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Retraction

Retracted: Design of University Financial Information System Based on Data Mining Technology and IoT

Wireless Communications and Mobile Computing

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] Y. Guo, "Design of University Financial Information System Based on Data Mining Technology and IoT," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 6830608, 11 pages, 2022.

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Research Article

Design of University Financial Information System Based on Data Mining Technology and IoT

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As China's information construction level keeps getting better and higher education keeps getting better, new rules and regulations are being made and put into place. These new rules and regulations require colleges and universities to have comprehensive budget management, dynamic fund management, scientific forecast analysis and performance assessment, and the integration of campus cards and digital campuses. At present, the financial management concept and financial management software used by colleges and universities have been relatively lagging behind, which cannot adapt to the needs of current information and career development. Therefore, the financial information system of colleges and universities based on data mining technology is designed. The hardware part is designed with CORBA interceptor, B/S structure, and SQL converter. The software part first figures out what kind of financial information platform is needed. Then, using data mining technology, it builds a financial information model. Finally, it designs the functional module of financial information technology and builds the financial index system for colleges and universities. The results of the system tests show that the designed financial information system works well and has some use value.

1. Introduction

In the new era, the fast growth of information technology has led to a number of new rules and regulations. These include the financial system for colleges and universities, the accounting system for colleges and universities, the accounting standards for public institutions, and the internal control standards for administrative institutions [1–3]. Now, the university financial management system has not fully adapt to the development of higher education in our country, specific performance in financial, accounting, educational administration, personnel, scientific research, oyster for various modules basically not related, are independent of each other, between each module did not establish a complete communication mechanism, just solved the artificial mechanical repetition and simple management issues [4, 5]. In resource allocation and performance management, the efficient use of funds guards against financial risk weak aspects of performance, or you could say powerless. How to set up a perfect financial management system, integration

of various modules is connected to each other, and control strictly, process flow, perfect mechanism, security and stability, clear economic responsibility, expand the space is enough, can be accomplished under the background of informatization goal and task of financial management at colleges and universities, make it adapted to the rapid development of information technology, become the focus of university financial management issues.

Now, the financial management system of colleges and universities is very imperfect; it can also be said that it cannot be called a system. Just the manual accounting of universities and simple management problems, with the general accounting processing system as the core [6–8], the charging management system, which includes students, the workers' wages management system, the fixed assets management system, the budget management system, the current account management system, and the school silver payment system, is a problem from the point of view of financial management. They have not planned and designed the system from the perspective of school administrators. In China, financial

managers and researchers at many colleges and universities have done a lot of detailed studies on how colleges and universities handle their money in recent years [9, 10] and put forward many good ideas and practices, with many concepts and experiences worth learning from. However, most of the research results cannot become a systematic study, but simply from the financial management of colleges and universities facing problems and measures to improve and other aspects of the elaboration. There is not much research on how colleges and universities manage their money to come up with new ideas, plan this idea in a systematic way, or provide theoretical support. So, this paper uses data mining technology to design a new financial information system for colleges and universities. IoT users may be provided with a highly straightforward presentation of the visualization of IoT big data analysis, which makes it simpler for IoT users in many sectors to extract useful information and supports users in making the best decisions. IoT applications have high expectations for the promptness, dependability, and trustworthiness of DM outcomes since they are tied to the national economy, people's way of life, and life safety. Big data specialists and business professionals need to research DM algorithms. It is crucial to do a predictive study of IoT applications. To investigate prediction models and algorithms that adapt to the IoT big data in various sectors, research teams made up of industry experts, IoT specialists, and big data experts must be formed. To standardize and flexibly organize diverse data resources that are geographically dispersed and make it easier for users to search for keywords, tag keywords, or other input semantics to enhance their capacity to actively learn, networking demands a new set of theories and approaches. The processing results better represent reality, which is the focus of research on big data of the IoT, as a consequence of the combination of raw data collected by various sensors, multidimensional data fusion, multiuser collaborative sensing, and data quality management [11].

2. Hardware Design

2.1. CORBA Interceptor.
CORBA has become the mainstream platform technology for financial information distributed software development. Almost any combination of existing operating systems and hardware platforms supports CORBA technology [12]. It is independent of programming languages, computing platforms, and network protocols, making it very suitable for the development and integration of existing distributed system applications.

