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DESIGN AND IMPLEMENTATION OF A WEB-BASED COMMUNICATION COMMUNITY FOR THE ELDERLY PEOPLE

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ABSTRACT

The theoretical part of this paper introduces in detail the concepts and technologies related to the Java Web-based communication community for the elderly people, the characteristics and usage of each model, environment and framework. The practical part focuses on the feasibility analysis, design ideas, design goals, etc. The main functional design, database design, and implementation of the project are also explained in more detail.

KEYWORDS: Communication Community, Web-based, elderly people, Java.

1. INTRODUCTION

In 2017, we completed a project of Science and Technology Innovation Project (New Seedling Project) for college students in Zhejiang Province, and our research topic was "Exploring a new model of home care for urban empty-nest elderly from the perspective of "social support"". For this purpose, we conducted a lot of field research in Hangzhou city, divided by old city, new city and urban village. In the hot summer, we visited elderly people from various classes and different status quo. There are those who live in modern communities and enjoy the state retirement salary and their old partners to enjoy their old age peacefully, those who live in old private houses waiting for their children to help them, and those who are in dilapidated mountainous areas waiting for the state to issue poverty subsidies. The old people are divided into various categories according to too many filtering items such as economy, children, education, birth, etc.; combined with some community committees, street offices, village cadres, and random passers-by we interviewed in the community, their views on old age are all different.

This project adopts B/S network structure model, MyEclipse development platform, MySQL database, Tomcat and other development technologies. The front-end part mainly includes user registration and login, browsing, searching posts, board viewing, reading posts, replying, posting, viewing news, posting comments, file uploading, deleting and other functions; the back-end part mainly includes user management, board adding, management, theme management (add essence, top, delete, etc.), modify personal information (password), news (comments) management, etc.

2. Development Model

The target group of this project is the elderly group, and also belongs to the Internet users. For this reason, a more practical B/S three-tier structure was chosen for this project.

The B/S architecture has all the advantages of C/S, but also has the following unique advantages:
Openness of standards: The standards adopted by B/S are all open, non-specialized, determined by standardization organizations rather than by a vendor, and the related applications are universal and cross-platform.

Project maintenance (upgrade) way easy: B / S architecture of the software in the management and maintenance of the server only need to carry out certain operations, while the user-oriented client is only a browser function, for the user does not need any maintenance initiatives, in the maintenance, the user only need to wait patiently for the server to restart. Because maintenance is performed on the server side only, it saves considerable development and maintenance costs for projects using this architecture.

The client experience convenient both friendly interface: unified browser will be able to provide interface support for B / S users, without downloading other auxiliary software. At the same time, the client does not need to access data, complex data calculations, but only needs to do a display function, the configuration requirements of the client is relatively low.

In summary, the B/S model has a superiority that C/S does not have: it makes the development and maintenance of the project easier, and it is particularly suitable for online information distribution. Therefore, I chose to develop my interactive community for seniors based on the B/S model architecture.

3. Target group needs research

After a lot of research and literature study, we analyzed the needs of the project in both theoretical and practical aspects, and put forward the following needs of the elderly groups.

According to the research on the elderly group and people who have more contact with this group, combined with relevant academic papers, it is found that the elderly group actually does not feel strong rejection of using computers and the Internet itself, and most of the elderly who do not want to operate computers can adapt to the basic requirements of computer daily use after a simple learning process.

However, as a "sunset" group, it is difficult to judge the learning ability, using ability and operating ability of the elderly for computers. The front-end operation is simple and easy to understand, and no more than three steps are needed to realize a certain operation. At the same time, for this group of people in the project should do a good job in the use of tutorial writing and human customer service technical support, so that the elderly in the use of the project encountered all kinds of problems can be timely and effective help and solution.

During the research, we found that old age and mobility problems are the norm for the elderly. For this reason, I designed a news section for the project, placing targeted pages for the elderly, which can reduce the time for some of them to go out and buy and pick up newspapers and magazines. At the same time, considering that most elderly people have a strong desire to communicate with others, I designed a community forum section for them to interact with each other.

