Design and Implementation of Graduate Information Management System Based on SSM Framework

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Abstract: Graduate information management system is based on the computer network environment, the design of a student information management software. In view of the current situation of graduate information management, this paper proposes a graduate information management system based on SSM framework. The system uses MySQL database management system data, the background development language using java language. It mainly realizes the basic information management of graduate students in the education stage, that is, after enrollment, it manages all the businesses of graduate students' personal information, curriculum, etc. The main purpose is to use the existing information construction to better manage the daily work of graduate students. Practice shows that the system not only meets the needs of users, but also achieves stable operation and good results.

Keywords*: Graduate information management; SSM framework; System design

The scale of graduate education and training is constantly rising, so the management requirements for graduate education will be higher. It is clear that to improve the level of education and management, we must first have an efficient information management system. The original information management system of graduate school is only suitable for use when the enrollment scale is very small. However, the current situation of graduate enrollment scale in China has changed a lot. All colleges and universities can no longer use the previous small-scale information management system, which can not meet the daily management of colleges and universities. In addition, because various management systems are independent of each other, there is almost no intersection, which will lead to some difficulties in the maintenance of the system; and at present, the management work still uses paper version, which does not realize complete informatization, which greatly affects the work efficiency.

I. Research content

In recent years, in order to strengthen the development of graduate information management in Colleges and universities, the government has increased efforts to develop the information construction in Colleges and universities, which will drive the continuous development of graduate information management. Nowadays, the information management of graduate students in our country has been carried out in all aspects of school management, which is also of great help to the development of education in our country and plays an important role in the development of school management.

China Education and scientific research computer network is to use advanced computer technology and network communication to achieve campus information sharing, which is an important part of the information construction of colleges and universities in China. China's university informatization has made rapid progress in the construction of China's education and scientific research computer network. At the same time, postgraduate information management also needs more advanced management methods. The gap between China and foreign countries in the field of information has been significantly narrowed.

The purpose of this research is to realize the daily management of graduate students' information. It is an information management software designed for the processing of a large number of data and information in the student Department of colleges and universities. This system is different from the educational administration system, which is mainly used to manage students' achievements. This system is mainly used for the standardized management of graduate students' information in Colleges and universities. Its main task is to facilitate the graduate students in Colleges and universities to Personal information query, in addition to considering the administrator for graduate courses and other functions, this graduate information management system is designed for these.

II. System requirements analysis

In the design of graduate information management system, administrators, teachers and graduate students can log in to the system. The administrator login has a large function authority, which can modify the information of each module, and ensure that the system login personnel can query the latest information at any time. The administrator login can manage five modules, including graduate management, teacher management, curriculum management, professional management and

class management; the teacher is responsible for the teaching work of the whole school, and the teacher login system can view personal information, as well as view the curriculum and the students taught; after the graduate enrollment, everyone will have an account and default login password, and then log in to the research In addition, the system also designs a scan QR code to view personal information. The integration of all operations, the overall use case diagram analysis, provides the use case requirements for different roles of graphical modeling, can be intuitive and comprehensive understanding of the system's functions of each role. The overall use case diagram of the system is shown in "Fig. 1".
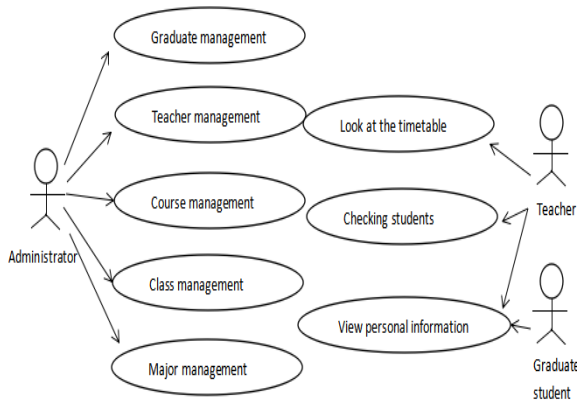

Figure 1. Overall use case diagram of the system.

