

Research on Design of Internet Financial Platform Based on Data Mining

Yuan Li

Diablo Valley College, Pleasant Hill, 94523, United States

Abstract. At present, there are few researches on the technology of Internet-based Internet financial platform, and the related literature mainly focuses on the P2P model itself and its social value. Basically, most of the research is about the emerging products of network lending, risk, developmental barriers and regulatory issues. Based on the computer technology of P2P financial platform, this paper completes the design and implementation of P2P Internet financial platform with J2EE MVF framework and related Internet technology. In the process, the first investigation and study of the general needs of P2P financial model to complete the system needs analysis; and then use UML Tools and Power Builder and other tools to complete the P2P loan system planning and design, according to demand analysis to complete the functional design of each module and finally with the spring MVC architecture to complete the implementation part of the system. In the design and implementation part, not only to complete the functional requirements of P2P platform, but also the introduction of data mining technology to complete the statistical analysis of user behavior.

Keywords: Design, Internet Financial Platform, Data Mining

1. INTRODUCTION

The traditional financial lending model has inherent deficiencies. For example, banks do not want to provide lending services to small and medium enterprises, which hinders the optimal allocation of social funds and resources. Small and medium enterprises cannot get the funds cannot be put into the production of resources, which is not conducive to the upgrading of Chinese social industry. P2P (peer-to-peer) financing model is a rise in recent years, a personal direct credit model of individuals, it appears just to solve the above mentioned small and medium enterprises financing problems. P2P financial platform uses the Internet's information technology, greatly reducing the transaction costs and information asymmetry obstacles. P2P financial platform so that the participation of individuals involved in a direct dialogue between, to a certain extent, reduce the cost of capital flows, such a financial model is full of new vitality. P2P financial platform makes up for the lack of formal financial

institutions. P2P financial platform development has a history, the world's first P2P network lending platform is the British Zopa, Chinese first P2P loan site is patted. With the popularity of Internet technology, P2P financial development can rely on the technology and form become diversified. The combination of P2P and the Internet makes P2P finance more advantageous in terms of operating costs and information exchange. Internet financial platform for financial transactions both sides to provide an easy access, low cost, high interactive information flow market. Such a market and platform is very conducive to the realization of the capital of the two sides of the efficient allocation of capital. Not only that, P2P financial platform for the parties to the transaction to provide more means of trading, such as network payment, mobile payment, etc., these payments are almost free from space and time constraints, the whole transaction process more smooth, efficient and low cost. With the P2P financial platform, the cost of the entire transaction process, such as payment costs, transaction information search costs, information matching costs, qualification audit costs are substantially reduced. Not only that, with the help of Internet finance, the two sides of the transaction in the P2P way for financial transactions, the two sides more transparent information, information communication more smoothly, the transaction becomes more simple. At the same time, P2P financial platform can use cloud computing and large data and other information processing technology, the data mining and analysis, and applied to the customer rating and risk management, better solve the incomplete information has been plagued by the traditional financial Institutions of the adverse selection and moral hazard issues, it is clear that the Internet financial P2P platform is the mainstay of P2P lending.

2. INTERNET FINANCIAL PLATFORM NEEDS ANALYSIS

P2P loan platform is a personal to the individual, also known as point to point network borrowing platform. The platform will be the amount of the loan project is divided into many copies, investors through the bid to buy shares to inject funds, is a small amount of funds gathered, and then borrowed