The interceptor in CORBA specification provides a convenient solution for the realization of service object state management [13]. Interceptors are a key part of the CORBA2.3 specification. They can add ORB services to the paths that objects use to call other objects. Interceptors allow CORBA-compliant object systems to add portable ORB services in a very flexible way. By adopting interceptor technology, the services within ORB can be separated clearly, and the independence and coexistence of different ORB services can be realized. Specifically, the interceptor technology introduced in the CORBA specification is designed to be able to incorporate ORB services into the ORB kernel in a portable way.

An interceptor can be responsible for executing one or more ORB services [14]. Logically speaking, in one customer and one item, an interceptor can be inserted into the call path between standard objects. Two types of interceptors are defined in the specification of CORBA2.3, including request-level interceptors and message-level interceptors, as shown in Figure 1.

As you can see from Figure 1, the request-level interceptor is responsible for processing a given request. Request-level interceptor intercepts the ORB execution process at the request level and processes or invokes the ORB service based on the current request. Access control services and transaction services can both be plugged into the ORB execution path via request-level interceptors. Message-level interceptors are responsible for sending and receiving messages. Message-level interceptor is a GIOP message processing object; currently, only encryption authentication service uses message-level interceptor.

2.2. B/S Structure.
The system client uses a browser to access the server and browses, queries, manages, and maintains system functions through the page. Tomcat is used as a web application server on the server, which is also a JSP or servlet container [15–17], and access and manage the background CORBA objects and oracle database server, as shown in Figure 2.

As you can see from Figure 2, the B/S constructor is divided into several different layers, the first being the client. On the client side, administrators can access the content in the Tomcat web server through a web browser such as IE net scape. In this section, customers only need to browse the contents of the server and browse, add, search, configure, and set the contents of the web page. Most of these pages are developed in html or JSP language. Customers can modify the contents of the server by visiting these pages and filling in the corresponding information. JSPS can be embedded with JAVA code that sends the data filled in by the client to the Tomcat server [18, 19], which then generates servlet that can manipulate databases in the background or access information collection objects, which are CORBA objects residing in the network. It is responsible for collecting the data needed by the system.

The web application server is the second level. The platform on which the system runs is the Tomcat web server. It is a JSP or servlet container, which is in charge of getting requests from clients and sending them to the right servlet programs to be handled. The server then sends the results of the servlet process to the corresponding client. Also in this layer is the information storage database, which is used to store the configuration information of the system and the information about the deployment of applications. At the same time, this information storage database is also responsible for the collection and storage of statistical information [20]. It resides in the CORBA object of the network and is responsible for collecting the data required by the system.

Information can be collected in two ways: active and passive. In the active mode, these objects regularly collect
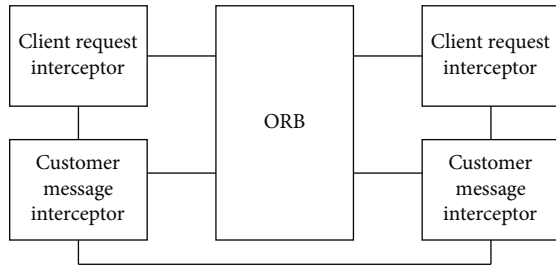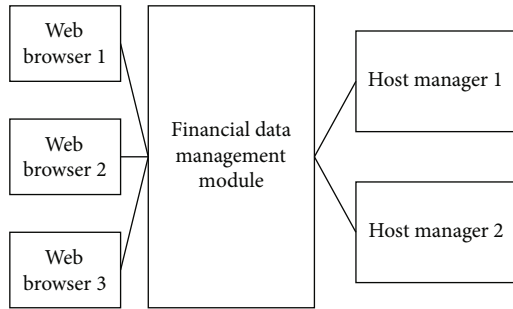
Figure 1: Interceptor model.

Figure 2: B/S structure drawing.

database server and system running information and directly save the information in the corresponding database and tables. In the passive way, only when these objects receive the method call that needs to collect information, it will collect the required information. The servlet program in the system mainly initiates the collection of information, and the collected statistics are generally only displayed to customers or processed for other modules of the system. These data generally do not need to be stored in an information storage database. In this system, servlet is used to access the content in the information storage database through JDBC. At this time, the financial information accessed needs to be monitored. The monitoring model is shown in Figure 3.

The third layer is the database application server. This part is the main part of large-scale transaction processing system—massive database system. It is mainly responsible for the business of large-scale transaction processing system, including the loading, query, and backup of massive data. As the system mainly monitors and manages the massive database system through middleware, CORBA objects for collecting system information reside on each cluster and each server of the massive database.

