

Research and Design of a Commodities Trading System

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Abstract. With the growing development of electronic commerce, the business behavior of many traditional had better play in the Internet. Products transaction market can be said to be a typical example. Compared with the traditional trading model, online operation of commodities trading is more convenient, real-time, rich information resources and has huge space for development. Based on these request, in this paper we design and implementation of an electronic commodities trading system. Some technical problems are solved in the process of design and construction process, together with other schemes. Experimental results show this system is convenient, stable and easy operation.

Introduction

With the development of Internet, e-commerce is being widely grown and affected our lives efficiently. Campus e-commerce culture derived from e-commerce is becoming more and more popular among college students. In the past, college students are difficult to find buyers because they are in the campus, which leads their goods such as books, clothing, sports equipment, can only be sold to the dealer with very low price or even thrown away. As a consequence of this phenomenon, large mounts of resources are waste. However, there are some students who need to buy these things eagerly because of the reason of economy.

In our country, there are some popular public trade websites, such as ‘taobao.com’ or ‘jd.com’. These websites drive the rapid development of e-commerce market. At the same time, it is a perfect rising time of second hand trade websites, ‘5.8.com’ and ‘ganji.com’ are typical and accepted by more and more customers. But these websites are comprehensive and categories of goods are associated with all aspects of our life, from foods, clothing to travel and furniture, etc. Although perfect services are provided, they are not fit to campus trade. Campus trade is often local, fast and cheap, which does not need mail service as usually. Sellers and buyers can finish a trade face to face. Especially, sellers are temporary. Therefore, its needed to develop a special website for campus trade. The remaining of this paper is organized as follows. In section 2, we analyze the requirement of the system and describe the overall design including function modules and database. The realization of this system is reported in section 3. Finally, a conclusion is made in section 4.

Requirement Analysis and Design

According to our survey, at present most of the students still adopt the traditional way to sell, such as posting advertisements or using street vendor in the campus, etc. At the same time, students who want to buy only by browsing the advertisements or going to the street vendor and looking for second-hand goods. Actually, this traditional way can't meet the needs of the students. Thus, it eagerly needs to develop a second-hand website to change the existing model, and convenient the trade between students and improve transaction efficiency as well as improving commodity utilization ratio.

Functional requirement design

According to the analysis and evaluation, the commodities trading system mainly includes foregrounding and backstage management modules. In foregrounding module, we set these functions

such as commodities browse, query, sell and buy. At the same time, function of browse, query, statistics, modification, and report is needed in backstage module. Each function should be refined so as to adapt our system's demand, and design a system to be user-friendly.

Overall Structural Design

According to the functional requirement of commodities trading system database application, the overall structure of the application system could be indicated with system business flow diagram, show in Fig. 1.

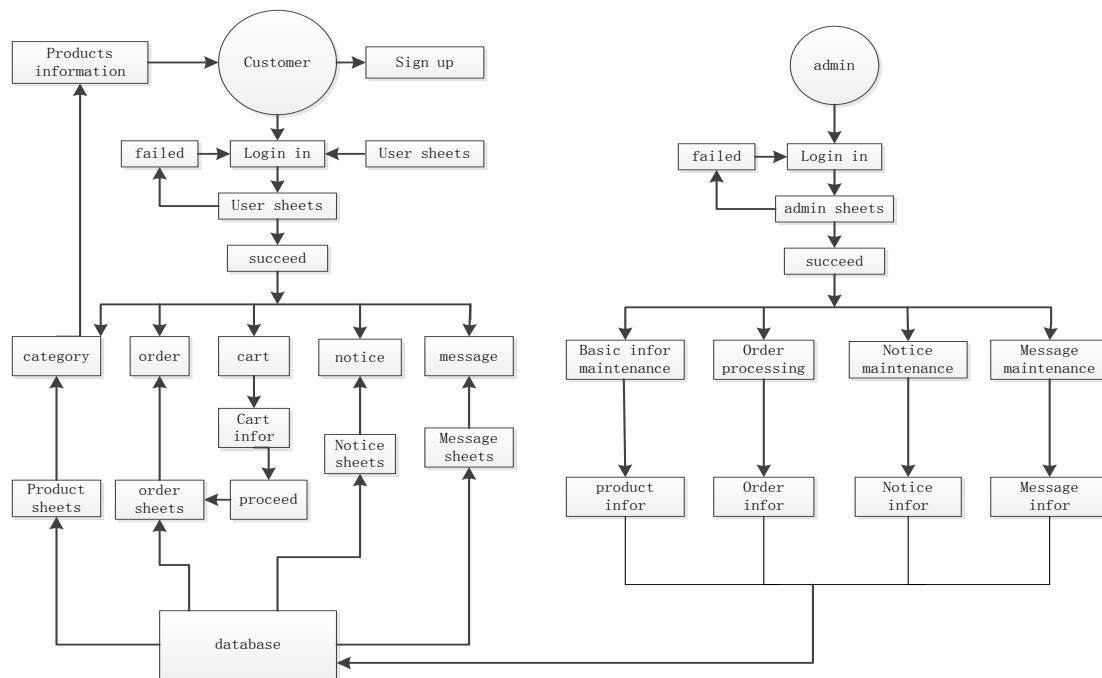


Figure 1. System Business Flow Diagram

Design of Data Sheets and Fields

Based on the system functions design and business flow design, we may design data sheets for user and commodities. Each data sheets contain these information, such as user basic information sheet contains the fields named user ID, name, sex, age, birthday, telephone number, address and so on. To each commodities, these information such as commodities ID, introduce, review, numbers are set. Once the sheets and fields are determined in the database, we need to establish the associations between the data sheets. To facilitate query, data sheet associations can be divided into three types, named one to one associations, one to many and many to many. Data logical structure we designed is shown in Fig. 2. Table.1 is data sheet of commodity information.

