


Construction of Applied International Trade Simulation Training System Under the Background of "Internet Plus"

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Abstract: With the development of economic globalization, the contact between international trade is getting closer and closer, which has a profound impact on China's economy and trade. With the update of Internet technology, the disadvantages of traditional trade communication are becoming more and more obvious, and the market demands more and more strict economic talents in colleges and universities. Therefore, this paper constructs an applied international trade simulation training system under the background of "internet plus" education. This system uses IDEA as the development and compilation tool when developing JavaWeb applications, and JDK 1.8 as the development environment, CSS3+HTML5+Javascript as the front-end development language, and Java as the back-end development language. The overall design scheme of the system will be deployed in layers according to MVC mode, which will support users to make better use of the training function in the system and ensure the training effect. On the system framework, vue.js is used at the front end, SSH framework of spring+springmvc+hibernate is used at the back end, and MySQL is used as the relational database of the system to store massive trade data. It can ensure the integrity of information resources of the simulation training system and help the further development of intelligent teaching of international trade major in colleges and universities.

1 INTRODUCTION

Report to the 20th CPC National Congress pointed out: "High-quality development is the primary task of building a socialist modern country in an all-round way, and high-level opening is the inherent requirement of achieving high-quality development". (He, 2016) The further development of economic globalization has become the current mainstream trend, and the contact between countries has become more frequent. International trade is the main means to promote the economic development of all countries. It can adjust the world economic structure by adjusting the utilization rate of domestic production factors, improve the supply and demand relationship among countries, and finally accomplish the fundamental task of increasing fiscal revenue. With the change of economic structure, the requirements of the society for practical trade talents are becoming more and more strict. As the main position of cultivating talents, colleges and universities should keep up with the trend of social

changes, and change the talent training mode with the help of digital electronic technology, so as to cultivate applied international trade talents with ability and political integrity to meet the social needs and promote the development of the country. But at present, there are still the following problems in the cultivation of international trade professionals in colleges and universities. First of all, the teaching mode in colleges and universities is single. Most colleges and universities still use the traditional theoretical teaching mode, ignoring the importance of practice, which leads to the lack of practical experience of most college students and makes it difficult for them to integrate into social work. Secondly, the content of practical training is outdated, lacking in new ideas, and out of touch with the development needs of social reality. Most of the training contents in colleges and universities are the same, and they are not updated for a long time, which reduces the interest of college students in learning and makes the training lose its own meaning. Finally, in recent years, under the situation of epidemic diseases,

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colleges and universities are unable to organize students to carry out offline enterprise training activities, which leads to students' lack of training experience and aggravates the difficulty of employment. All the above problems need to be solved urgently.

In view of a series of problems existing in the process of training international trade talents in colleges and universities, colleges and universities should timely reform the current training mode and change training strategies. On the premise of scientific and technological development, they should reform the outdated teaching mode and enrich the teaching contents of international trade majors, so as to improve the professional skills and practical skills of college students and make them become high-quality applied international trade talents. Based on the development advantages of digital electronic technology, this paper constructs an applied international trade simulation training system under the background of "internet plus". By making full use of Internet technology, a learning environment for all-round training from learning to using is constructed, and the current situation of insufficient practical education is improved, so that the educational content of international trade in colleges and universities is more in line with the actual needs of the society. At the same time, the information-based training system can better meet students' study habits, thus improving the teaching effectiveness of international trade training.

2 KEY TECHNOLOGY

2.1 SSH

SSH is an integrated framework composed of struts+spring+hibernate, which is usually used for the overall framework development of web applications, and has the characteristics of open source and free. SSH framework can be divided into four layers according to responsibilities, namely, presentation layer, business logic layer, data persistence layer and domain module layer. This detailed structure mode according to responsibilities can make users build web applications more efficiently. (Ji, 2008) In SSH framework, Struts is the basic structure of the system, which is mainly responsible for controlling the jump of system business and the separation of MVC. Spring's control inversion can play the role of decoupling, so that Struts and Hibernate can work together better and coordinate, and its management ability runs through the whole system. Hibernate itself is a relational mapping framework with open source code, which can automatically generate and execute data statements. SSH, as the most classic three-tier architecture, perfectly deploys the system structure in layers, thus improving the operation efficiency. Users can make use of its excellent extensibility to carry out secondary development, thus creating functions that are more suitable for individual needs and reducing the time cost of system development. (Pan, 2019) Its specific operation process is shown in Figure 1.