III. System design

The system uses MySQL database management system data, using SSM framework mode (composed of spring, spring MVC, Mybatis three open-source frameworks, which is a popular framework after SSH, and adopts standard MVC mode, among which spring, as a lightweight framework, also has many functions; spring MVC is a more flexible framework than struts;MyBatis is a persistence layer framework , the background development language is Java.

A. System design principles

1) Safety principle

Graduate information management system is related to graduate students in school during the various stages of some effective data, so the effective data information in the system is very important for the improvement of the system. The system has high data security, not everyone can log in to the system, only users with specified account can log in to the system, and the page display of different types of users log in to the system is different.

2) Principle of practicability

The principle of the system design is to facilitate the management of graduate information for managers. On the one hand, the realization of system functions is the most important thing is to enable users to realize the functions they need in a simple interface.

3) Principle of maintainability

The system design must have the system detection function, so as to facilitate the system maintenance and user management.

4) Data consistency principle

Management system is to add, delete, modify and check data, so the principle of management system design must ensure the consistency of data when multiple users access data at the same time.

B. Overall design of the system

Postgraduate information management system uses campus network and local area network as the operation basis to achieve the purpose of information sharing. In the daily information maintenance mechanism, dynamic analysis and adjustment shall be carried out continuously to realize the ability of resource sharing, data effective protection, efficient processing, etc. At the same time, according to the national and school standards in system development, an information management system with clear interface, complete search results, reliable data protection, reasonable setting of system operation authority is compiled. Based on the fact that the system is designed for users in different environments, the existing mature technology and application case experience are introduced to optimize the language processing, interface beautification, strategy and other aspects of the system, so as to achieve high data security and confidentiality, simple interface and system stability. Due to the large amount of data generated by graduate management, there may be repeated iterations. To avoid this phenomenon, the system realizes the management of all information, and this paper mainly introduces the function of administrator module. The overall design of the system is shown in "Fig. 2".
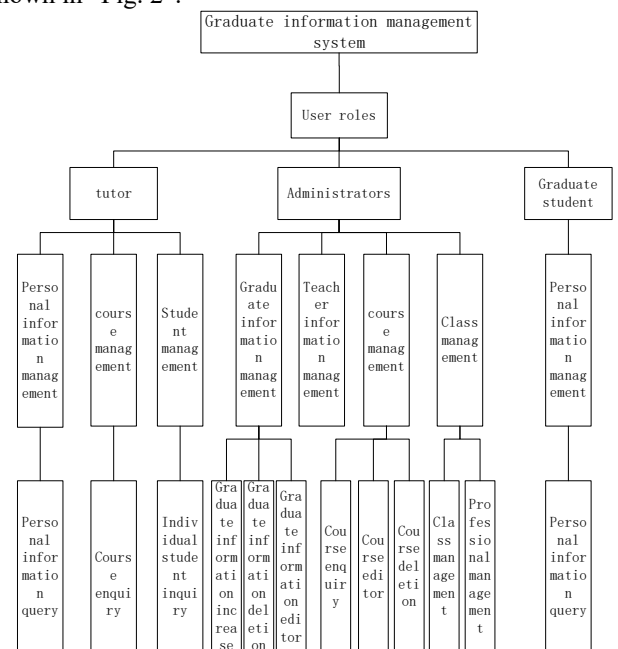

Figure 2. Overall design of the system.

C. Detailed design of system module

1. Administrator module

The administrator module mainly includes teacher management, graduate management, class management and curriculum management. In this system, the administrator has the most function modules. The

administrator is the management of all user information. The flow chart of the administrator module is shown in "Fig. 3".
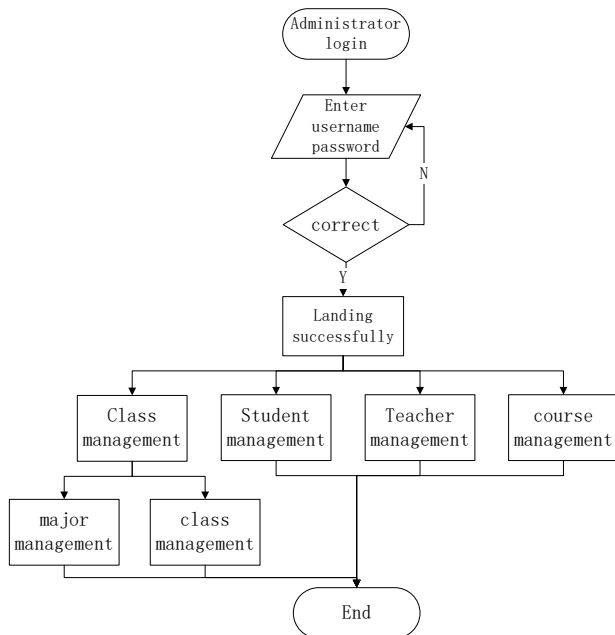