to the needs of the loan population of a small private loan model. Its entry threshold is low, making the use of the masses higher. Although P2P lending platform operates a wide range of models, but their process is basically the same. Users of the platform can be divided into three categories: investors, borrowers and platform system administrators. For investors and borrowers, to use the platform to register the first account, improve the information. After the lender need to make a loan application, and by the platform for its qualification to confirm whether to take the loan project, and investors will have to recharge, to find the favorite project after the tender, once the loan relationship is established, the lender need to stage Return the investor principal plus interest. At the same time investors can transfer the claims at hand. If the lender fails to repay the loan, the item fails. At this point, the platform needs to be agreed in advance of the compensation, the investor compensation. In general, the lender will be part of the money as a risk reserve in advance of the platform, in the event of rejection or overdue return phenomenon and the platform will be paid out of the risk of money to the first repayment to investors. If the risk reserve is insufficient, the platform can only repay the remaining part of the investor's own funds. There are currently large P2P loan platform, the share of risk reserve funds are related to the credit rating of the lender, the lower the credit rating is required to pay the risk of higher funds, while low credit rating of the project, the platform will generally only and investors agreed to only principal, thereby reducing the risk of loss. In the Internet age, any independent platform is difficult to achieve competitiveness, so the P2P platform also needs to have the ability to communicate with the outside world. It includes the credit evaluation agencies to obtain information on the user credit, with the major financial institutions to obtain a more convenient trading model and a strong backup support, and some operators to cooperate with others to provide some of the high-quality algorithm to obtain more excellent data analysis results and so on. In summary, the system needs to have the business functions of the normal business process operation function, failure of business compensation and external communication functions with the interface function.

3. INTERNET FINANCIAL PLATFORM DESIGN

Web site system is the information node on the Internet, its development and presentation of all kinds of forms, but their overall composition of the structure is basically the same. WEB technology is the first use of C / S mode, that is, client / server-side mode, this approach requires the user to install the client software, to be able to normally read the server-side information. And the user needs a

variety of information, each kind of information needs to install a corresponding client to get the situation has been unable to meet the needs of users, with people's exploration, B / S (browser / server) structure gradually rise , the browser can access a platform built on a different platform, the equivalent of the original needs of a number of clients and can be adapted to all platforms all-round client, successfully achieved from one to one to one-to-many conversion]. With the popularity of the network, a large number of people began to use the network to visit the site caused by congestion, the site on the performance requirements are getting higher and higher. Site compression, stability, etc. has become an important indicator of the evaluation site. In order to improve the maintainability of the site, scalability and running fluency, people in the development of the site, began to use a variety of structures, the current popular three-tier structure model, the use of distributed technology, the presentation layer, logic Layer and data layer separately, respectively, designed and then coupled into a complete system.

The first layer is the presentation layer, the user and the system for human-computer interaction interface. The browser will be the background of the html code into a text and pictures and other users can understand the way to show it. The second layer for the business logic layer, the server side of the user to do the operation of the analysis, the implementation of some procedures to return to the user needs something. The third layer for the data layer is a platform and database connection interface, the database can be read, modify and other operations.

Chapter 2 describes Spring MVC as a lightweight J2EE framework, in the construction of J2EE system, many advantages and this paper intends to use Spring MVC three-tier architecture to complete the platform construction. The following three layers of technology used in the analysis.

Business logic layer uses JAVA language, the use of Struts2 business request function to jump, the use of Spring-related examples and database connection operation. Struts2 framework uses the Web Work framework as the core of the system architecture. The filter can exclude invalid requests, the distribution of the http request analysis, and then through the check interceptors, workflow interceptors, token interceptors and other layers of processing to help developers deal with a variety of duplication of work to reduce the developer Use the underlying API to reduce the frequency of use. At the same time Struts2 framework to overcome the Struts framework to determine the thread to provide a safe response mode.

For the platform, the choice of the database is very important. Excellent database read speed, can cope with a large number of data management greatly

enhance the system performance. Currently used in the database are IBM DB2, Oracle, Access, Sybase, My SQL and SQL Server. This article is developed by a national open P2P financial lending platform, the amount of data is very large, the database storage requirements are relatively high. Because Access, Sybase, and My SQL belong to the small and medium database management system, they are not used. DB2, Oracle and SQL Server are large relational databases.