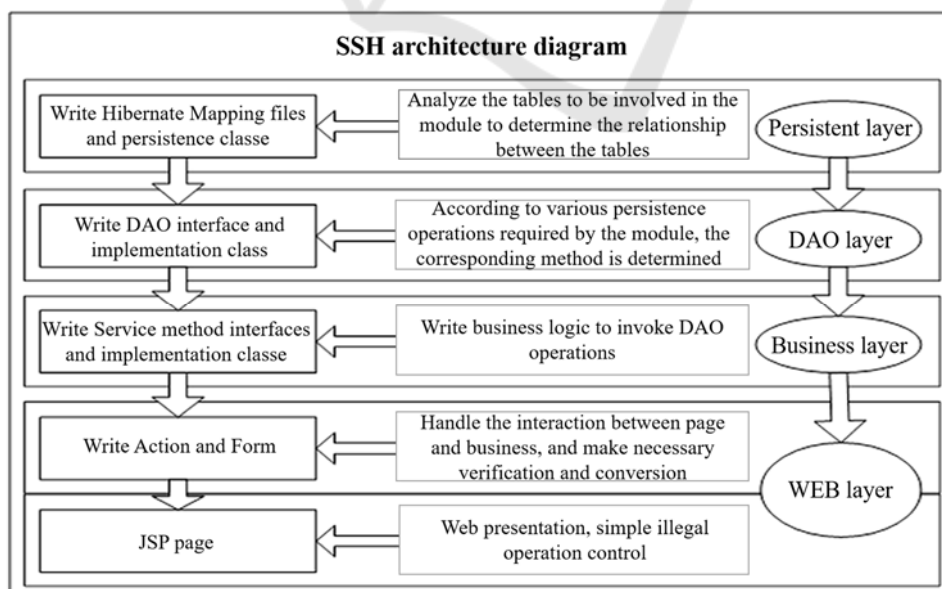


Figure 1: Flow chart of SSH framework operation.

2.2 Java

Java is a simple programming language. Its syntax is similar to that of C language, but it is different. The general difference is shown in Table 1. It doesn't take users too long to finish learning and writing. The reference of Java language increases the utilization rate of the system memory space, and the system will automatically allocate and recycle the memory space

on a regular basis, so as to avoid the situation of memory over-fullness. It also has the advantage of object-oriented. Java language not only supports single inheritance between classes but also supports multiple inheritance between interfaces, thus achieving the implementation mechanism between classes and interfaces. The biggest function of Java is to make web pages lively. Java has a wide range of Applications, including Android mobile app, large websites and PC software.

Table 1: Analysis of the differences between the Java and the C language.

Differentia	C language	Java
Orientation is different	Procedure-oriented	object-oriented
Efficiency is different	High implementation efficiency	The execution efficiency is relatively low than that in C language
Generality is different	Cannot use across the platform	Can be used across-platform migration
Basic data types are different	Related to the operating system and the machine	Fixed unchanged
Application areas are different	Network equipment development	Enterprise application development

2.3 MySQL

MySQL is not only a database management system, but also a relational database. Because of its open source characteristics, users can rewrite the source code of the database according to their own needs, so as to build a new system. Because of its own characteristics, MySQL can run on all kinds of system platforms and support all operating systems, among which the most common ones are Unix, Linux and Windows. At the same time, MySQL is also an important part of LAMP stack. Applying MySQL's unique performance advantages to web program development can greatly improve the development efficiency of staff. Its working mode adopts C/S structure, and the running tasks in the system are undertaken by the client and the server respectively, which improves the running efficiency and the utilization rate of system resources. Most of the data resources in MySQL are managed centrally, which ensures the safe storage of system data while making efficient use of resources, so it becomes one of the most popular databases at present. (Teng, 2022)

2.4 Development Process

According to the system development requirements and the use requirements of the above key technologies, complete the configuration and deployment of the development environment. The overall development of the system is based on Windows10.0 operating system, and Java is selected as the basic language of the system development.

