

Design and Implementation of Community Based on Web

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Abstract

The technology community is a community of technology enthusiasts with similar interests. In the technology community, you can learn about the latest technologies and the latest developments in front-end development. Learn and communicate with friends who share the same interests and interests, and make progress together. But in most technology communities, there is still plenty of room for improvement in user experience and community openness. This article mainly uses Spring Boot frame and Java + Mysql to carry on the design and the realization to the front-end technology community, users can search and browse articles, evaluate and publish articles on this platform at any time and place by sign up, effectively and quickly carry out the front-end technology learning and communicating activities.

Keywords

Community; MySQL; Database; Java; Spring Boot.

1. Introduction

With such rapid changes in the computer industry, it is necessary to acquire new knowledge and enhance personal strength in time to maintain a firm foothold. Web-based front-end technology community to the majority of workers engaged in the front-end technology industry to provide a learning exchange platform, can help technical personnel quickly master the first-hand information. The community gathers technicians with similar interests together to help each other communicate and grow better, which not only reflects the working attitude of contemporary IT technical workers, but also is a spiritual pursuit. The technical community has become the spiritual home of the majority of technical personnel.

2. Research Background and Significance

With the rapid development of the Internet, in the virtual network, community has become a new platform for people to interact and communicate. In particular, the IT technology community brings together many technical talents in the IT industry, where you can learn the latest progress in the field of work, learn the most cutting-edge technology, master the most advanced knowledge, and meet friends with the same interests [1]. There are many excellent technical communities at home and abroad, such as CSDN: CSDN, founded by Jiang Tao in 1999, is a professional IT community in China. It provides a network platform for developers to expand knowledge and learn online. Foreign ones such as GitHub: code hosting site, the most important site for developers. The advantage is there are a lot of resources and a lot of good programmers, you can make a lot of good friends. In a word, the technical community is the place where technical people gather and the best place for technical exchange. Therefore, in order to keep up with the development of social trends, facilitate technical personnel to learn and exchange, so that the technical community has become a new platform for technical personnel to communicate and learn, the construction of technical community is essential.

Studying and designing a front-end technology community can deeply appreciate the increasing value and influence of the technology community today, understand the development process and future development trend of the technology community, and master the development technology needed for the design and implementation of the technology community [2]. Through the independent design and implementation of front-end technology community, improve the ability of programming and database development. The establishment of the Front-end Technology Community aims to provide a professional, forward-looking and comprehensive technology exchange platform, and is committed to promoting the innovation and dissemination of knowledge and technology in the field of front-end development. This topic aims at using Web front-end development technology, design and realize the technical community. The overall development of the project utilizes SpringBoot framework to present a front-end technology community [3]. On the basis of completing the basic functions, we strive to improve the user experience and content, so as to create a more perfect technical exchange platform for technical personnel.

3. Relevant Technology Introduction

3.1. Eclipse Development Environment

Eclipse is an open source, Java-based extensible development platform. On its own, it is just a framework and a set of services for building a development environment from plug-in components. Its characteristics are: free, pure Java language writing, installation free, strong expansibility [4]. Eclipse itself as an open source software project, it mainly contains three sub-projects: platform sub-project, Java development tools (JDT-Java) sub-project, plug-in development environment (PDE-Plug-in) sub-project. Among them, the Java development tool JDT provides developers with a large set of integrated tools, mainly for Java applications to provide programming interfaces (APIs). The Eclipse Software Development Toolkit (SDK) is a collection of third-party software that consists primarily of Eclipse project software and other development sources. Second, the plug-in development environment (JDT) provides an environment for plug-in development and testing, such as creating plug-in manifest files, defining extension points, and so on.