Development of WEB projects, the first thing is to carry out the design of the database, and then is the UI and logical design. The rationality of database design directly affects the ease of system development and the size of data storage. Usually the database design process is as follows: (1) demand analysis stage: analysis of business needs, to obtain the required data types, scope and constraints between the data. (2) conceptual design stage: the entity corresponds to a mathematical, clear the constraints between the various attributes, draw a conceptual model. (3) logical design stage: a variety of links with E-R diagram to describe, and then converted into a logical structure of the database model that. (4) physical design stage: Establish the index directory and implement the logical relationship.

The system has only two cores, one is the user information and the other is the project information. In addition login account that is essential. In order to facilitate management, but also need to design the log table. User information is essential in the database. Even if the amount of information is a single user, if all on a table, then the table number of columns (attributes) too much, not easy to maintain, and with the increase in the number of users, the database table will become unusually large. So the user information is divided into multiple tables to store, usually using the user ID (unique) as multiple tables between the associated attributes. User information can be divided into basic information table, capital table, loan information table, debt information table, etc., these tables can be composed of views for joint query. Project information is the main business, but also a key to the database. Project information can be divided into project basic information table, project schedule, project classification table and so on. Which the basic information table of this project a large amount of information on the table, but also need to be divided into multiple tables to store. The project schedule stores the location of each item in the workflow, as well as the previous log information for the project. The project classification table is designed to facilitate the classification of the project. Each item information table is usually used as an associated attribute with the item ID (unique). Log information is designed to facilitate the management and maintenance of

the platform. It can be divided into three categories: access log table, login log table and operation log table. The access log table is used to store IP information to access this platform. Logging log table is used to record which users are logged on to the platform. The operation log table is used to record what the user has done. The log table has a huge effect on the management and maintenance platform, but this log volume is stored very much every day. If you do not clean up for a long time, it will cause the database to be unusually large. You need to set the auto-clean mode or manually clean up the information.

CONCLUSION

Introduce the relevant technology. Analyze the advantages and structure of the Spring MVC framework and introduce the Spring MVC workflow. Analysis of the advantages of Struts2 framework, it is in the process of dealing with the request, the use of a interceptor design pattern, through the configuration interceptor, can help programmers to deal with some of the commonly used repetitive work, such as access control, character calibration work. This design pattern greatly reduces the number of times the programmer and the underlying interface interact, making the programmer's development more low coupling. The working principle of the quartz framework is introduced. Analysis of P2P network lending platform needs. The system requirements are analyzed in three areas: business needs, risk assessment needs and performance requirements. Analyze the platform business process and draw out the business flow chart to introduce the risk assessment and risk aversion of the P2P network borrowing platform. The performance index of the system is divided into micro indicators and macroscopic indicators. Microscopic indicators include CPU occupancy rate table, available memory number and disk read and write speed. Macro indicators include compression resistance, stability, delay value and security.

REFERENCES

- [1] Li Haiyan, Lin Yong. Java Web tag library application method [J]. Computer Knowledge and Technology. 2015 (09),11-18.
- [2] Guo Weidong, Li Ying. P2P model of network lending platform[J]. China Circulation Economics. 2014 (06),112-119.
- [3] Shen Lianghui, Chen Ying. American P2P network credit risk management experience and enlightenment to China [J]. Credit. 2014 (06)121-129.
- [4] Guo Yang. Chinese P2P small loan development status quo[J]. Shanghai Finance. 2012 (12)12-19.
- [5] Zhang Ersong. Java Web system sharing cross-domain cookie implementation[J]. Journal of

Beijing Union University 2012 (04)321-324.

[6] Yi Tianpeng, Chen Qian. Comparison of segmentation performance of Chinese parser based on Lucene[J]. Computer Engineering. 2012 (22)1156-1159.

[7] Wu Junna, Qi Yicheng, Yang Di, Zhang Huafangzi, Liu Mingjun. Time information in topic tracking application [J]. Electronic Technology. 2012 (07)27-33.