



Design and Implementation of Gym Management System Based on Web

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Abstract. With the development of China's economy, more and more people spare no effort to participate in fitness activities and join in the gym exercise. In order to adapt to the rapidly developing social market and meet the needs of the public, the gym management system with comprehensive functions is essential for both operators and participants. Design a gym management system with practical application value, aiming to carry out the comprehensive management of all kinds of data and information generated in the daily business of the gym, and assist users' work. The architecture mode of the system adopts Browser/Server mode, the technical standard selects JSP in response to the client request, dynamically generates Web web page as the front-end interface, uses MySQL database to design data tables to store data, and IDE uses Eclipse.

Keywords: Gym · data management · online booking · B/S architecture

1 Introduction

1.1 Research Background

Under the background of improving living standards, residents' life happiness index, fitness has slowly become the people in the busy work one of the best way to release work pressure, so the fitness industry is developing rapidly, has become a lot of people preferred entrepreneurial direction and investment direction, but most of the gym management methods in China are still too old, and the management concept is also too traditional, which seriously restricts the development of China's fitness industry. Therefore, in the rapid development of Internet today, combining the network and IT technology has become a mainstream trend [1].

1.2 Domestic System Introduction

In the domestic market, there are gym management software of Feiyue, Bell, Flying and other brands. Most of these software is developed based on PB and Delphi, and the market share is not high. Most of the gym management software market is occupied by some foreign brands [2].

Most of the systems at home and abroad have not developed the function of online coach booking coaches, resulting in the contact information of members and coaches offline, resulting in the opacity of the information and price of private education [3]. With the popularity of fitness and the development and extension of Internet technology, the exchange and cooperation with domestic and foreign institutions is also an inevitable trend in the fitness industry. In order to provide professional fitness services to consumers, the implementation of professional and scientific management is the common goal of the club [4].

2 Development Environment and Key Technologies

2.1 MyEclipse

MyEclipse is a powerful J2EE integrated development environment that enables the development of the database and J2EE. By consolidating application servers, MyEclipse also enables platform and installation support, and improved Java EE 5 and Spring features.

2.2 JSP Technology

The essence of JSP is to embed the tag and Java code segments of JSP into the traditional HTML static pages, and then the JSP compiler compiles the JSP into Servlet. During access, the tomcat server receives a webpage request to respond to the client's access request, performs the Java code segment of the Servlet, and returns the results to the front end in the form of a static webpage HTML [5].

3 Overall Design of the System

3.1 System Module Design

1. Member addition module: this module realizes the function of adding new users to membership to membership and displaying the member information.
2. Login module: This module implements the user's login function, judges the user's identity level, makes the user enter different interfaces, and returns some prompts if the information is wrong.
3. Modify the password module: This module mainly implements the function of giving the administrator to modify the new password.
4. Membership information management module: This module realizes the function of unified management of member and coach information, including viewing, modifying and deleting information.
5. Coach information management module: This module realizes the function of administrator viewing and deleting coach information, and realizes the operation of adding, modifying and deleting coach information.
6. Complaint information management module: This module enables the function of the administrator to view, delete and reply to the complaint information.

