Research and Implementation
of Customizable Dynamic Website Management System

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Abstract. In view of some current self-help websites system have fixed template. Users have little independent selective in the process of building web site. This paper puts forward customizable dynamic web site management system which adopts Browser/Server structure model. Using the JSP technology, make all parts of the website division independent. In addition, we also use AJAX technology to make each module of website in drag, thus enhancing the template can be customized greatly.

Keywords: Dynamic-Website; SelfBuild; Customizable; AJAX.

1. Introduction

With the rapidly development of Internet, almost all departments have their own website. With website, company, enterprise can public and sale its products and press news easily and rapidly with lower cost. However, compared with the huge demand of site, there are few people who truly master the staff of website development. In addition, websites have problems with long development cycle, high cost and it is difficult to maintain. Website is composed with front end and backend. The front end shows information to users, and the backend manages the operation of the front end. Quite a lot of companies and schools found although the website have different styles in front end, they are similar in the content type. So we consider listing the similarities and differences of these websites, based on this information, we can develop a customizable dynamic website manage system. Users choose what information shows on the front end and make the operations in the backend according your former decision. This method breaks the limitation of templates and improves the flexibility to build a website. Users without any knowledge of programming language can build his own website easily. It improves efficiency a lot and also reduces the costs. This article mainly introduces the design and implementation of the backend.

2. Main Technical Characteristics

The system divides the entire site into different parts and each part is tied closely together to one system to manage each part unified. Each option of the background has a clear classification, providing a simple and easy use, user-friendly management interface[1].

The backend of the customizable website management system proposed by this article, develops with MyEclipse, uses JSP technique, all of the website modules dynamically uses MySQL, it made users easy to insert, delete, update the data and to shows each module's name. This system use B/S mode, without considering client platform, simplifies the requirements of the client software. The system also uses AJAX technology, making it possible to drag modules of the website easily and build a website which meet users' ideal style. At last, use InstallShield to package the system. There is no need to configure server and database

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information when users use it for it start all services when finishing install the system. Users can log in the website through browser with default account and password to manage the website information.

The backend of the customizable website management system proposed by this article mainly has 3 features. One is template and the style is customizable: system provides a lot of optional templates for users. By previewing template pictures, users can choose which template should be used and define the display style of the template, for example, the content module which will display in the template can be chosen by users and the background color can be set. Content modules can be combined freely. The other feature is the content of webpage is customizable, it support the insertion and deletion of the logo, navigation bar tabs and webpage content titles. Users can freely modify the logo which shows in frontend, the contents of the webpage and the titles of the content modules. At last, the system inserts the specific content into the content modules according to the titles set before. This breaks the fixed limitation of pre-customized template. With a SmartUpload.jar, users can upload and download various kinds of files easily.

3. SYSTEM Architecture Module

Web site development system can be customized by using the overall framework of hierarchical thinking, this will help to maintain the integrity of software architecture and scalability, while calls between layers has been reduced coupling the system to achieve low coupling, high cohesion to facilitate the secondary development [2]. System use case diagram is as Figure1:
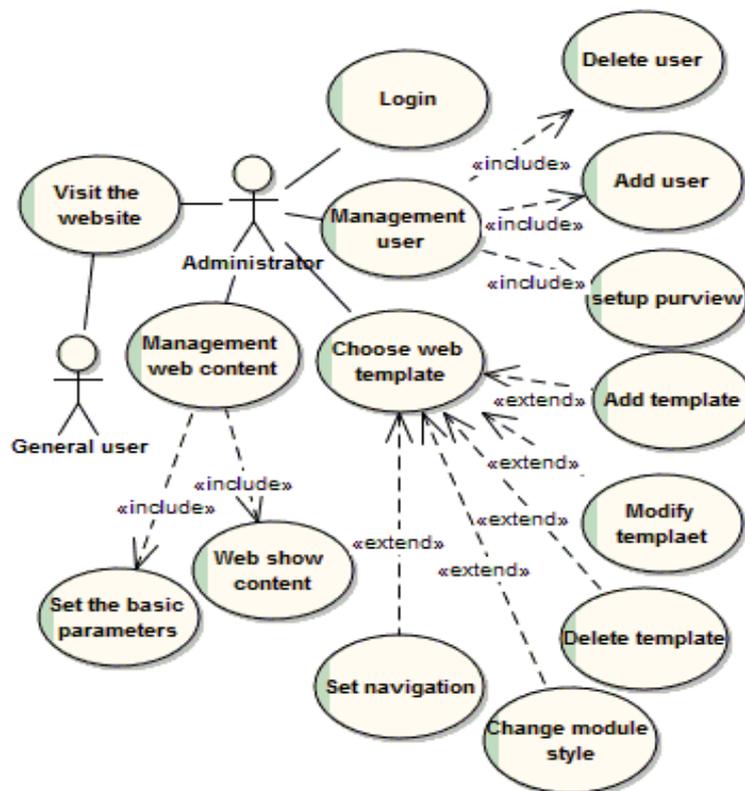