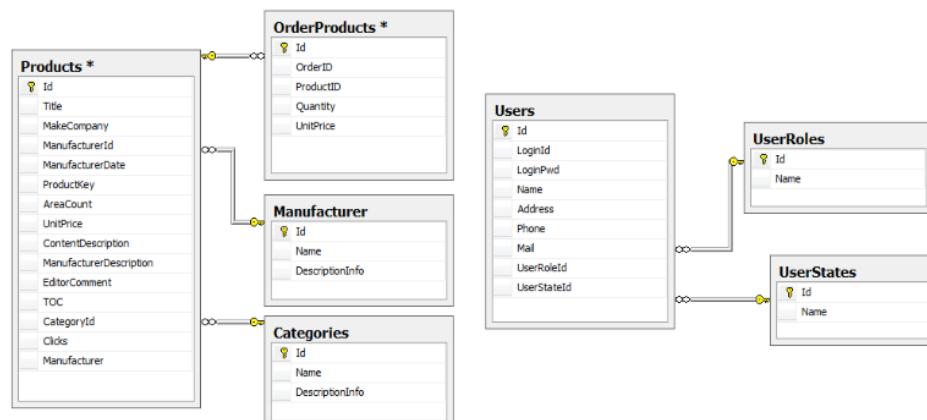


Figure 2. Data Logical Structure

Table 1 Information of Commodity

Field Name	Data Type	Length	Main Key	Describe
Id	int	4	Y	Database No
Title	nvarchar	200	N	Product Name
Make Company	nvarchar	200	N	Make Company
Manufacturer Id	int	4	N	Maker No
Manufacture Date	Date time		N	Product date
Product Key	Nvarchar	50	N	Product No
Unit Price	money		N	Product Price
Content Description	N text		N	Product Describe
Manufacturer Inform	N text		N	Manufacturer Describe
Category Id	int	4	N	Category No

Code Design Tool

Hibernate is an OR-mapping technology that is used to map database structures to Java objects at run-time. Using a persistence framework like Hibernate allows developers to focus on writing business logic instead of writing an accurate and preferment persistence layer (which includes, DAOs, SQL queries, JDBC code, connection management, etc.). Microsoft SQL Server is an application used to create computer databases for the Microsoft Windows family of server operating systems. Microsoft SQL Server provides an environment used to generate databases that can be accessed from workstations, the Internet, or other media such as a personal digital assistant (PDA). These technologies are available to our system for good portability.

Realization of Commodities Trading System and Typical Modules

Combining the need of campus goods trading request, we develop a responsibility system used in Changzhou University, which is based on my eclipse and sql server 2005. The project supervisor is the central console for managing the data and each kinds of module, which not only can divide the organization according to the type of documents, but also directly establish and edit each kind of documents, finally compile to the application programs and the execution documents. Therefore, while designing the commodities trading system, first, we establish the project. After opening the project supervisor, we establish the commodities trading management the database file, then concentrates various sheet documents in the database file to carry on the operation management.

Fig. 3 shows our developed commodities trading system's interface. On this platform, we can sign in, login in and search different kinds of commodities. At the same time, we can leave a message as needed to the man who manages the notice of a commodity's information. The functions of contacting the website's manager and chatting online are also provided.

Conclusion

A on-line commodities trading system is developed in this paper. The design uses SQL Server as the database development tool and Java as the development platform. In this system, customers can register as a member of the system conveniently by providing their information, proceed to look over

and search the commodities, and look into the details, then they can purchase the commodities as needed. The system will generate orders to customers automatically, fill out and delivery the orders according to the information submitted by customers. Test results show this system has these advantages such as data stable, user-friendly interface and easy operation.



Figure 3. System Interface

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References

- [1] Yingqi Yan, XiaoHong Han. The design and implementation of college students' second-hand goods trading platform, automation and instrumentation, 2015, 4, 145-146
- [2] Long Hong. Campus second-hand goods circulation system service solution design, journal of nanjing university of science and technology, 2016, 37
- [3] Jin-Yu Song, Chen Ping, Chen Gang. Database principles and applications [M]. Tsinghua university press, 2014.
- [4] Somerville. Software engineering [M]. Mechanical industry press, 2011
- [5] Ping Li, Huantian Cai. E-commerce system development and implementation[J], journal of computer application research, 2015,12: 28-31.
- [6] Zheng Renjie, Ma Suxia, etc. Software engineering: a practitioner research methods [M]. Mechanical industry publishing press, 2011, 05.
- [7] ZhiChang Qi, QingPing Tan, NingHong. Facing the 21st century curriculum: software engineering [M]. Higher education press, 2012, 05.
- [8] Yang jian, Yang Li. The electronic commerce security and pay for the second edition [M]. Mechanical industry publishing press, 2011.151-162.
- [9] Li Bin, Wang Jiarui, Wei Xin. Design of network information system based on B/S model [J]. Computer knowledge and technology, 2015, (35) : 81-91.
- [10] Zewan Tang. Data management information system design and implementation [J]. Management science, 2014 (7):101-105.