Figure 3. Function flow chart of administrator module.

2. Teacher module

The functions of the teacher module in this system include personal information query, curriculum query and students view. The function flow chart of the teacher module is shown in "Fig. 4".
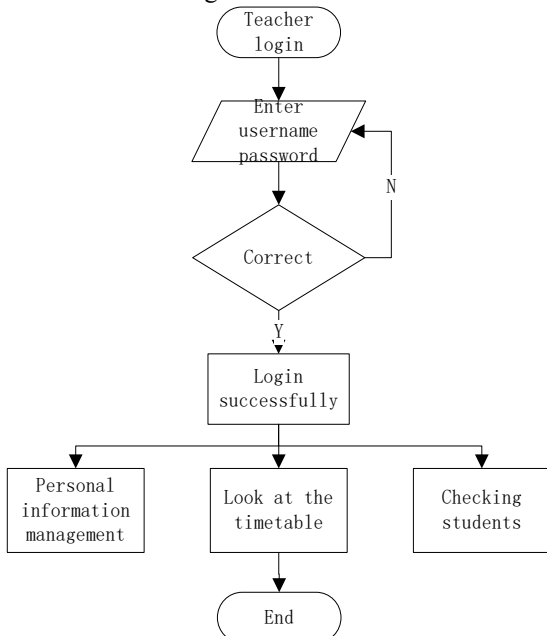

Figure 4. Functional flow chart of teacher module.

3. Graduate module

This system is to manage graduate students' information, so there are relatively few functions involved in graduate students' own modules, and graduate

students' login system can only query personal information. The function flow chart of graduate module is shown in "Fig. 5".
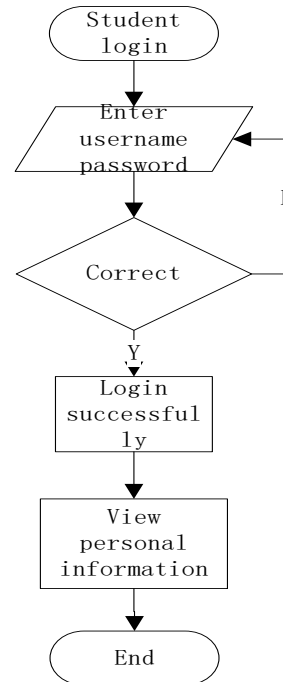

Figure 5. Functional flow chart of graduate module.

D. database design

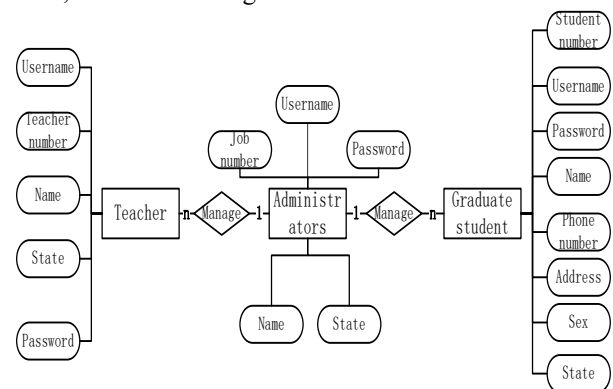This system uses MySQL database and system entity contact, as shown in "Fig. 6".

Figure 6. E-R diagram of system entity contact.

