

# Functions and Main Module Design on Sports Network Selection Course System

Liang Bei

School of Education and Sports, Bohai University, Jinzhou, 121013, China

972132934qq.com

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**Abstract.** The number of colleges sports course selection and various statistics project data are more, to the PE teachers and administrators has brought great difficulties, to develop an efficient, secure, flexible sports network selection course management system is to solve the current problems effective way. This paper studies the design of sports network selection course system. First, a technical description, describes the key technology of choice, and introduces the advantages of JSP technology; then, functional design, the main module is divided into student module, teacher module, the administrator module; finally, the main functional module design, mainly expounds the central module of selection course system: student selection course modules. Using the design of this article to develop sports network selection course system, it is an effective means to manage the college sports course.

## Introduction

College sports course is an important part of the school curriculum system, is the central link of college physical education teaching. Therefore, the use of network quickly realized selection course management becomes an inevitable trend. This paper develops a set of efficient, stable, and convenient for students to use the sports network selection course system. Using the internet instead of the conventional artificial course selection, greatly improving the work efficiency, teachers do not need to spend a lot of energy, send options table, closing the options list, verify the registration and summary changes, and so on; it not only saving manpower, but also reduce the amount of paper copying. And can be well managed and the use of existing teaching resources, improve the quality and efficiency of education management. For students, can easily according to their own will to select course.

According to the actual situation of college sports course selection designed a sports network selection course system, this system is clear structure, clear responsibilities and functional diversity. Students can any networked computer browse courses, self selection, delete own selected course, truly independent course selection. Managers can timely maintenance course selection data (including setting the number of elective, class requirements, the time period for each class to class, and so on.), publishing the open course information on the system; able to track the course of elective cases, according to the Department of Physical Education teachers and teaching resources in real time regulate, and will adjust the information in real time dynamic publishing; able to control the entire selection course process, open and close student selection course system. The system can automatically analyze and statistics the data after selection course, to provide a list of selection student, transcripts and printing function [1]. At the same time to ensure the safety and effectiveness of all kinds of information. Users can freely change their own passwords and related information to ensure the security of user information. System makes college sports elective system more standardized, institutionalized and information.

## The Key Technology

Sports network selection course system uses B/S development model, database management system used SQL Server 2008, development language using Java, developed using the framework of JSP/Servlet technology. The system uses main technical and benefits, Java Server Pages, referred to as JSP, is a technique to create interactive, dynamic Web sites based on Java programs. A lot of ability of JSP comes from full application functionality of the Java language, and the Java language as a leader in object-oriented languages, in terms of performance, security aspects can be said to be very good, so this makes the JSP using Java language, implementation of web design technology compared with other similar dynamic web design technology has a very big advantage.

B/S (Browser/Server) structure with the rise of Internet technology, it is a variation on C/S structure or improved structure. Users interface through the WWW browser interface to achieve, very small part of the business logic in the front-end implementation, but the main business logic on the server side implementation, a so-called three 3-tier structure. This greatly simplifies the client computer load, reduce system maintenance and upgrade costs and workload, reducing the overall cost of user. With the current technology, the LAN set up the networking application of B/S structure, and by the database applications in Internet/Intranet mode, is relatively easy to grasp, the cost is lower. It is the development of one-time to place, to achieve different people from different places, different access methods to access and manipulate common database; it can effectively protect the data platform and manage access rights, server database is also very safe. The working principle of B/S structure is shown in Fig. 1 [2].

