# Development Model of the Intelligent Ubiquitous Learning System Using Simulation System

**Ms.T.Nithya**
Department of CSE
Annamalai University, India
Email: nithya19@gmail.com

**Dr.D.NaveenRaju**
Department of CSE
B.S ABDUR RAHMAN CRESCENT
UNIVERSITY, India
Email: nithya19@gmail.com

## *Abstract*

With the rapid growth of e-commerce is widely used e-commerce caused by the demand for professionals, more and more colleges and universities offer professional e-commerce, it is desirable tocultivate high-quality practical e-commerce professionals. E-commerce has a very strong practical education, teaching is an essential part of the experiment, and students can apply the knowledge of the design, production of all aspects of e-commerce solutions. Since the complete e-commerce trading platform structure is complex, huge investments, online banking, authentication, EDI data exchange center, and many other services to be provided by specialized business organizations, the establishment of e-commerce systems for real teaching is unrealistic, one solution is through the operation of a computer simulation of electronic commerce. Computer simulation is a powerful constructive learning tool. It can provide a virtual simulation environment for learners, learners through simulated environmental manipulation, observation and reflection reasonable to conclude that, in order to complete the sense of what they have learned Construction.

***Keywords:*** Ubiquitous learning, genetic algorithm, Electronic commerce, experiment simulation system.

## 1. Introduction

At present, e-commerce business model simulation system generally has three categories: The first category is based on C / S structure, by limiting the number of users, pass each other form of online trading simulation based, essentially equivalent to the enterprise information management system; the second category is a large online business simulation-based trading platform, which is based on an industry monopoly, the industry called for all enterprises and institutions to join the trading platform, access to trading seats; The third category is based simulation system B / S structure, which uses the popular browser / server mode within a Local Area Network, subject to access limits on the

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amount, it can basically complete the main mode of operation simulation of electronic commerce [1-4].

The above e-commerce simulation systems have their own characteristics, but, in general, they are not sufficiently considering the business environment. And it can only simulate some of the features of e-commerce, the lack of comprehensive. Role transformation is not flexible enough, the lack of realism [5].

E-commerce refers to the enterprise through the computer. By means of network communication, information, products of the enterprise production, management, sales and distribution process management, it not only refers to the Internet based transactions, but to all use computer technology to enterprise business opportunities in mining, reduces operating costs, increase product added value, and improve the overall efficiency of enterprises. It includes the raw materials from the query, procurement, product display, orders, production, processing, storage and transportation, and electronic payment network to achieve a series of trade activities [6-9]. As the higher education college to train professionals in the electronic commerce, besides in classroom teaching the specialized theory knowledge, but also with the electronic commerce application combined need to have some of the practical teaching environment, make the electronic commerce specialized graduation students. A school can meet the needs of social work post, each colleges urgently need to develop a set of strong practicality, and can adapt to the school 's teaching practice of electronic commerce teaching experiment simulation system.

## 1.1 Electronic Commerce Teaching Experiment Simulation System Development Goal

The existing experimental system is mostly electronic commerce simulation system, which is similar to the demonstration system of commercial electronic commerce system. Students can only achieve a simulated e-commerce participant. Experience in the foreground process of e-commerce, e-commerce cannot understand at all stages of design ideas and methods as well as back office systems, but not hands-on design by students [10]. This cannot be fully simulated experience of e-commerce to achieve the purpose of the experiment. Such adaptability teaching simulation system is poor, only a general understanding of the use of e-business processes, not as a professional e-commerce system integrated experimental and cannot for a certain course of e-commerce or e-commerce a technology to set up pilot projects. And therefore it cannot meet the needs of e-commerce professional teaching. To solve these problems, the design is suitable for e-commerce Universities Electronic Commerce teaching simulation system. The Browser/Server (B/S) structure system, dynamic web page making skills and SQL server data base, in-depth analyze the electronic commerce teaching experiment simulation system function structure and operation flow and other factors. It actively develop survey the more important business activities as system project, and strive for the vast number of electronic business students to provide more vivid experimental environment, and meet the teaching need analog electronic commerce environment. It further realizes the principle of the unity of theory and Practice for society and enterprise transport more excellent e-commerce talents [11-12].