2.3. SQL Converter. In order to ensure the language compatibility of information system, it is necessary to use SQL converter, SQL is short for structured query language, and its Chinese full name is structured query language. From the function of this technology to classify, it can include data query operation, direct data operation, data definition, and data control and other functions. It is developed by Microsoft and the promotion of [21], after discussed by ANSI and standards committee resolution, a very classic SQL database management language. It is a relational and widely used
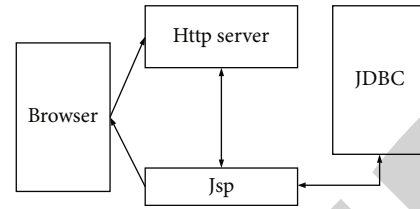

Figure 3: Monitoring operation model.

in various industries, SQL database's main function is to establish the contact between the data, and SQL converter structure diagrams are shown in Figure 4.

As can be seen from Figure 4, the characteristics of the converter are as follows. SQL language features a unified style, data processing in accordance with the protocol; users can gradually modify and improve the mode whenever and wherever they need, so that the system can have good expansibility. The second is highly nonprocedural. That is, data storage users do not need to pay attention to where there is and do not need to pay attention to where to read from, through a unified data read statement, data can be completed, and this design is very conducive to data independence, as well as set-oriented operation. SQL supports collections to store and read data and cursors to manage collections. Finally, it supports a three-level schema structure for relational databases: internal schema, external schema, and underlying data.

3. Software Design

3.1. Analysis of Financial Information Platform Demand. At present, the financial management concept of most colleges and universities is outdated, the information level of financial personnel is not high, and the concept of systematic management has not been formed from top to bottom. Accounting system includes accounting processing system, current account accounting, and project account accounting module. Financial management information system mainly includes budget management system, student fee management system, reports, budget management system, and salary management module. In financial decision support system, the management mode of each school is inconsistent, and basically, there is no orderly induction and sorting of accounting data, and no mature system has emerged. And the updated data will be timely transferred to the financial management system.

Campus one card is one of the systems with wide coverage on the campus network. It needs to interact with and transfer data with the financial management system. The financial management system needs to accept and make payment for settlement data at any time, and the user's bank card information needs to be transmitted in time. The need to make decisions and the need for information to make decisions in a financial management system are the need for data mining. This means that all kinds of information are put into a database and then analyzed and mined to make useful decision-making data. For security requirements, financial data is very important, in the whole system
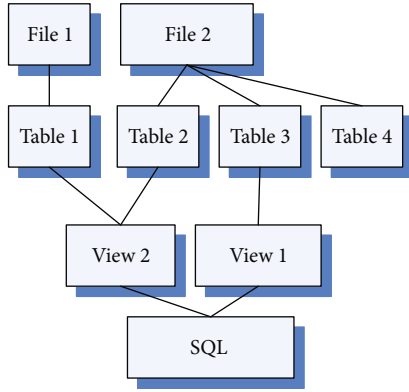
FIGURE 4: SQL converter structure diagram.

TABLE 1: Testing software requirements.

Name	Detailed requirements
The operating system	Window/Unix/Apple/Linux
The browser	The browser
Server operating system	Windows 2003 Server operating system
Server database system	SQL server
Server-side applications	IIS6.0

at the heart of the position. In the information environment, the security of financial data is required to be higher, and perfect and strict security measures and mechanisms must be designed to ensure the security of the system. Setting up a financial management system in a college or university must include both an internal control system and a control index system. This is so that there is a strict audit process and verification procedures.

Verification can be divided into three parts: (1) user verification: according to the school's organization and job responsibilities, setting up user groups, each user's rights and responsibilities should be clearly stipulated; (2) business audit authority: according to the business-centralized management department to design, financial, or on behalf of the school's management department, set a unified level of authority, and then, put the authority approval within the department to the head of the centralized department; and (3) the system operation permission setting: the front operator's operation password setting. Control index system can be divided into financial indicators, including budget implementation, analysis, and other indicators. Accounting indicators include asset-liability ratio and expenditure analysis indicators. Comprehensive control indicators include teaching, scientific research, service to society, and other indicators. To solve the "financial efficiency is not high, school assignments, and inefficient business processes, information transmission lag" and other issues, formulating unified technical standards and parameters, the forming and essence of financial management system, then to realize "budgeting reasonably and control the budget, accurate completing final accounts and reflect the real financial situation". Raising funds in various ways and practice economy, strengthening economic accounting and performance evalu-

ation, rational allocation of assets, strengthening financial supervision and prevent financial risks.

