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Design of Housing Rental System based on B / S

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Abstract : In recent decades, with the development of China 's society, the rapid economic growth and the accelerating process of urbanization, the whole society 's demand for housing rental and leasing is also growing rapidly. It is of great significance for the housing rental market to make full use of network technology to design an efficient and fast housing rental system. Based on the B / S architecture, this paper mainly uses JSP + SQL Server 2000 as the database. The system mainly includes user information management, housing information management, rental information management, map addressing navigation and other functional modules.

Keywords: housing rental system, B / S, JSP technology, SQL Server ;

1. INTRODUCTION

Through consulting literature and visiting surveys, it is found that most of the house renters belong to successful people in society. They are not very familiar with the operation of computers, and even quite unfamiliar with the Internet environment. For the rental of idle houses, most of them adopt the offline rental mode, which is not convenient and inefficient. The housing rental system is developed for the above problems through repeated research and analysis. The housing rental is transferred from offline to online, which not only facilitates the tenant 's query and browsing of the housing information, but also facilitates the management of the rental housing. This makes the original complex housing rental information become simple and professional.

2. DEMAND ANALYSIS

2.1 Functional requirement

The main functional requirements of this system are user information management, housing information management, rental application management. It is mainly about the addition, modification and deletion of user and landlord information, as well as the management of housing information and rental application. The system adopts B / S architecture, and the data is stored in the MYSQL database for the realization of specific functions.

2.2 User requirements

(1) Register personal information : Create a tenant personal account and improve personal information.
(2) Modify personal information : the user 's personal information can be modified, deleted and other operations.
(3) Query and screening : according to the tenant input requirements to achieve a variety of housing types, location, rental prices and other conditions of the screening, and give the results after screening.
(4) Real-time communication : can realize the function of online communication with the landlord.
(5) Real-time application : can submit a rental application, view the application status
(6) Addressing function : can help users locate the location of the house.

2.3 Landlord demand

(1) Register personal information : Create a landlord 's personal account and improve personal information.
(2) Modify personal information : can modify the landlord 's personal information, delete and other operations.
(3) Housing information management : able to manage rental housing information in the system.
(4) Real-time communication : can realize the function of online communication with tenants.
(5) Application management : be able to view the tenant rental application and refund application.

3. GENERAL SYSTEM DESIGN

3.1 System design target

In order to meet the information needs of the housing rental business, the system mainly follows the following objectives in the design process :
(1) Practicality : System functions should meet the basic needs of tenants and landlords, including information query, release, application and management.
(2) Ease of use : the interface is simple and intuitive, convenient for different computer level user operation.
(3) Security : to ensure the security of user information and housing data, to prevent data leakage.
(4) Scalability : The system adopts modular design, which is convenient for later function expansion and maintenance.

3.2 System functions design

The functional modules of the system mainly include : user information management module, housing information management module, rental application management module and map addressing navigation module.
(1) User information management
Tenants and landlords need to register and log in to the account. Tenants and landlords can modify their own information.
(2) Housing information management
Tenants can screen out the rental houses by providing the type, address and price range requirements of the ideal house, and screen out the suitable houses for selection.
(3) Rent application management
After the tenant can communicate with the landlord, the landlord can submit a rental application for the house he wants to rent. The landlord can view the rental application provided by the tenant and decide whether to agree to the rental application.
(4) Map addressing navigation
According to the positioning function of the tenant 's mobile phone, the current location of the tenant can be obtained. According to the location point of the house selected by the tenant, the best route navigation can be provided to realize the convenient travel function of the tenant.

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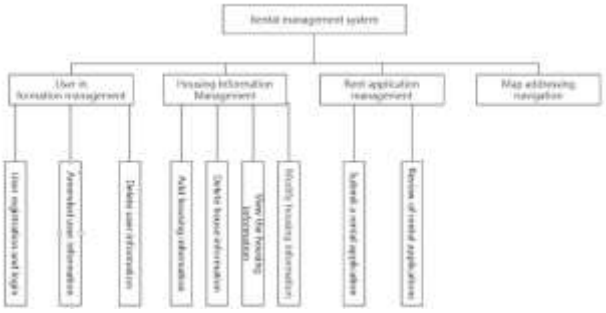

Figure 1. System function module design diagram

3.3 System architecture design

(1) Performance layer

This layer is mainly for the user to see the interface. The performance layer of the housing rental system mainly includes user information and housing information.

(2) Business logic layer

The specific implementation is carried out in the data access layer, but the call is different. The result is generally returned to the presentation layer in the form of Json. The main contents include : user login and registration, housing information management, user management, application management.

(2) Database

The specific implementation is to write the corresponding database code, and use the B / S mode to interact with the database to obtain the data information in the database.

3.4 Database design

Database is an important part of the system, and its design directly affects the performance and stability of the system. This system mainly involves the following data table :

(1) User information table

It is used to store the basic information of tenants and landlords, such as user ID, user name, password, contact information, etc.