IV. System implementation

Because this system is for graduate information management, so here focuses on the implementation of the administrator module. When different roles log in, they need to fill in their own login name, login password, select the corresponding role, fill in the correct verification code, and click login to enter the system. The background login interface is shown in "Fig. 7".
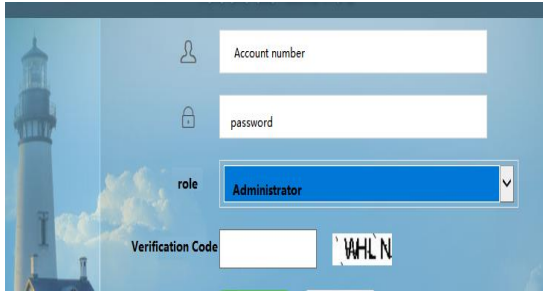
Figure 7. Background login interface

Class management mainly includes two functions: professional management and class management. Major management includes editing any major and adding students to the major. Class management is that administrators can log in to modify and delete a class information. Class management is shown in "Fig. 8".
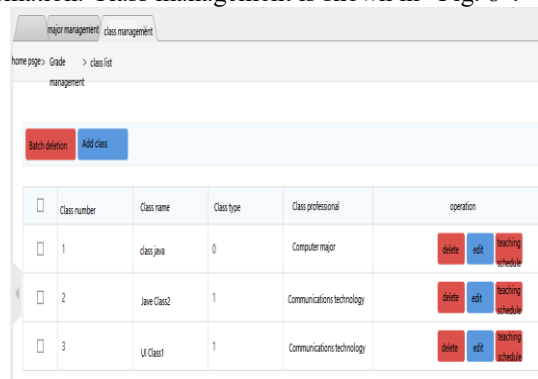

Figure 8. Class management

In this system, the administrator login can manage the graduate student information, in the graduate student information management module, you can add a student's information, edit and delete information, the system can also add a picture for students. Graduate management is shown in "Fig. 9".
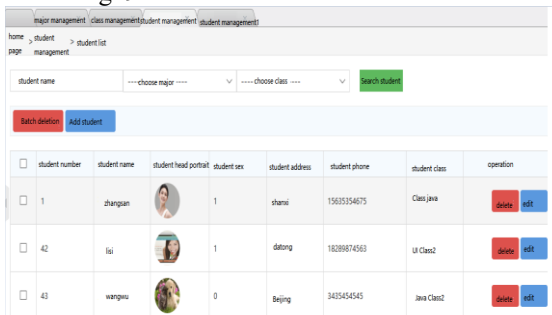

Figure 9. Graduate management

In this system, the administrator login can also manage the personal information of teachers. The teacher management is that the administrator can delete and edit the teacher information. Teacher management is shown in "Fig. 10".
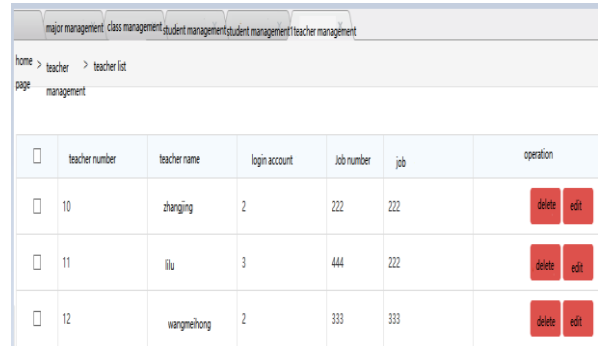

Figure 10. Teacher management

V. Summary

In order to comply with the implementation of the reform of the national education system, we should first improve the innovation of the talent education and training mode, further improve the management level of higher education, closely follow the development of the times, and build a more perfect university system,

To provide more high-quality talents for social training, especially the education management of postgraduates, is a test of school education mode and concept. Make full use of the network advantages of the Internet information age, solve the key and difficult points of student management, further improve the management efficiency and level, save resources to the greatest extent, and create a new win-win situation for all-round teaching.The development of graduate information management system should not only have a solid theoretical knowledge, but also be cautious in the design method. The original scheme is still structured and prototype development method, and now the popular method is mainly object-oriented development method. This system is based on the object-oriented programming design and development, and the SSM framework. Each functional module runs effectively, which optimizes the current situation of graduate education management to a certain extent.

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