The building is made up of four layers: the data layer, the operation layer, the communication layer, and the organization layer. The management structure is what is meant by the organizational layer. The data layer uses a large database system to build several large, basic databases. One of these is a database of information about people, which includes their category, status, name, ID card number, official card account, job title, and address, a repository that contains a breakdown of all resources, who they are used by, where they are, and so on. Operation layer includes each front desk operating system, including accounting processing system, cost accounting system, budget management system, asset management system, and salary management system; the operating system can uniformly call database resources. The communication layer includes the communication between various systems and the transmission of data information. Compared with other management, it has distinct characteristics, which have higher requirements for financial management. Firstly, financial management tends to be complicated. Second is the financial management target efficiency. Colleges and universities belong to public welfare institutions, all funds come from the financial appropriation, the financial department of the use of funds further clear; all budget performance assessment is or will be fully implemented, requiring colleges and universities to constantly strengthen financial management and improve the use of funds. Third is the leverage effect of financial management in university resource allocation. All the assets of colleges and universities are state-owned assets. It is very important for the development of colleges and universities to allocate resources efficiently from the perspective of short-term and long-term development, which requires financial management to give full play to its leverage and dynamic role.

Financial management of colleges and universities is based on capital, assets management object, to improve the level of service and management as the goal, with students, faculty, assets, and funds for the total resource framework, based on the optimal allocation of resources, relying on national education standard system, with strong, fashion, science, fusion technology platform as the foundation, based on unifie. Large data centers are required to integrate various business subsystems of colleges and universities, link higher education needs and college resources, and cover the whole business process of college service and management, which can not only support daily business processing but also serve the overall management and decision-making of colleges and universities.

The establishment of financial management system in colleges and universities should first meet its own needs. The second is data unity, to ensure that all data information unified management, to realize data sharing and system internal update in time, and to provide accurate, fast, index-based decision support for leaders. The third is scientific scalability, to ensure that the system design is in place, has good compatibility, and has good resistance to external interference but also according to the needs of business development can be upgraded and improved and has good

TABLE 2: Testing hardware requirements.

Name of demand	Requirements
Client hardware	PC
Server hardware	Pentium 4 3.0 GHz memory 2 GB 160 GB hard disk
The network hardware	Communication equipment, can enable Wifi or 2 G/3 G network

TABLE 3: User test example.

The module	The event	The expected results
The login	Entering the user name and password on the login screen	Enter the correct user name and password. The user name and password entered incorrectly fail to be authenticated
Documents management	The voucher entry page is displayed	Can input voucher information and save it successfully
Proof of the query	Entering the credential management interface and select the credential you entered to view	Displaying the status information of the credentials submitted by yourself
The salary management	Enter the salary management interface, select the month to view the job	Entering the salary management interface, select the month to view the job
Report query	Entering report management and select report query	Going to report management and select report query

TABLE 4: A financial administrator test example.

The module	The event	The expected results
The login	Entering the user name and password on the login screen	Enter the correct user name and password. The user name and password entered incorrectly fail to be authenticated
Documents management	The voucher entry page is displayed	Can see the information of the voucher to be audited, and the audit can be successful
Proof of the query	Entering the credential management page and select the credential to be audited	Displays the current user's auditable credentials Unaudited vouchers can be audited
The salary management	Payroll management, edit payroll list	Can edit the salary column name
Fixed asset query	Going to fixed asset management and select fixed asset query	Displaying reports of fixed assets

TABLE 5: System administrator test example.

The module	The event	The expected results
The login	Entering the user name and password on the login screen	Entering the correct user name and password. The user name and password entered incorrectly fail to be authenticated
User rights management	The user management page is displayed	Can assign permissions
User management	Going to user management and select the account password you want to change	The account password is successfully changed
Report management	Payroll management, edit payroll list	Can query reports

scalability. Fourth, it is easy to learn and easy to operate. Accounting personnel can easily master and use it. Other managers can also use it by reading brief instructions or simple instructions, which has simple and convenient man-machine conversation. Colleges and universities are being used more and more, and their three main functions—train-ing talented people, doing scientific research, and helping the community—are getting better. At the same time, the requirements for managing money are always getting higher.

The first is the demand of talent training, which is clearly the demand of teaching management department, student management department, and teaching unit. It is reflected

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TABLE 6: The test results.