(2) Housing Information Sheet

It is used to store the detailed information of the house, including house ID, address, price, area, house status, etc.

(3) Rental application form

It is used to record the rental application information submitted by tenants, including application ID, user ID, house ID, application status, etc.

Through reasonable database design, the data processing efficiency of the system can be improved, and the consistency and integrity of the data can be guaranteed.

4. DETAILED FUNCTIONAL DESIGN OF THE SYSTEM

The detailed design of the system mainly includes : house information query function design, rental application function design and map addressing navigation design.

4.1 Housing information query function design

The housing information query function mainly needs to realize that users can query the relevant housing information in the rental system, query the status of the house, and be able to book the house in the system. The main process is that the user first logs in to the rental system through the user ID, and then the user clicks to query the house information. At this time, the system will enter the system database to query the house information data and present it to the user. After that, the user wants to query the house status, and the system will query the order information data in the system database and present it to the user.

4.2 Rental application function design

The rental application function mainly needs to realize that the user can view the housing information and make a reservation application for the house, and the landlord can review the application in the housing management system, and can communicate with the user and make an appointment to see the house. Which need to query the housing information database and housing management system database. The main process is that the user logs in to the rental system through the user ID, and then the user clicks to query the house information. At this time, the system will enter the system database to query the house information data and present it to the user. Then the user wants to book the house and can apply for rental in the house management system. The landlord logs in to the rental system through the landlord ID, and can review the rental application in the house management system, and can communicate with the user and make an appointment to see the house.

4.3 User information management function design

User information management function is the basic module of the system, which is mainly used to realize user registration, login and personal information maintenance. This function guarantees the accuracy and security of the system user data. In the registration process, the user needs to fill in the user name, password and contact information, the system will verify the legitimacy of the data, such as whether the user name is repeated, the format is correct, and the effective data is stored in the database. When logging in, the system completes identity authentication by verifying the user name and password, and can maintain the login status in combination with the Session mechanism to improve the convenience of use. In terms of information management, users can view and modify personal information, and the system will synchronously update the relevant data in the database.

4.4 Map addressing and navigation design

The map addressing and navigation function is used to display the geographical location of the house and provide users with route planning services to improve the efficiency of house viewing. . By converting the address of the house into latitude and longitude coordinates, the system shows the location of the house in the form of markers on the map. At the same time, combined with the user 's current location, the path planning function from the current location to the target house is realized. Users can also view the basic information of the house by clicking on the map mark to realize the linkage between the map and the housing data. . In terms of interaction, the system supports map scaling and mobile operations to improve the user experience.

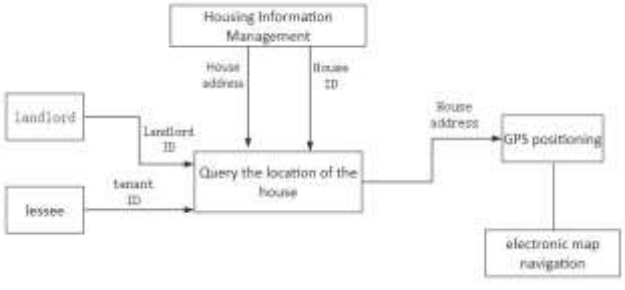

Figure 2 Map navigation flow chart

5. SUMMARIZED AND PROSPECTED

5.1 Conclusion

This paper focuses on the design and implementation of the housing rental management system, and systematically analyzes and studies the overall architecture, functional modules and key technologies of the system. In the process of system implementation, using B / S architecture as the overall design pattern, combined with JSP technology and database technology, the core function modules such as user information management, housing information management, rental application management and map addressing navigation are realized. The system can support users to complete the complete business process from information query to rental application, which basically meets the information needs of housing rental management. Through the development of this system, the following objectives have been achieved :

(1) Completed the system requirements analysis and functional design, so that the system structure is clear and structured ;

(2) It realizes the information interaction between users and landlords, and improves the efficiency of leasing.

(3) Through the database design, the effective storage and management of data are realized.

(4) Improve the convenience and intelligence level of the housing rental process.

In general, the system runs stably, the function is basically perfect, and the expected design goal is achieved.

5.2 Future prospect

Although the system has realized the basic functions of housing rental, there is still some room for improvement in terms of functional perfection, user experience and system performance. In terms of function, the current system mainly realizes the basic leasing management function. In the future, modules such as online payment, electronic contract signing and evaluation system can be further expanded to improve the integrity and practicability of the system. In terms of user experience, the usability and aesthetics of the system can be improved by optimizing the interface design and improving the interaction fluency. In terms of system performance and security, the data security guarantee ability of the system can be improved by introducing data encryption mechanism and improving access control strategy. At the same time, the system architecture is optimized to enhance the stability and concurrent processing capability of the system. In addition, with the development of information technology, the system can also combine big data and intelligent recommendation technology to achieve personalized housing recommendation according to user needs. And expand the mobile terminal application to achieve multi-platform collaborative use, so as to further enhance the application value of the system.

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