3.2. Java Introduction

Java is the general term for the Java object-oriented programming language and the Java platform. It is an object-oriented programming language but is not a pure compiled or interpreted language, it is a hybrid language [5]. The advantages of compiled language and interpreted language in one, that is, the execution speed is fast, only need to write and compile once, thus gradually developed into a high-level language. Not only absorbed the advantages of C++ language, but also abandoned C++ in the difficult to understand the concept of multiple inheritance and Pointers. The Java language has two characteristics: it is powerful and easy to use. As a representative of static object-oriented programming language, Java language perfectly implements object-oriented theory and allows developers to write complex programs with elegant thinking. Java is simple, object-oriented, distributed, robust, security, platform independence and portability, multithreading, dynamic and so on.

3.3. MySQL Introduction

MySQL is a database management system based on SQL as well as a relational database [6]. It has the characteristics of small size, strong function, easy to use, easy to manage, fast running speed, safe and reliable. Users can also change their source code or redevelop it to suit their needs, if desired. MySQL can run UNIX, Linux, Windows, and more on a variety of platforms. More importantly, it provides APIs for C, C++, Java, PHP, Python, etc., so that it can be easily added to a variety of applications.

3.4. Spring Boot Framework

SpringBoot is described as a framework but more like an integration of all project development frameworks [7]. It is not a new framework, but it is configured by default to use many frameworks, such as Maven, which integrates all the JAR packages. The IDEA behind SpringBoot is to run a project faster, to build a Web project with only a few configurations and to automate the generation of ideas. In short, SpringBoot can easily, quickly and conveniently build a project, greatly improving the development and deployment efficiency.

4. System Analysis and Design

4.1. System Demand Analysis

Through functional requirement analysis on the design and implementation of the system, the main function of the system is to realize the publication, comment and reply of users' articles, so as to achieve the purpose of learning and communication among users [8]. On the basis of the basic article browsing, publishing and commenting functions, the system can be extended to realize other functions, such as adding attention, online communication, message reminder, etc.

4.2. Feasibility Analysis

In the Internet era, most people look for various resources through the Internet to enrich their spare time life, improve work efficiency and understand the trend of social development. Technical community is based on the network platform, designed for IT technical personnel to develop a simple, open and efficient technology sharing and exchange platform. Front-end technology community is the main content of the front-end development, which can enrich the work and spare time life of front-end developers. Users browse, comment and publish articles to achieve the purpose of technology sharing and communication, to show personal style, exercise personal ability and increase knowledge reserve. The development of technical community should keep up with the trend of The Times, establish the Internet thinking, adhere to the combination of online and offline, online communication and learning combined with practical work results, and the design and implementation of technical community is imperative.

4.3. System Functional Module Design

Through investigation and analysis, the system of technical community includes two functional modules: tourists (unregistered) and registered users. Visitors can view articles on the front page, but to post, comment on, and so on, they need to register or log in. User personal management: click the navigation bar user name will appear a drop-down list, including my articles, personal information, etc. "Profile" can view or change user information, etc., "My articles" can view their own articles, article comments and replies.

5. Detailed System Design and Implementation

The system divides users into tourists (unregistered users) and registered users. Tourists can enter the community to browse or search for articles, but functions such as Posting and commenting articles require visitors to register and log in. The following content will introduce the design and implementation of each function of the system in detail.

5.1. The Home Page

On the home page of the community visitors can only browse, search articles, post articles or comment articles to express their views need to register and login. When searching for an article, enter the value of the search in the Input box, click Button to search, request the

background interface, and return the searched detailed information and display it in the article list. The default page displays a list of all articles, 10 per page, using a limit query to achieve the pagination, the page to achieve the current number of pages. Popular articles use ul and li tags for typesetting. Click on each item to jump from page to page through a tag link. The top navigation is designed as a header common fragment that is inserted into each page of the system.

5.2. Registration and Login Function Module

Users can post articles, comment, online communication and so on through registration and login in the community home page. The interface layout uses two div labels in HTML, left and left floating splicing, to achieve the parallel effect of two box labels. When registering and logging in, fill in the user information in the INPUT box, click the registration or login button, request the background interface to return the user information by POST method, and judge whether the login is successful. Also post a request to the server, submit the user registration information to the back end, save it to the database and update the database.