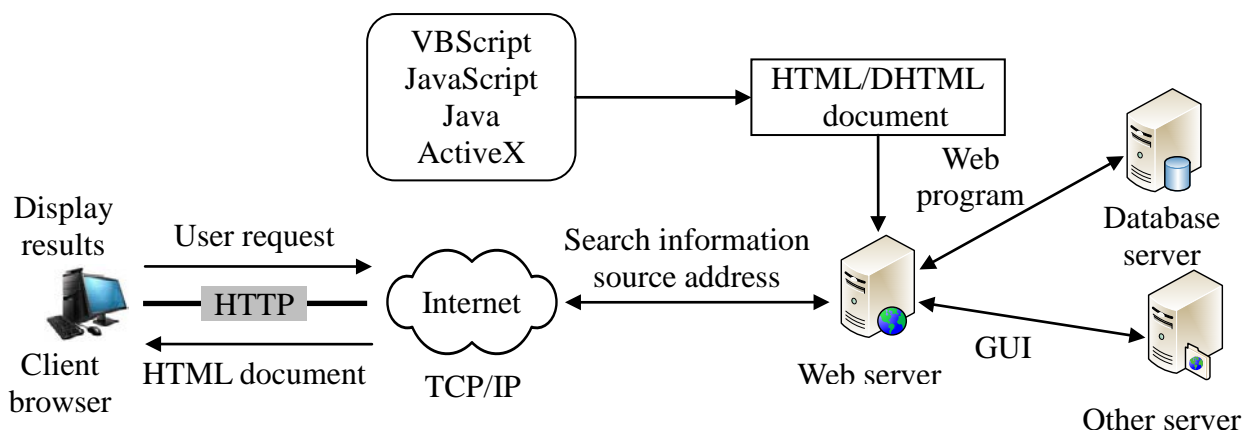


Fig. 1. Working principle on B/S structure

The process of B/S structure is described as follows: (1) the user to open the computer, start the browser program, enter the specified URL (Uniform Resource Locator), the browser sends a request to the Web server, which is pointed to by URL; (2) After Web server receives the request of the browser, the URL is converted into a file path name on the server where the page is located; (3) If the URL points to an ordinary HTML (HyperText Mark-up Language) documents, Web server directly send it to the browser. HTML documents may contain ActiveX, VBScript, Java, JavaScript and other small programs to write, the server transmits it to the browser along with the HTML, executed on the machine where the browser; (4) If the HTML document embedded ASP or CGI (Common Gateway Interface) program, Web servers can run ASP or CGI program, and the results sent to the browser. Web servers may need to call other servers when you run the CGI program; (5) URL can point VRML (Virtual Reality Modeling Language) document. As long as the browser is configured with VRML plug-in or client has been installed on the VRML browser, you can receive the VRML document by Web server sends.

Java Server Pages (JSP) is a dynamic website development technology is completed by the Sun company development. It uses JavaBean and Java markers on the static HTML code and dynamic data were distinguished, the static HTML code is completed by the HTML programmer, and dynamic data and JavaBeans by Java programmers. Such a division of labor principle can make

different programmers concentrate on their respective fields. JSP inherited and expanded functionality of Servlet, JSP Container itself is written using Servlet, JSP web pages application is the first through the JSP container to convert the Java code of Servlet, and then compiled into an executable Java class files. This class files through the server-side JSP container load to the server, after it, it can serve all requests from the client, and returns the execution result of the dynamic [3]. JSP is written in the syntax of Java language, Java language itself has the characteristics of cross platform, so JSP is most suitable for writing servers executing program. In addition, JSP can be combined with static HTML syntax, which makes the design approach of JSP simple and intuitive. The execute process of JSP is shown in Fig. 2.

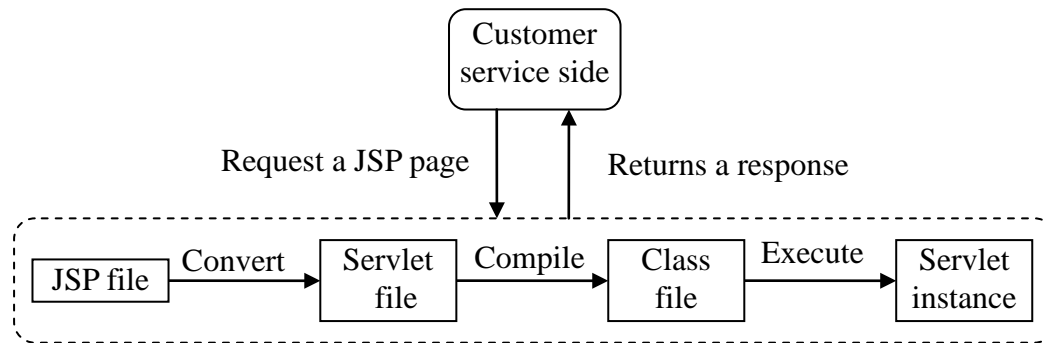


Fig. 2. The execute process of JSP

JSP/Servlet working process: JSP/Servlet support HTTP request/response model, thread work mode in response to a request from the client browser [4]. For Servlet's request of client, directly by the Servlet engine handled JSP, which is the static HTML separated from dynamic content, rather than using Servlet alone for static content to be used for output statements to output much more convenient. If the program module embedded in a lot of Java code only in JSP pages, all the application logic together, will cause the program code is obscure, to make the system difficult to maintain. The system uses the respective characteristics of JSP/Servlet, so that the JSP program focuses on the representation logic, and Servlet focus on business logic.

