent to the backstage for logical processing, the data returned by the backstage will be rendered onto the page[5].The front page display is shown in Figure 1.

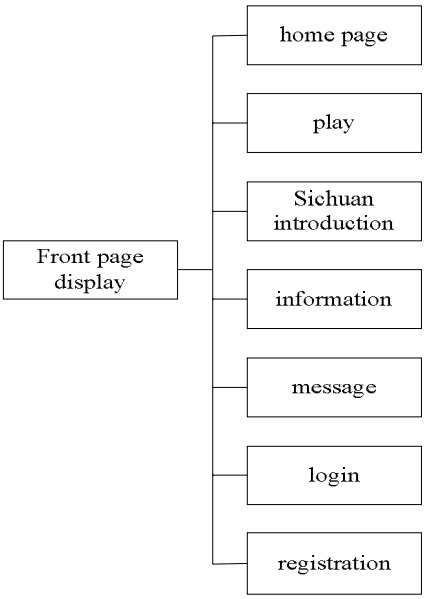

Fig. 1. Front page display

4.2 Realization of backstage management module

The backstage management module is shown in Figure 2.

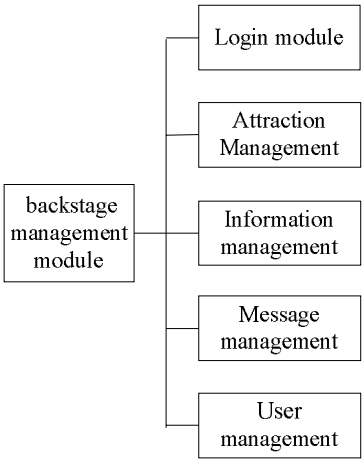

Fig. 2. backstage management module

The backstage of the website is written by using IDEA+Java, and the framework adopts Spring Boot+Mybatis. The specific processing flow of the backstage: The front-end request is sent to the backstage Controller layer, which then receives and calls the

Service layer for logical processing. The Service layer then calls the Mapper interface to access the database. After the SQL statement operation in the corresponding XML file of MyBatis, the corresponding data result is obtained and returned to the front-end page by the Controller layer. After the front-end page receives it, the data is rendered to the page.

1) Login module

After entering this website, users can use some functions, such as viewing attractions, without logging in. However, if they want to leave comments, they need to click the login/registration button on the right side of the website navigation bar. The registered user will first call the abstract method to query whether the user exists in the IUserService, and if it does not exist, add the abstract method to handle the registration. After the registration is successful, the system automatically switches to the login page. The login page mainly involves entering the user name, password and database information through the login interface for comparison and verification[6]. The specific process is shown in Figure 3.

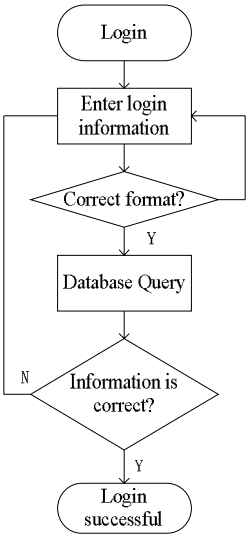

Fig. 3. Login Process Diagram

In the business logic realization class, adopt the Security verification mechanism to perform login authentication, rewrite the Manager() method in the Security configuration class, call the authentication mechanism of the Security framework, use the Manager object, add @ Bean annotation on this method, and add an abstract method to handle login in IUserService. In UserServiceImpl, you can automatically assemble the AuthenticationManager object and implement the methods in the interface[7]. In the controller class, custom processing requests are used to receive login requests and request parameters, and to call the business logic implementation class to implement authentication.

Methods for processing requests are added in the UserController to allow direct access to this path.

2) Attraction management and other modules

The scenic spot management module can display the list of scenic spots, and the relevant scenic spots can be viewed through fuzzy query in the top scenic spot search box. Click Add Scenic Spot to enter the Add page, where you can add new scenic spot information, and click OK to complete the addition. You can click the Edit button and the Delete button behind any scenic spot to modify the information of the scenic spot. Click Information Management to display the information list, and click the Add Information button to enter the Add page to add information content. You can click the Modify button to modify the content of the existing information, and each information will display basic information such as title, update time and sorting.

The message module can manage the message information of tourists, including the message content and message time of tourists, which can be viewed and deleted. User center can add, edit, delete and query user information. When modifying and adding user information, it is necessary to judge whether there is already a user with the same name in the database. If there is, the user cannot be added and edited successfully.

5 CONCLUSION

The tourism website developed in this paper mainly displays the tourism information in Sichuan, which is convenient for everyone to quickly understand the places of interest in Sichuan. Through this travel website, managers can not only quickly release information of scenic spots in Sichuan and implement efficient centralized management, but also easily obtain feedback information from tourists and tap potential customers by viewing the message board. At the same time, tourists can also visit the website to obtain scenic spot information and make reasonable arrangements for travel.

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