Indicators	Test results
The user login	Right
Testing script statement	Right
Credentials to print	Right
The salary management	Right
Report query	Right
Printing the report	Right
Asset query	Right

in the information of students' tuition fee, accommodation fee, and examination fee, the implementation of teaching and research projects, and the performance assessment of talent training quality. This information is possessed by the financial department but is needed by other units. It is necessary to improve the efficiency of talent training. It is necessary to analyze and process this information with the educational administration management system, student management system, employment management system, examination management system, and so on. Second is the demand of scientific research, which mainly is the management of scientific research project management, requirements, performance appraisal project's progress, and national post many times continuously in recent years to strengthen the management of scientific research funds. Increasing the benefit of scientific research funds requires the school time to master the usage of scientific research funds, according to the project decision accordingly. Again is the social service demand, which has the abundant education resources in colleges and universities, scientific research equipment resources, and human resources, and use these resources to provide better and more services to the society; the financial management system is required to provide a more detailed and complete, real financial management, and accounting information, to satisfy the demand of the social resources for more effective configuration. There is the school's management and decision-making to provide financial support, requiring the system to have financial analysis, planning, control, decision-making and other subsystems, and other management systems to support each other and realize the public data at any time the system unified update, for the school economic activities and even the whole school management to provide decision-making basis.

With the change in national requirements for how colleges and universities should work and the gradual increase in investment in colleges and universities, the requirements of the government departments in charge, such as the financial departments, planning departments, tax authorities, banks, and other relevant external departments, have also quietly changed.

The realization of the system must be for all the system software, data, and hardware devices such as a full protection. According to different level of information to different intensity of encryption methods, financial management system of data flow is particularly big, such as school silver interconnected system. First of all from the management,

the need to develop a good security policy, in strict accordance with the security policy implementation of daily work involving security, at all levels of the system connection needs to install appropriate firewalls, network gates, and monitoring software from the physical level, through automation technology, and eliminate the security problems of the system. Secondly, the importance of system backup and recovery should be highly valued, requiring regular backup; once accidents occur, it will minimize the loss. The third is to require managers to have a strong sense of security, business process requirements are completely standardized, and management system is quite sound. To omnidirectional, integrity, multilevel, and related safety products, all resources and services should be effectively protected by means of integrated security modules, internal control index system, and other means.

3.2. Constructing Financial Information Model Based on Data Mining Technology. In order to ensure the accuracy of information management, we need to build a financial information model based on data mining algorithm after analyzing the requirements of financial information system in colleges and universities. Firstly, the constraint information of the model needs to be calculated, as shown in

$$w = \frac{N(h)}{N}. \tag{1}$$

In formula (1), w represents constraint factor, $N(h)$ represents constraint function, and N represents information factor. As the information-based model is affected by multiple indicators during design, constraint information needs to be brought into the formula for solving indicators, and indicators required for model construction are shown in

$$q_1 = \frac{w}{\sqrt{1/N}}, \tag{2}$$

$$q_2 = \frac{w}{\sqrt{1/(N(h))}}. \tag{3}$$

After indicators required by the model are created, indicators need to be verified to verify whether the indicators meet the requirements of the model. In this case, negative constraints need to be carried out on indicators. The constraint process is shown in

$$\mu = \frac{1}{N(h)} \left[\sum_{x \in R} w(x) + \sum_{x \in R} \theta \right], \tag{4}$$

$$\sum_h i + 1 = 1 - \frac{1}{N(h)} \left[\sum_{x \in R} w(x) + \sum_{x \in R} \theta \right], \tag{5}$$

$$i = \left(\frac{1}{N(h)} \left[\sum_{x \in R} w(x) - \frac{1}{N(h)} \right] \right)^2. \tag{6}$$

In formulas (4)–(6), $w(x)$ is on behalf of the normalized function, $\sum_h i + 1$ represents the coefficient of information

processing, and $\sum_{x \in R} \theta$ is on behalf of the informatization management scope. The management information system in colleges and universities tends to be affected by time complexity. Therefore, in the index after the success of the validation, the need to rule out index complexity to the model of interference, at this point the need for interference elimination, is shown in

$$T = \left(\frac{1}{N(h)} \left[\sum_{x \in R} w(x) - \frac{1}{N(h)} \right] \right)^2 - \frac{1}{N(h)}. \qquad (7)$$

In formula (7), T represents the representative formula of model weight after elimination, and then, the financial informatization model of colleges and universities can be obtained, as shown in

$$F_1 = \frac{1/(N(h))}{\left(1/(N(h)) [\sum_{x \in R} w(x) - (1/(N(h)))] \right)^2}. \qquad (8)$$

In formula (8), since the influence of time complexity has been eliminated and the model construction indicators have been integrated, financial informatization processing can be successfully carried out, which serves as the basis for the design of subsequent functional modules.