Although the target group of the project is the elderly, it is not practical to leave the back-end management of the project to the elderly, therefore, the back-end of the project should be operated by specialized technical personnel. Therefore, the backend of the project should be operated by specialized technical personnel. The needs of the project are different from those of the elderly, and there is no need to overly pursue simplicity in the implementation of the functions and make the functions missing. However, the efficiency of the backend is still our main consideration, we need to be able to quickly and accurately solve the conflicts when the project operation problems arise. For this reason, the requirement of efficient backend management is self-evident.

4. Topic Related Modules

The arrangement of the forum topic posts is achieved by the jsp tag library < c:forEach> plus to achieve, use this tag to traverse the Hibernate database mapping to achieve the arrangement of the list of posts, in the arrangement of the same time to verify whether each post data is refined or top, if there is, then add the corresponding icon after the topic, the top post priority display, other posts are released to The top posts are displayed first, and the other posts are sorted by posting time.

The main body is displayed as follows.

The display of the board and the display of information when entering the post is achieved in the same way, except that for the display of data in the background there is a simple filter (the board shows the posts corresponding to the board id, the entire post shows the replies to the same subject post id and sorted by time) users can click on the board name to jump to the page showing all the subject posts of a board.

Registered users can post by clicking on the Post New button (login will be prompted when not logged in). After the user finishes inputting information and clicks the submit button, the action will get the current time and record it with a new Date () function, and transfer the data to the database by calling the DAO layer in the action. Similarly, the postback function is also implemented in this way, except that the information that can be entered when replying to a post is reduced.

The relevant pages are as follows.

The implementation of the news section is actually relatively simple, the entire interface using html framework composition, a total of four jsp files, including the head, news section, the right dynamic box, the bottom part. It is combined by <jsp:include> tag to achieve the display effect.

The header section mainly realizes the display of website name and the function of navigation bar. Click each board to jump to the relevant board page. The display method of news in the page is the same as the display method of forum topic posts.

And the display of popular news and latest news on the right is thanks to the application of application. By iterating through the database mapping, the news hits in the database are sorted as sorting keywords, and the sorting results are outputted, and the frontend gets this mapping and displays it in order of the highest to lowest popularity.

Unlike posting topics, the comments under the news section of this project are anonymous comments. The project only records the user's ip information and transfers the user's ip and the content of the comments to the database.

Clicking on admin login at the bottom of the page jumps to the admin login screen. The login uses the same jQueryajax method as the user login to achieve an asynchronous display during the login process. When the account password and the mapping through the database are judged to match. At the same time, the administrator can change his password and display the current time in the upper right corner of the administrator interface.

Click post information management, enter the corresponding function, select the post, in the subject post can be set by clicking set top, cancel top, set essence, cancel essence, delete to achieve the corresponding function, while the operation will be passed to the database for data related operations. In the reply post, the same operation will be performed to delete.

Click on the registered user management to enter the corresponding page, you can view the corresponding information of all registered users, click on delete to delete this user data. The advantage of doing so is that you can keep the relevant information, and the administrator can turn back the user information by checking the database information when encountering some unexpected situations.

5. Project Testing Program

Design use case illegal and legal input co-exist. In practice, some users will generate some illegal inputs, such as pressing the wrong keyboard or using unspecified commands. Therefore, we need to give correct alert output for illegal input, and avoid generating incorrect output when illegal input is used.

Focus on back testing. Since errors can be generated at any time, it is inevitable that new errors will also be generated when the errors are modified. For this reason, after modifying the program, you need to test whether the errors are really eliminated with the previous use cases.

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Taro Denshi received the B.S. and M.S. degrees in Environment Engineering from Shibaura Institute of Technology in 1997 and 1999, respectively. During 1997-1999, he stayed in Communications Research Laboratory (CRL), Ministry of Posts and Telecommunications of Japan to study digital beam forming antennas, mobile satellite communication systems, and wireless access network using stratospheric platforms. He now with DDI Tokyo Pocket Telephone, Inc.