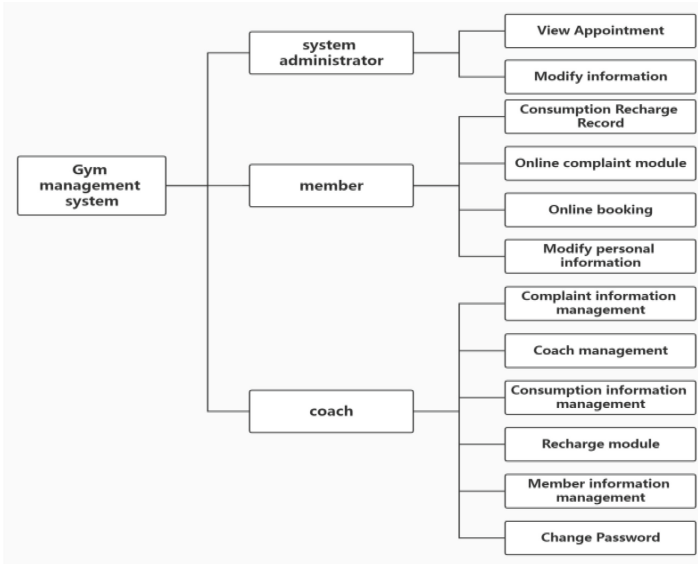


Fig. 1. System function module diagram

7. Modify personal information module: This module realizes the function of members to edit personal information.
8. Online coach appointment module: This module realizes the function that members can choose the appointment time and then choose the coach online (Fig. 1).

3.2 Member Added Module Design

When a member joins the membership, the administrator enters the adding interface and collects the information. If the member is new, the addition is successful and displays the added member information (Fig. 2).

3.3 User Login Module Design

Considering that the actual use is involved in the case of interests, the need to ensure the security of the data, so it is necessary to use the system to log in first. The specific login process is shown in Fig. 3.

3.4 Database Design

This system uses MYSQL database for data storage, first need three data tables to store the basic information of participants, corresponding, different participants have different rights and functions, different functions generated data also need to be stored. The individual tables in the database are designed as follows (Table 1 and 2).

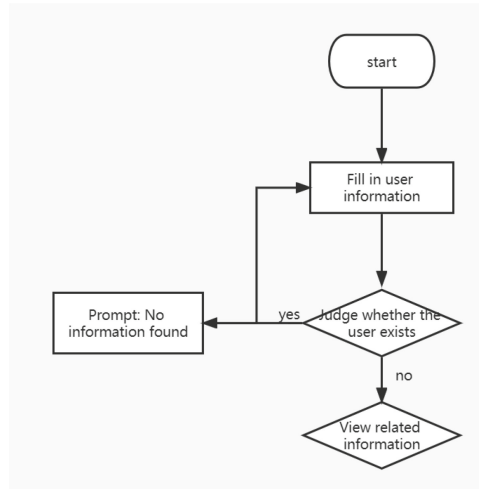


Fig. 2. Registration information flow chart

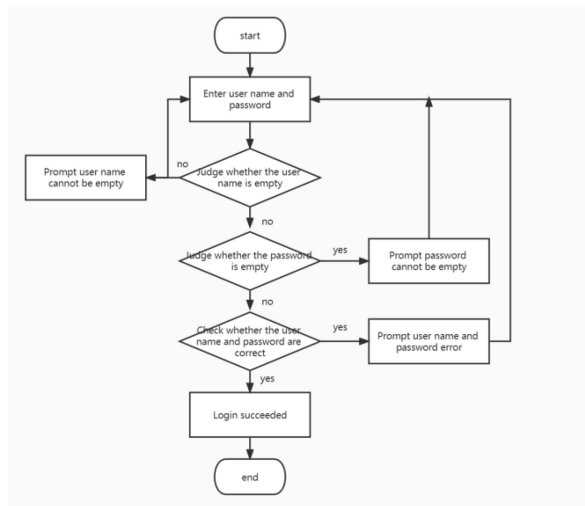


Fig. 3. Flowchart of the login information

4 System Function Realization

4.1 Login Module

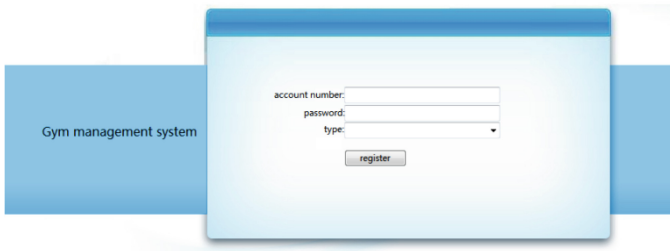
When participants log in, they should first choose what identity to log in. After entering the login account and password, they will log in to match the input from the account number and password stored in the database. After verification, they will enter the corresponding interface. An incorrect account or password returns some prompts [6]. As shown in Fig. 4.