5.3. Publishing Articles

Users can publish articles after logging in. Successful articles will be updated to the home page of the community in real time. By searching the title or tag of the article, users can also query and browse. Add-on rich text editor is used to compile the article content. Input, form and div are the tags of HTML, which can edit and beautify the text entered by users, similar to the office software Word in the operating system. You can add tags to the article, add tags in the module, the development language/platform architecture/tools/server use jQuery to achieve TAB switching effect. Click publish the article, the content of the whole form from is passed to the background interface in JSON format to save the data to the database; At the same time, the article list on the home page can be queried to the newly released article.

5.4. Comments

While viewing other users' posts, users can leave a comment at the bottom of the post expressing their own views. You can click to view the comments of other users' articles and reply to each other to realize communication and interaction. Click on user articles to view all comments; Add a Button control, click to generate an event, use the TextArea tag, which is a multi-line text input control to fill in the comment content, the content will be submitted as a string and inserted into the database, and displayed in the comment content list.

5.5. Personal Center

Personal information is the most intuitive display of a person's elegant demeanor, attract the attention of other users. The Personal Center displays the user's basic information and allows you to upload or replace your profile picture. Click the profile and call the background interface to return the user's detailed information. My followers/my fans/article favorites etc. use jQuery to achieve the TAB bar switching effect for easy viewing by users. After modifying personal information, click "Submit Modified Information" to submit the entire content of the form from to the background through POST request, and the background will modify user information according to the content. Display the user's existing avatar through the img tag. Call input tag, data is file type, image upload using H5 formData method, at the same time add contentType: false and processData: false in Ajax, the image resources and parameters are stored in formData, realize successful upload image.

5.6. Online Communication

In order to facilitate and efficient communication and learning between users, the system realizes the function of online communication and can set up group chat for multiple users. Online communication realizes the establishment of group chat among multiple users, and

messages are sent and updated in real time. This feature is based on the WebSocket protocol. The principle is that the browser makes a connection request and the server responds, which is called a "handshake". After a "handshake", a channel is established between the two to realize data transmission. The chat content sent by the user will be actively pushed by the server to the browser and displayed in the group chat interface.

6. System test

6.1. Purpose of the System Test

The main purpose of software testing is to ensure software quality. In the testing process, testers expect to find out the errors and defects in the software and correct them with the least manpower, material resources and time [10]. By analyzing the causes and characteristics of errors, it can help project developers improve. Help to design targeted detection methods to improve the effectiveness of the test. Provide feedback to developers or program managers while improving software quality, information prepared for risk assessment, and avoid business risks due to potential software defects and bugs after release.

6.2. Method of System Test

This system adopts black box testing, which is usually used in the system testing and acceptance testing stage of software products [11]. Black box testing, also known as functional testing or data-driven testing, is used to check whether each function of the system is working properly. Black box testing mainly means that testing should be carried out at the interface of the software. This kind of testing method regards the test object as a box, testers do not consider the inside, only need to know the input and expected output, and check whether the function meets the requirements.

7. Summary

This paper mainly involves the design and implementation of Web-based front-end technical community. The system sets two modules for different role users: registered user module and tourist (unregistered user) module. Registered users can browse, publish, evaluate articles and communicate online on the home page after logging in. Visitors can only search and browse articles, not experience other functions. This community is easy to operate and helps users understand front-end development and improve their ability.

The Web-based front end technology community is complete, but there are still some problems, such as the design can be more beautiful, the system can achieve more functions, the database table connection is not tight, and so on. Real knowledge comes from practice. The whole process of this design made me deeply realize my own shortcomings. It is an impressive experience for me who is about to enter the society. I will continue to improve the system, live learning and use classroom knowledge, so that the practical ability to further improve.

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