3.3. Designing Financial Information Function Module. After constructing the information model, it is necessary to design the information function module. Comprehensive budget management is an operation platform for the refined compilation and whole process control of school budget. It can reasonably control school procurement, daily funds, and special funds expenditure, prevent overspending and waste of funds, and generate all kinds of budget execution analysis tables in real time. It also has the functions of reporting and approving the budget with the superior competent department or the financial department and receiving the approved indicators. Its business covers three parts, namely, budget preparation and reporting, index management, and fund use plan management. Budget compiling system is aimed at college budgeting normalized management application system, dynamic work according to the actual business plan budget project databases, in front of the financial sector budget every year budget report through this system. Finally, the financial department forms the information of "one on" of the department budget of the fiscal year to realize the normalization of budget preparation.

All types of index funds set in colleges and universities support for multiple levels, convenient late summary query. Expenditure plan management is to manage the budget implementation in advance and to prepare the expenditure plan of the executable number of indicators; the execution of the expenditure plan can be inquired. The business department can apply according to the quota, that is, prepare the appropriation plan. The financial department can approve the appropriation plan application and support multidimensional query reports to meet the different requirements of users.

Fee management includes student fee management, other income management, and fee bill management; management of all income student fee management is related to the student tuition fee, accommodation fee, remission, and subsidy, as well as various cases of payment and expenditure management application system. The system includes basic information of students, details of charging items, tuition reduction and exemption standards, various subsidy policies, tuition deferment, multiple payment, unpaid settlement, bill printing, financial reconciliation, and tuition storage (treasury), to provide relevant personnel with student fees report information and other applications. The system has the application functions of cash, bank card withholding, transfer, online banking, and other payment methods. The system can screen the information of students in arrears in real time to provide accurate basis for collecting fees. The system can be associated with the course selection system, teaching material system, and information inquiry system, with flexible management methods, urging students to establish and overdue management of unimpeded communication channels. The system can be associated with student loans, scholarships, grants, and other management systems to assist students to collect fees timely and in full to the greatest extent.

Other revenue managements, funds allocated into nonbudgetary funds income and other income confirmation to the account registration management and budget index linkage, generate the corresponding index control data, revenue management also can get bank document information in real time, and income documents can directly generate income proof and revenue management, to establish a revenue budget management evaluation system that laid a solid foundation.

Project management is the whole process management of school projects and scientific research projects from project application to fund allocation and accounting, including project planning, application, review, formulation, approval, budget index register, capital planning, fund raising, bidding management, implementation, management, capital expenditures, project final accounts, and project performance evaluation. Such as content, realize management closely around the project management and money management is the basis of project; funds management is conditioned by project management mode. The establishment of project funds management information platform is to provide standardized services for the school's overall project management, improve management efficiency and service quality, and enhance the transparency and standardization of project information, project management system for the establishment of accurate, effective, and feasible project performance evaluation index system that provides the possibility. Project management system can provide the support to the project manager to project management, make its better coordinate the relationship between inside and outside the project, supervise and urge the project schedule, plan and focus subject task, and provide support for scientific research management and leadership, to be able to manage, supervise, and guide the good implementation and complete the task of the project (subject).

Asset management includes fixed assets management, intangible assets management, procurement management, contract management, quota management, inventory management, and teaching material management. Procurement management is to strengthen the supervision of government procurement, standardize the whole process of procurement budget implementation based on the government procurement law and relevant policies and systems, and form an organic government procurement information network system. Under the control of the procurement budget, the whole process of government procurement affairs and fund supervision system including the compilation, review and distribution of procurement requirements, change management of procurement methods, review and confirmation of procurement contracts, and payment of procurement funds is integrated. Full record engineering contract management, outsourcing, purchasing, and bidding information related to the agreement of contract, contract to generate, collect payment plan, and timely reminder to complete the contract, payment processing, before the end of the contract, issues a reminder notice of expiration of the contract, the notice next bidding preparation, achieving complete full life cycle management of the contract. The electronic contract is convenient for the leader to consult each contract in the examination and approval.