## Functional Design

Functional design commonly used method is simulated. Modularity is an important design thinking, to a complex system is decomposed into a number of smaller-scale, function is relatively simple and easier to create and modify parts, on the one hand, each module has a relative independence, can respectively be designed and implemented, On the other hand, the relationship between the modules will be described through a certain ways. Each module within the constraints of these relationships together constitute a unified whole, the completion of the functions of the system [4]. System function structure diagram is shown in Fig. 3.

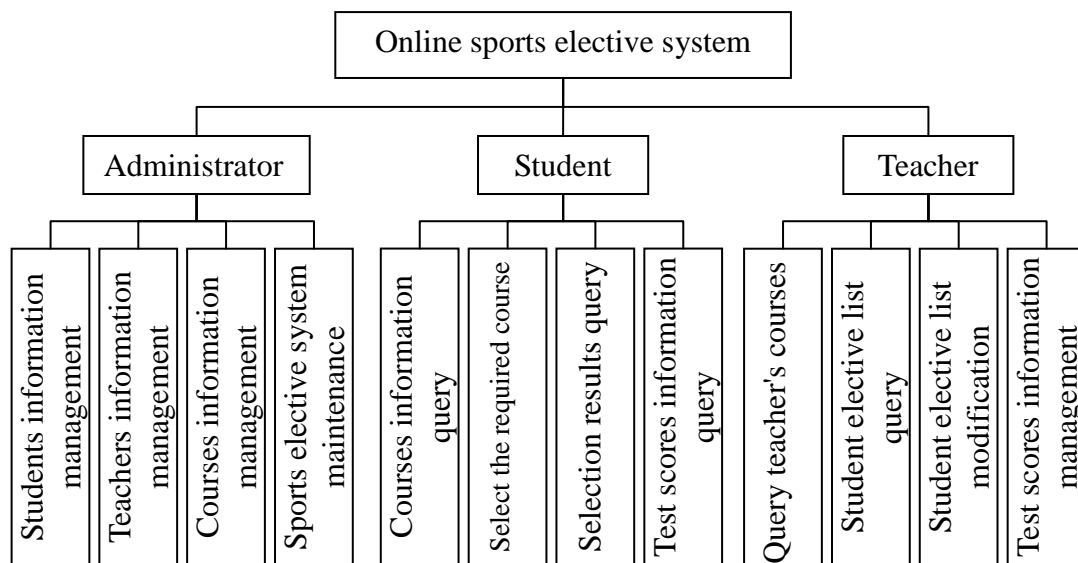


Fig. 3. Function module structure

College sports selection course system, primarily for the convenience of the school to the college sports course management, which mainly includes the following three types of users, student users: mainly browse course information, course selection, and withdrawal, generate curriculum, and view the scores and so on. Teacher user: mainly apply for classes to open, apply for cancellation of courses, curriculum classroom management, course selection student information management, attendance records, and performance records. Administrator users: mainly responsible for the audit of the course, user input, course selection requirements set, course selection situation monitoring, system maintenance and so on. All users can modify their own personal information and safety information [5].

### Main Module Design

Colleges and universities set reasonable sports project, try to meet the needs of the students course selection, set up public physical education content should promote personality development of students, training students comprehensive sport ability as the core. Sports selection courses settings can be based on existing conditions, to maximize alternative project, satisfy the students' interests and hobbies. Implementation of college sports network selection course, a better solution to some of the difficult problems that exist originally artificial selection course. The main module design of the system is described as follows:

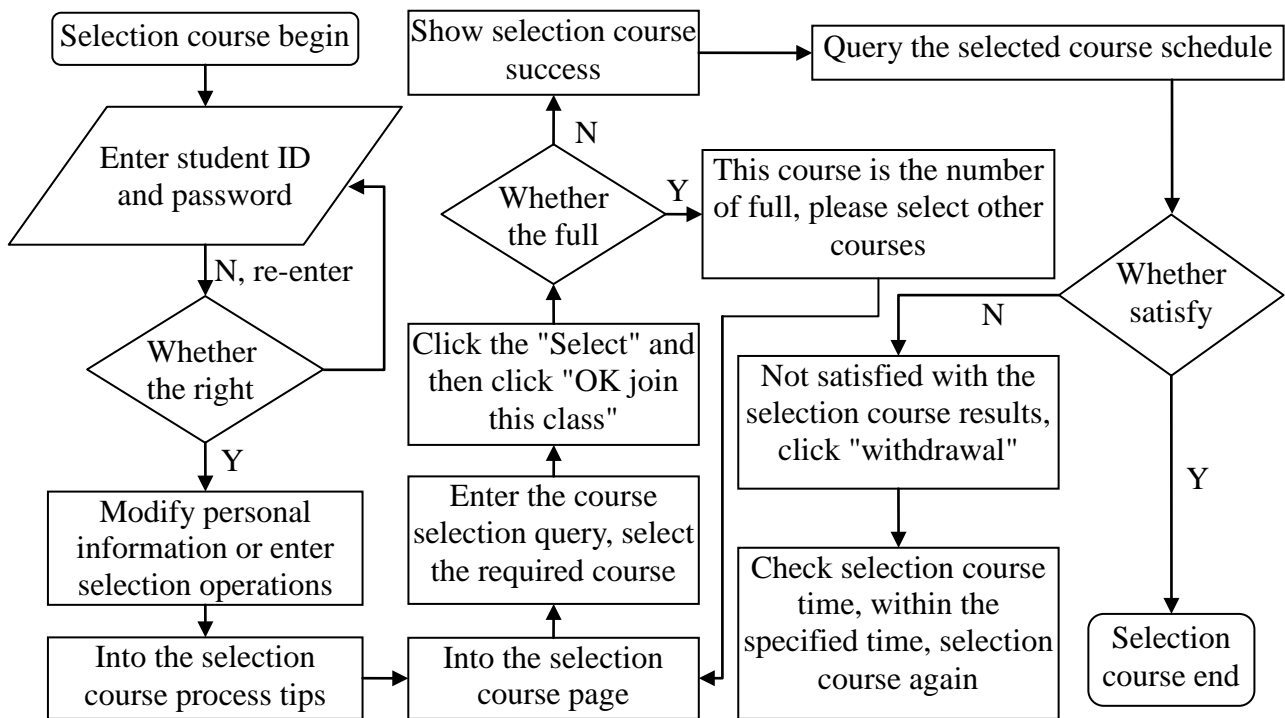


Fig. 4. Student selection course module flowchart

Student selection course module, the student information has been previously imported into the appropriate database, after the opening of selection course system, students can log in by student number and initial password [6], only enter the correct student number and password, and students enter the system for subsequent operations. If students forget student number, can be queried from the login screen. If the user name or password information is incorrect, then the validation controls prompt. After the normal login, can enter individual centers, click modify personal information can modify their information, after entering the individual centers, can browse the selected course information, then can select courses, students log in after clicking selection courses, you can choose to display all the sports class curriculum; click on the instructor can display classroom teacher, curriculum after clicking behind the "Select" and then click "OK join this class" button to complete the selection course. When selecting course, student selection course in the background will be processed, if the number of students in a course of less than or equal to the capacity of the course, then all the students selected this course; a course if the number of students is greater than the capacity of selected courses or sports classes for men and women set limit selected, the system will prompt accordingly, cannot join the class, please choose other courses [7]. Student selection course module flow chart is shown in Fig. 4.

Selection course module mainly inquiries, selected, withdrawal courses and other functions, this module offers four courses query for the user: Query by course number, course name, teacher numbers, teacher name, according to the user selects the input the information to query, the module automatically retrieves the curriculum information to meet the requirements of users from the database, and returns the output to the user, the user can directly selected course on its search condition (courses have been selected, and the selected course class time conflict not selectable), after the submission, the module adding the selected course information into corresponding database [8].

## Conclusion

Sports network selection course system can well accomplish student, teachers and curriculum management, a good deal with the problems posed by selected course. The system is designed to meet a large number of users centralized data processing requirements, reducing the work pressure

of sports department [9]. Data set in the data server management, safety and reliability. System to achieve students for a limited time to choose their satisfaction with the sports programs and classroom teachers, on this basis, student select courses generated the data can be directly used for final student evaluation and other functions. For the students did not participate in select course in a specified time, the system randomly selected courses for the student. Using computers to achieve scientific, systematic, network for sports selection course management, reflecting the work of educational management system to serve the teaching center, while can help managers to easily manage teaching, teacher is more convenient teaching, students better query information.

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