Figure1. Customizable dynamic website build system use case diagram

4. Realization Of System Functions

Each website has its own planning, the overall structure and corresponding columns. The web site content, the structure and the navigation systems can be designed through user's operation. We can see the website, building with our customizable dynamic website generation system[2], could be customizable in each of its part. These features are achieved through the database. Each module has a data table corresponding. It's determined whether to show according to a flag in the table. The system architecture shows in Figure 2.
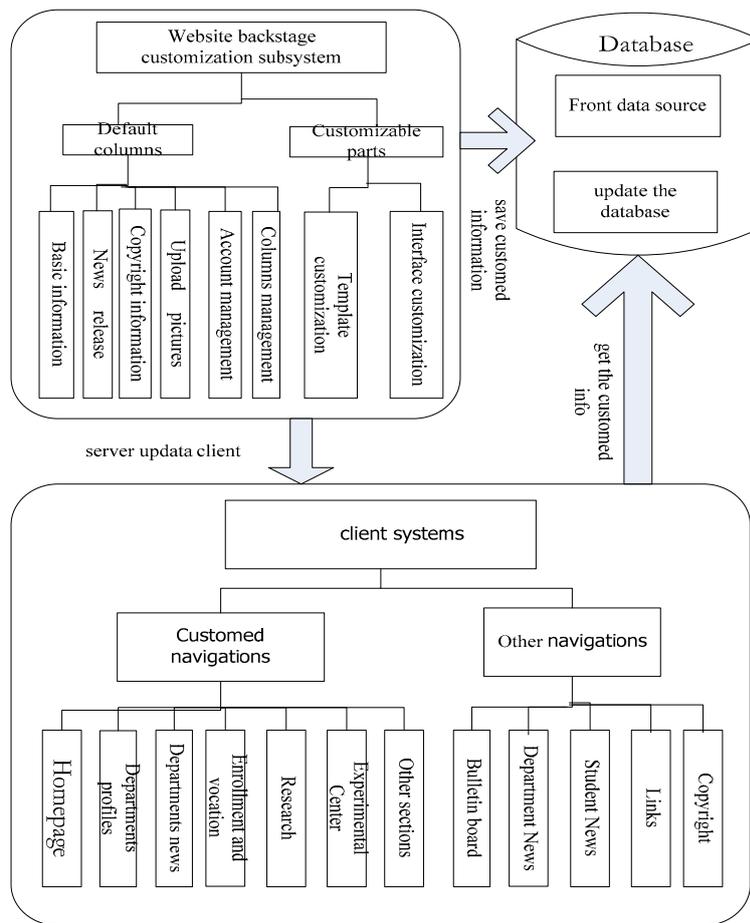
Figure2. System architecture design

4.1. Web Site Templates Can Be Customized

The system described in this article provides a number of modules for users. Once users enter the back of website which he has built, the first thing is chose the module. We use a flag stored in the database to determine which style of modules he has chosen. A homepage named index.jsp is at the same level with these templates. This page could get corresponding URL, which the chosen template has, from database dynamically, that is, the page redirects to achieve. And this URL is dynamic stored in the database through choosing to the template. So we needn't modify the address in the browser to achieve directional selection template. Table Ⅰ shows the data.

Table I . Template customization data table

id	url（template）	flag（template type）
1	web1/index.jsp	school

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4.2. Site Navigation Bar Can Be Customized

After selecting the appropriate template, we start to design the foreground. The first thing is to custom the content of the navigation menu bar. System will afford several default basic menus, users could select one based on his necessary, and decide whether display a corresponding secondary menu. Furthermore, the name of the corresponding menu could be modified too, reflecting the flexibility of custom fully. Once chosen, the navigation menu section will establish links to the related content page. This contact is built through getting corresponding content from database. We set a filed in the database to store URL of local content. When request happened, the link will point to this URL [3]. Each link-page's content could be modified through the background operation. The database table shown in table Ⅱ..

Table Ⅱ. Navigation data table

id	navigation bar	Whether to display	Links page	Secondary Menu
1	homepage	1	index.jsp	...
...	...	...	...	...
n	...	1	Other.jsp	...

4.3. Customization at Homepage

Users can choose the content module which will display on the homepage. System firstly provides some default content modules on the index page. With the server settings users can add or change or shield the corresponding modules' display. Each module aquires the related contents (including the title of the website) from the database, and users can also add or delete the modules based on his preferences. In order to enhance the user experience, we use JavaScript techniques and AJAX technology to realize arbitrary module drag, making the page layout more flexible. Recording and saving the location information in the process of dragging the modules. Then the client visits the database to update the index page. The location information stored in database is as follows: (tableⅢ)

Table Ⅲ. Module data table

id	name （ homepage module name）	IS Appears in the Home
1	News	1
...	...	...
n	Other module...	0

4.4. Other Information Configuration

Some of the basic website information stored in the database such as the login information, website's name, logo, copyright and so on, which users can update based on their requirements. The data table as shown in table Ⅳ.

Table Ⅳ. Website basic information data table

id	Site name	logo	flash	Footer information
1	XXX	url	url	Related Content

5. Conclusion

With the rapid development of Internet today, people have already experienced a lot which has never been experienced before. Instead of one lonely and unchangeable way, websites had developed in much more diverse modes because of the multiplicity of Internet information. In order to fit the customers' changeful requirement, our customizable dynamic website management system has been established for solving the problem. And it is able to improve user experience greatly. It would be possible for the websites to be a "customer-tailor" with the background of "customizable dynamic website generation system" mentioned in this article which could satisfy the requirements. Using AJAX could make it easy to drag the modules, breaking the "limitation" among modules. Establishing the whole website is just a simple set and choose based on the system wizard. Users could greatly save development cost by using this system. The development speed and efficiency will also be improved obviously. At the same time, management of website information will be more convenient and user-friendly, and the requirements of technical management capacity will be reduced.

6. Acknowledgements:

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