JDK1.8 is selected as the development kit, Tomcat8.0 is selected as the Web server for the system development, Eclipse is selected as the Java integrated development tool, and MySQL database is selected for data storage. After downloading, installing and configuring the above software systems one by one, the development environment of the system is built. Create a new Web project under Eclipse system and name it SSH. Click Finish to pop up a dialogue window. After the completion of the new project, the homepage of index.jsp will be automatically generated in the root directory of the website, and then double-click it to change This is my JSP page. to the homepage, and then use Ctrl+S to save it. Then, on the top menu bar, click My Eclipse under Preferences in the window, modify the coding in JSP and click OK to apply the unified coding format. Then build Struts framework: introduce Struts-2.3.30-apps resource package, create an action class, and correspondingly create dao class and service class in the middle. Hibernate framework construction: you need to install the Hibernate Tools plug-in, introduce the Hibernate-release-5.2.2. Final resource package, and connect to the SQLserver database. Construction of Spring Framework: Introduce the Spring-framework-4.2.2. RELEASE resource package and configure the web.xml file. Then, the three frameworks are integrated, the Action class of Struts is managed by Spring, and the Session of hibernate is managed and deployed by Spring. After the above steps are completed, conduct simulation test. After the test is correct, package the whole system and put it into Tomcat server. After

setting the IP address, it can be used normally. Through the introduction of the above key technologies and theories, the overall framework process of the development of international trade simulation training system is determined, and the feasibility of the establishment and operation of the system is clarified.

3 FUNCTIONAL IMPLEMENTATION

3.1 Student Side

3.1.1 Basic Practical Training Module

International trade major is a comprehensive major, and its teaching content covers all disciplines, so it is difficult to understand. Therefore, this module is designed to enable students to master the basic knowledge of international trade and build rational economic thinking for college students through a series of basic practical training. Users who use this system for the first time need to register. After completing the user registration according to the relevant prompts of the system, they can log in. The login code is shown in Figure 2. This module is divided into four parts: foreign exchange transaction simulation training, document training, international settlement simulation training and international freight forwarding simulation training. In the foreign exchange transaction simulation training, students mainly take foreign exchange trading as the main learning object. After knowing some basic theoretical knowledge, they can use the trading function of the system to simulate foreign exchange trading, understand and learn the trading forms of foreign exchange market, the calculation method and quotation form of foreign exchange rate. During the simulation, the system will regularly push the real-time information and risk warning of the foreign exchange market, giving students the truest operating experience. In the document training module, students can simulate the real import and export documents through the system's document making function, so as to master the basic principles and general contents of document making, so that students can gain practical skills and meet the talent needs of the society. (Ji, 2008) In the international settlement simulation training, the system will generate documents and bills of international settlement according to users' needs, so that students can learn systematically. At the end of the study, users

can click the bill simulation function under the module to simulate the production of bills, so as to have a deeper understanding of the international bill production methods and the main business processes of international settlement, and improve the settlement ability. In the international freight forwarding simulation training, the system will provide students with a real international business communication environment. Students can work out the details of international trade, such as exchanged goods and driving routes, so as to enrich their trade thinking and cultivate their decision-making ability. Through the study of this module, college students can master the solid basic theory of international trade and lay the foundation for the follow-up study.

```
import javax.swing.*;
import java.awt.*; //Import necessary packages
public class denglu extends JFrame{
    JTextField jTextField; //Define the text box components
    JPasswordField jPasswordField; //Define the password box component
    JLabel jLabel1,jLabel2;
    JPanel jp1,jp2,jp3;
    JButton jb1,jb2; //Create button
    public denglu(){
        jTextField = new JTextField(12);
        jPasswordField = new JPasswordField(13);
        jLabel1 = new JLabel("User name ");
        jLabel2 = new JLabel("Password");
        jb1 = new JButton("Confirm");
        jb2 = new JButton("Cancel");
        jp1 = new JPanel();jp2 = new JPanel();
        jp3 = new JPanel();
        //Set up the display
        this.setSize(300,200);
        //this.pack();
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        this.setVisible(true);
        this.setTitle("log in");
    }
}
```

Figure 2: System accession code.