Quota management is the main target according to the standards for staffing levels of colleges and universities, as a late for school standards in material purchasing and receiving, according to the approved funds department personnel staffing levels. Inventory management adopts advanced wireless communication technology and network technology, using bar codes and bar code scanner (also called data acquisition terminal); the goal is to transfer efficiency and inventory control of materials for the colleges and universities, in the work place in situ, real-time, fast, and accurate data input, query and update system, input receipt, order and process easier, and faster movement of goods, putting an end to input errors, minimizing the warehouse operating costs, and improving work efficiency. The system can customize the setting function of multilevel student organization structure and can realize the management of basic information of multicampus and multiclass students. The system supports the setting of teaching materials warehouse in the branch area of the school with multicampus and carries out inventory and inventory allocation management among the warehouses.

For the financial capital supervision and analysis system for all funds supervision and analysis, colleges and universities are increasingly expanding enrollment and merger requirements for centralized financial inquiry, effectively solving the problems of different teaching and independent financial accounting of the headquarters of financial supervision. And adopt a variety of graphics analysis and display. Dissecting each college leadership decision elements, with the tools of data warehouse to the accounting information of multidimensional query, targeted depth analysis, and decision support management cockpit type, has an overall analysis of the financial management of college and university's information, budget, comprehensive analysis, balance of payments structure analysis, project implementation, regular budget analysis, and budget allocation process topics such as decision analysis function.

Expenditure management includes online reimbursement management, remote booking management, business card management, and cashless account management. Through online to submit an expense account management for deducting the service and budget, the actual reimbursement of business is dealt with by the accounting personnel according to the people concerned to provide paper documents and reimbursement system corresponding to information on the Internet; after checking, give formalities. Through online to submit an expense account management, to reduce the heavy workload of financial personnel, and to improve the reimbursement hall for speed, regulate the right of reimbursement documents to fill in, the correctness of original document data is guaranteed, and remote reservation solves the problem of long queue and long waiting time. After the initiator fills in the reimbursement items, he sends the documents to the accounting office for preliminary examination. The documents passed by the preliminary examination can be queued for about number. The on-site queuing management is standardized, and the number is arranged according to the documents approved by the preliminary examination, and an appointment time and an appointment window information prompt for the reimbursement business are given to the newsreader. For the documents that have passed the preliminary examination and have been successfully booked, the sponsor can print the paper documents and hold the paper documents for the signature of relevant leaders (electronic examination and approval process can also be set up for this process) and then handle the relevant reimbursement matters according to the number and time of appointment. Business card management is provided for the reform of colleges and universities that carry out official business card application system; the basis can provide flexible interface banking system, supporting under different reimbursement means business card application, at the same time with the national treasury centralized payment system and budget units accounting system integration, to achieve business card application with the national treasury centralized payment closely with financial management, budget, and business unit.

Cost accounting is an economic management activity that records, classifies, collects, allocates, and provides relevant cost information. Thirdly, the expenditure items are collected to calculate and collect the cost of student training, so as to calculate the average cost of student education.

3.4. Constructing Financial Index System of Colleges and Universities. It clearly points out that colleges and universities should establish and improve the internal control system, economic responsibility system, financial information disclosure system, and other supervision systems. The main, simplest, and most effective way to carry out this article is to implement internal control through information means and embed the analysis index system inside the system. According to the needs of school management, the internal control system should be formulated scientifically, the financial

analysis index should be set reasonably, and the internal control work should be carried out. In order to enhance their working skills and promote the development of the organization. In view of the characteristics of many projects and funds in colleges and universities, a dynamic monitoring hierarchical early warning scheme is built, and the key suspect data is tracked through the early warning analysis system.

The internal control of colleges and universities should follow the principle of comprehensiveness, importance, adaptability, organization, mechanism construction and system, key positions, prepared financial information, and so on and so forth. Through the whole process of school economic activities, the risk of economic activities can be controlled by establishing systems and analyzing index systems. The system mainly includes posteconomic responsibility management method, internal check system, bill management method, financial management method, accounting reimbursement method, and authorization and approval system. The analysis index system mainly includes basic school-running index, budget management index, financial risk management index, revenue and expenditure structure index, financial development ability index, teaching analysis index, scientific research analysis index, and talent training analysis index. Budget analysis indicators for the school members are analyzed, the implementation of the budget allocation and its specific for financial approval number, the number of budget allocations, the funding balance number, number of budget expenditure, expenditure balance analyzed, and the real-time to budget overall proportion, to reduce the budget allocation schedule and grant implementation schedule and budget implementation schedule for analysis. The budget structure analysis index is the application of comprehensive analysis of the budget composition of the school according to different latitude, which is specifically divided into project, personnel, public expenditure, and other structural proportion analysis according to the expenditure structure. According to the source of income, the proportion of financial subsidy income and school fee income is analyzed.