### 1.2 System Overall Structure and Hot Spot

The system further classification of e-commerce transactions, the process and the main organic combination together put forward the corresponding simulation test system architecture model of the system using modular design. It divided into several modules, the trading platform and the public platform, the trading platform and B2C, B2B, C2C Internet trading platform module, public platform and three modules of the online bank, CA certification, student experiment evaluation and the full realization of the running in the background management [13-14].

Electronic commerce teaching experiment simulation system is the biggest characteristic of the simulation and interaction of students can fully realize the interaction and play different roles as described earlier in this system. There are many different transactions. I can play in addition to students often encounter consumer roles can also play a different role, enterprise certification the center of banking. And in the course of using this system, this system can also simulate to achieve membership registration, personal identity authentication, online bank accounts and financial transactions, and to apply for CA certification, certification approval, the entire process of online shopping, order management and other diversified funds online bank settlement in a realistic environment. Through complete function the use of this system, students soon can enter the basic role in the full experience of the different forms of electronic commerce transaction process. It is convenient to further understand the characteristics and basic functions of the three e-commerce trading platform, and provides the actual operation of the foundation for the future to carry out the smooth operation.

## 2. Literature Survey

In Browser/Server architecture, the system by the browser and the server consists of analog electronic commerce. It divided into the presentation layer, business logic layer, and data layer. Presentation layer refers to the students are the visible when using the system interface. The system indicates that the layer is human-computer interaction function for the browser operating. Business logic layer is in the middle layer and the key position. The data layer in the system, the business logic layer Web server function for data link layer is mainly responsible for database access and data table look up, insert, add and delete the data layer in the system. The database server is mainly to request processing and feedback the presentation layer. Business logic layer and data layer formed integrally the instruction issued a transfer instruction processing transfer received instruction [15].

### 2.1 System Function Module Design

During the teaching practice of e-commerce, students through the use of electronic commerce teaching experiment simulation system to deepen their understanding of the basic theory of the electronic commerce knowledge, grasp the development trend of e-commerce. It can let students

in teaching practice found commercial demand, proposes the business idea, find the problem solving measures and programs. According to the teaching purpose of electronic commerce experiment, it can be divided into three levels, that is, the basic level experiment, the improvement of the level experiment, and the comprehensive design experiment [16]. Electronic commerce teaching experiment simulation system is a set of teaching, experimental functions in one of the teaching software, its main features include: online shopping BtoC system, enterprise sales BtoB system, online trading market, online banking, CACertification Center, and the student evaluation of the test system function. The structure of the functional modules such as shown in **Fig. 1.**

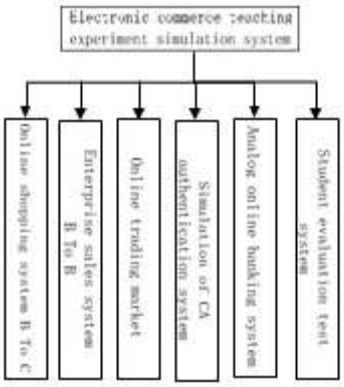


**Fig. 1** Function module structure diagram

Online shopping BtoC system used to conduct personal online shopping simulation experiments, the main experimental content including membership registration, purchase of goods and goods settlement. Enterprise sales BtoB system used to conduct business simulation experiments, the main experimental contents includes membership registration, commodity purchase and commodity settlement. Online banking is used to conduct simulation experiments on the Internet [17]. The main experimental content includes the application of bank accounts, the audit results, user information management and PIN code modification. The main experimental content includes account application, query audit results and user information management. Online trading market in the main users of the online transaction process of imitation, the main contents of the experiment includes enterprises and commodity query, online ordering, online discussion, bargaining, online auction, contract management and customer management function.

There are two main functions of the students' evaluation and testing system, including the experimental operating system and the examination system.