3.1.2 Comprehensive Practical Training Module

In this module, the system focuses on comprehensive training as the main teaching object, aiming at cultivating students' professional ability and improving students' comprehensive quality through comprehensive training education. In order to enable students to integrate their knowledge and form a complete knowledge framework, this module systematically simulates international trade in more detail. Students can participate in the whole process of international trade exchange with the help of the comprehensive training function of the system. Click the comprehensive training module system to automatically generate a trading company, and then the subsequent corresponding operations can be started. Students need to independently work out the company's trade development strategy, find interested cooperative companies, then conduct trade consultation, sign contracts and a series of trade

communication issues. (Bao, 2022) The system will also provide a simulated international trade exchange platform, which contains a large number of supply and demand messages and basic data, and users' companies can conduct trade interaction on this platform. The code of user interaction is shown in Figure 3. Through comprehensive training, students can master the basic trade operation skills such as import and export cost accounting, inquiry, offer, counter-offer and so on in a short time, have some knowledge of the logistics, capital flow and business flow of international trade, and quickly understand the overall operation of foreign trade practice, so that students can consolidate their knowledge in practice and further improve their problem-solving ability.

```
public void actionPerformed(ActionEvent e){
//JButton button = (JButton) e.getSource();
String buttontname = e.getActionCommand();
if(buttontname.equals("Quit"))
    System.exit(0);
if(buttontname.equals(" Empty"))
    textmessage.setText("");
if(buttontname.equals("Easure"))
    String iP= "192.168.8.15";
    try {
        InetAddress address =InetAddress.getByIp(IP);
        byte []data = sendtext.getText().getBytes();
        DatagramPacket dp = new DatagramPacket(data,data.length,address,9527);
        String myip = InetAddress.getLocalHost().getHostAddress();
        textmessage.append(myip+"n"+sendtext.getText()+"n");
        socket.send(dp);
        sendtext.setText("");
    } catch (UnknownHostException e1){
//TODO Auto-generated catch block
        e1.printStackTrace();
    } catch (IOException e1){
//TODO Auto-generated catch block
        e1.printStackTrace();
    }
}
```

Figure 3: User interaction section code.

3.1.3 Career Experience Module

Under this module, students can choose positions in international trade exchanges according to their personal interests, such as foreign trade merchandiser, international freight forwarder, business voucher clerk, customs broker and customs inspector. These positions are subject to the rotation system, and students need to change positions regularly to ensure that students can fully experience each position in the trade link. Through this kind of personal experience, students can better learn trade skills, be familiar with the overall process and business operation mode of international trade exchanges. Thus enhancing their working skills, enabling college students to quickly integrate into social work after graduation, and promoting China's economic development.

3.2 Teacher Side

In this system, the functions of teachers are more inclined to organize, guide and supervise learning

activities. Teachers can assign simulated roles to students who participate in internships, and can also arbitrate disputes in simulated trade. With the help of the tracking function of the system, students' operation can be monitored in real time, so as to avoid the situation of brushing learning time. Teachers can also make adjustments to commodity prices and costs, foreign currency exchange rates, insurance payout ratio and other trade costs by publishing real-time information in announcements, and preset the probability of accidental events to enhance the authenticity of simulation training, which enables students to give full play to their subjective initiative in the training process, cultivate students' ability to cope with risks, and promote students' growth. The scoring standard of training consists of two parts: process evaluation and outcome evaluation. Teachers will give subjective scores according to the final training results, which can be divided into three grades: excellent, good and average, corresponding to five, three and one weights respectively. At the end of the evaluation, the system will automatically construct the evaluation model matrix, combine all teachers' scores with the system's automatic scores, and introduce confidence A to complete the final score evaluation. The calculation formula of students' comprehensive score M is shown in Formula 1, in which K represents academic completion, Q represents automatic grading of training operating system, P represents teacher evaluation, and G represents students' test scores.

$$\sum_{i=1}^n [(k+q) \times 40\%] + (p \times 20\%) + (g \times 40\%) = M \quad (1)$$

4 CONCLUSIONS

With the development of economy, the trade between countries becomes more and more frequent. The traditional teaching mode of international trade can't meet the needs of students and society, so this paper constructs an applied international trade simulation training system based on the "internet plus" education background. The establishment of this system breaks the traditional trade teaching mode, enriches the practical ways of international trade, enables students to study deeply in the real international trade exchange scene, enhances students' operational and practical abilities, and lays the foundation for cultivating applied international trade talents. In the follow-up research, this platform will continue to expand the depth and practicality of the system, and promote the further improvement of the system functions.

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