Table 1. The System Administrator Table

column name	type	length	Primary key	non-null	illustration
ZD_userId	int	30	Y	Y	Primary key
ZD_userName	Varchar2	30	N	Y	user
ZD_userPw	Varchar2	30	N	Y	password

Table 2. The Member Information Sheet

column name	type	length	Primary key	non-null	illustration
id	int	30	Y	Y	Primary key
leixing	Varchar2	30	N	Y	type
jine_ZD	int	30	N	Y	money
KAHAO_ZD	Varchar2	30	N	Y	card number
xingming_ZD	Varchar2	30	N	Y	name
xingbie_ZD	Varchar2	10	N	Y	sex
nianling_ZD	int	30	N	Y	age
dianhua	Varchar2	30	N	Y	telephone
mima	Varchar2	10	N	Y	password

**Fig. 4.** Login interface

4.2 Administrator Module

The administrator is a super user of the system, with great authority and functions, and is responsible for the data maintenance of members and coaches. After logging in through the account and password, there are modified login password, member information management, coach information management, recharge consumption module management, complaint management, message information management and other functions. As shown in Fig. 5.

The administrator manages the information of members and coaches uniformly, with the view, modification and deletion of information. As shown in Fig. 6.

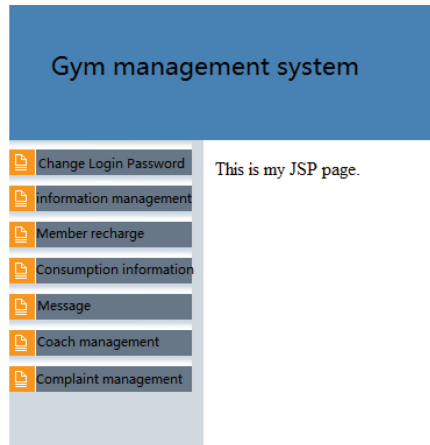


Fig. 5. Main interface of the administrator

number	type	money	card number	password	name	sex	age	telephone	Member Points	operate
1	month card	293	2018001	000000	San Liu	woman	22	1355555555	1	delete
2	Season card	250	2018002	000000	Qiang Li	man	26	1388888888	0	delete
3	annual card	1000	2018003	000000	Si Zhao	man	35	13212345678	0	delete

Add membership

Fig. 6. Member information management interface

4.3 Member Master Interface

Members use to join the membership of the administrator for the registration account and password login, can modify the password, modify personal information, online booking coach private lessons, complaints to the gym services.

5 A Web-Based Gym Management System Test

System testing is the final process in the software development process. The process of retesting whether the performance and function of the software quality are reasonable and whether it meets the requirements of the actual use [7].

5.1 System Testing Process

Test process:

1. Open the system home page, and enter the incorrect account and password. 2. Can I test the login. 3. Enter the correct login information. 4. Login successfully. 5. Test results of various functions of test system (Figs. 7 and 8).

Module Name	test case	Expected results	Actual results	Yes or No
Login module	Username:null Password:null	An error prompt pops up: Please enter the user name	Login failed. Please enter the user name	Yes
Login module	Username:ml Password:null	An error prompt pops up: Please enter the password	Failed, prompt for password	Yes
Login module	Username:ml Password:1	An error prompt pops up:Wrong user name or password	Login failed, prompting user name or password error	Yes

Fig. 7. Record of test results



Fig. 8. Record of Test login failed

5.2 Test Results

After analyzing the above test results, the gym management system developed based on Web basically meets the needs of customers. The recharge function in the system is not perfect enough, and this link needs to be improved. In addition, all the basic functions have been completed, and the operation is simple, and the product runs well.

6 Conclusions

The gym management system developed based on Web is mainly developed based on JAVA technology and JSP technology, in which the database uses MySQL to store and process data in the background. In addition, it also involves the application of JavaScript technology and CSS style, which makes the interface design introduction clear and easy to operate. The disadvantage is that the online payment function is not realized, and it will be implemented with the latest technology in the future. And the function and performance of the system also need to be improved, especially how to achieve the interconnection between different systems, the compatibility between different databases.

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