### 2.1.1 Experimental operating system function

Students according to the experimental requirements complete all kinds of specified operation. The system can be preset according to the decision conditions, to make "through" or "not through" andother assessment results.

### 2.1.2 Examination system function

By the teachers in the system questions, students have finished the test, click on the "test the submit button, teacher according to the preset reference answers for online marking.

## 3. Realization and Test of Main Function Modules of the System

### 3.1 Implementation of Online Shopping System B2C

Online shopping system B2C transaction mode, is refers to the enterprise and the consumer electronic commerce. Function block diagram is shown in figure 2. This module provides an electronic mall site, students in B2C experiment respectively as individual consumers and commercial publishers' role, individual consumers, product search, and online retail transactions. At the same time, the online payment and other means complete the operation of the payment transaction [18]. As a commodity publishers complete the release of goods, merchandise management, order management, and membership management operation. Students through simulation experiments, not only can understand the B2C sales model, but also can be exposed to the latest B2C platform operation mode, familiar with the operation process.

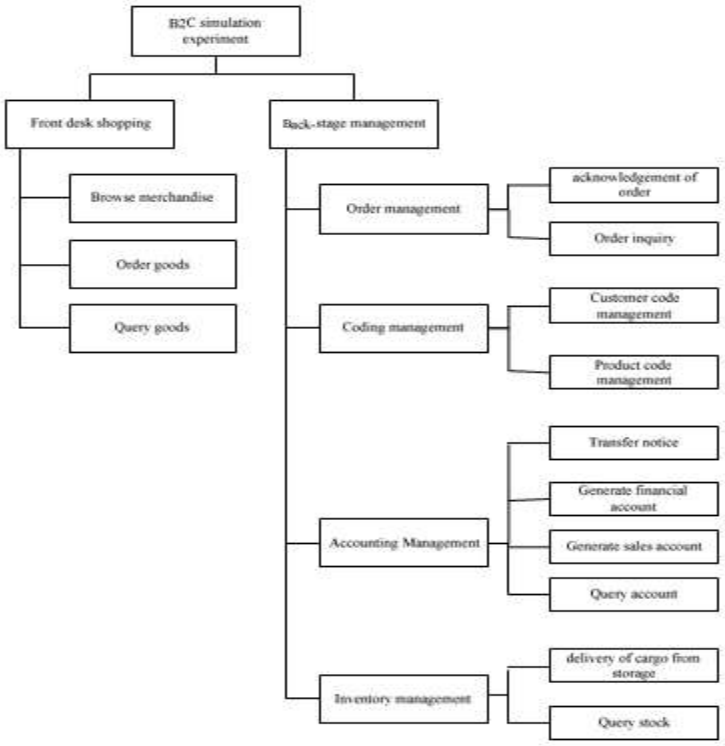


**Fig. 2** B2C function module chart

In the course of the experiment, the students enter the simulation training system, select the B2C trading experiment, and carry on the operation.

### 3.2 B2C Front Desk operation

In the B2C front desk system, there are user registration, product recommendation, online shopping, query orders, customer message, navigation, classification, online banking and other main functions, the operation is: Register login. Contents include: user registration; forget the password; modify the password; registration information update. Commodity display: Commodity display is divided into categories of goods and goods to show the presentation [19]. Search businesses: Users in the B2C mall home page can be searched according to the name of the merchant. Search goods: Users can search according to the classification of goods, you can also use the search engine to search directly, but also through the navigation bar in the latest merchandise, discount merchandise to choose. Buy goods: Consumers from the view of the product page to buy products, and into the shopping cart, shopping cart with consumers in the online shopping choices, online store finally according to the shopping cart information to determine the customer's orders. Shopping cart should have the following functions:

Automatically track and record the process of consumer choice of goods online, and display the list of these items in the shopping cart, as well as some brief information on these products, such as the name, number, unit price, quantity, etc. Allow consumers to update the merchandise in the shopping cart at any time, including the number of changes in the number of goods or to delete some of the goods have been selected, etc., while the relevant information such as the cumulative price should also be modified to synchronize [20, 21]. Automatically accumulate the amount of customers to choose goods, and real-time cumulative, so that consumers can see at any time the total amount of the selected goods. Completion of the data validation, confirmation and order archiving, while the database for real- time updates.