The index of expenditure structure analysis is to analyze the school's expenditure by department, expenditure subject, expenditure category, and budget year. It also makes a visual analysis of the quarterly implementation progress of expenditure and carries out detailed information analysis of subordinate units of the department. The project implementation progress analysis index is a macroanalysis of the implementation progress of various special expenditures of the school. It can analyze the real-time implementation progress, quarterly implementation amount, and implementation progress of each special project of the school, as well as the comprehensive analysis of the financial budget approval, budget allocation, and budget expenditure of the current year. The process management of scientific research project funds is analyzed, including statistical analysis of various information, such as scientific research budget, allocation of scientific research funds, funds to funds, financial funds allo-

cation, scientific research final accounts, project closure, and project quota control. The overall analysis index is the analysis of the overall implementation progress of the school's personnel expenditure, public expenditure, and project expenditure. Through the overall analysis, the progress of the implementation of the three expenditures and the trend and law of the monthly implementation can be seen in real time. For any of the analysis indicators, our managers can set alarm values according to the specific situation of the school, and the system will remind and control the economic business according to the alarm value set.

4. The System Test

4.1. Test Preparation. In the software development process, after the completion of development, it is necessary to conduct tests to judge the actual results and expected results. The test environment must be configured in advance. Table 1 shows the test software requirements.

It can be seen from Table 1 that the software meets the test requirements at this time. In order to ensure the minimum error in the test environment, the test hardware needs to be deployed in advance. The parameters of the test hardware are shown in Table 2.

As can be seen from Table 2, general software starts from the initial requirement analysis and then enters the stage of development and coding through outline design and detailed design. After development through the efforts of developers, the code needs to be unit tested. After the unit test is passed, it is necessary to integrate multiple units together for integration test. After integration test validation, system testing is required [22–24].

The testing process can be divided into the following six steps. Firstly, analyze the product and finalize the test plan. Secondly, it is necessary to design test-related use cases to ensure the correct system function. Again, if the startup criteria are met, the test is executed. The results of the tests need to be released to developers for code tracking and development change tracking. After the developer's nervous software bug repair, after the regression of all the problems, it is confirmed that the test report can be submitted, so the test report needs to be written to analyze the stability of the system. As the system has many functions, some of them are selected for test cases. The test cases are listed in Tables 3–5.

As can be seen from Table 3, examples of user login, management, and query are listed.

Table 4 shows that the test cases of financial administrators mainly include login, user rights management, user management, and report management.

As shown in Table 5, the system administrator test includes user login, permission management, password change, and report management. The test cases in Tables 3–5 meet the system test requirements and can be tested [25, 26].

4.2. Test Results and Discussion. In the experimental environment set up above, cases in Tables 3–5 were selected

for system test to test the information management of the system under different conditions. The test results are shown in Table 6.

It can be seen from Table 6 that the system designed in this paper can accurately realize information processing in the automatic script section test, which proves that the designed system has good performance and certain application value.

5. Conclusion

The financial management of colleges and universities is closely associated and other management system of colleges and universities, as well as exchanging. Through constructing the reasonable financial management organization structure, designing or buying open financial application software, the construction of large data warehouse, standardized program interface, perfect the internal control, and finally realizing the college financial management and comprehensive informatization level continuously improve together, promoting the healthy, rapid, and comprehensive development of university undertakings.

The construction of the new system of university financial information management information real-time transmission to become a reality, the beforehand control of financial control by original (budget), matter control (accounting) and afterwards control (internal audit) to real-time control the economic activities of colleges and universities can be continuous and effective monitoring, give full play to the role of financial management, maximum limit to improve the efficient use of resources, ensure the healthy development of all undertakings. The construction of college financial management system under the information environment is a long-term, complex and changeable project. With the progress of science and technology and the development of higher education in China, the information is gradually changing the work, study and life mode of teachers and students in colleges and universities. The construction and research of college financial management system should also comply with the trend of social development, from the perspective of college management modernization and improve the education system reform in the process of comprehensive planning. In view of the deficiencies in the research, the experience and lessons in the practical work are constantly summarized. In accordance with the overall framework of the design, the method of gradual integration is adopted for continuous construction.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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