- Settlement order. Settlement of the established order.
- Query order. Users log in to the online store in my order list can be found in a certain order ofall information.
- B2C background operation B2C background management is available to the administrator to manage the function module of online shopping mall, B2C background management of the specific content is:
- Information management Support the online store of information dissemination and exchange of information, including news category management, mall news add, mall news management, project classification management, mall project add, mall project management, home notice management, view feedback etc.
- Commodity category management : Commodity category management is used to set the categories of goods, small class and three categories, administrators can add, delete the kinds of goods.

- Commodity management : Commodity management is to be used to issue merchandise to the front desk, as well as tomaintain the basic information of goods, including: Release new merchandise. Used to add a new product and publish it to the front desk. Commodity information is changed. Product information updates, features are: the background changes and that will be displayed in real time to the front desk. Merchandise deleted.

- purchasing management : Procurement management for the procurement of goods, and the procurement of goods registered in storage, to sell.

- Order management : B2C consumers can shop at the front desk and place orders. B2C online shopping mall in the online order module to accept orders, orders into sales orders. Order management also includes telephone order to add, telephone order management, group purchase wholesale management, sales statistics.

- Member : Users login system through the membership registration. And users login to the seller and the buyer of the relevant information, transaction information, such as tracking management. Students to enter the admin user identity management page, the user can browse or find all the basic information in the front of the registration of the consumer. If you want to delete a member, just select the delete button to delete.

### 3.2 Implementation of Analog CA Authentication System

CA (certificate authority), also known as a Personal Certificate Authorization (certificate authority) center. In the process of electronic commerce, trusted third party and electronic commerce completed the transaction, the key link to ensure the sale of the legitimate rights and interests of the parties is essential, which mainly solves the sale of both public key validations. CA Certification Center for eachapplication users to issue a digital certificate containing the public key, the role of the digital certificateis to prove that the user listed in the certificate has a valid certificate of public key.

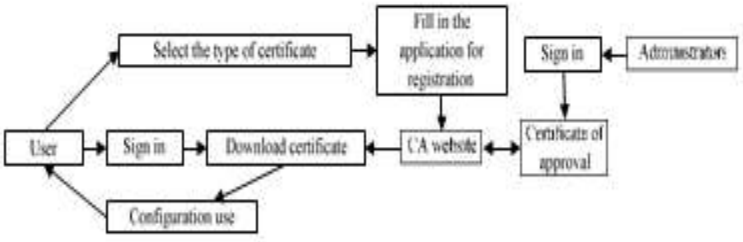


**Fig 3** CA certification process

CA certification system through the system and CA administrators dual identity Operations Review users to submit application materials, make through authentication and certification does not give the reply, and applicants issuing digital certificate.

## 4. Conclusion

Through this research, we can find the system using advanced based on the three layer system structure of browser / server to reflect the electronic commerce business processes, and role conversion principle experiment. The students' experimental is the center, highlighting the theme of the experimental teaching. Through the complete process of electronic commerce, to enable students to a comprehensive understanding of the function of each role in the electronic commerce and the relationship among them, simultaneously the theory study and practice teaching. Students in the acceptance of the theory of knowledge at the same time, practical operating abilities get improved. The developments of this system also promote the popularization of electronic commerce knowledge. The purpose of developing intelligence around the world is to learn learners at any time. Many learning activities can be completed based on mobile system support platforms. Due to its runtime and room restrictions, people can learn as much as possible, and it really achieves ubiquitous learning. This article explained the implementation of intelligent word selection in intelligent learning systems. Using genetic algorithms, a method of solving intelligent word selection has been presented. Design and development process of intelligent learning system in common words has been described. This paper exploration can provide a reference to the software system design and development for mobile learning systems

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