

# Design and implementation of course selection system based on WeChat Applet

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**Abstract.** With the rapid development of mobile Internet and the widespread popularity of smart phones, WeChat has become the preferred app for Chinese netizens. In order to let students know more about their own course selection, this paper designs a student course selection management system based on WeChat applet. The system uses MyEclipse as the coding environment tool, Tomcat to provide application services, and MySQL as the background database. According to the user category, the system includes three functional modules: administrator, teacher and student. The administrator function module realizes class management, student management, teacher management, course management and course selection management. The teacher function module realizes the management of students' achievements. The student function module realizes the operation of course selection, course withdrawal, score query, personal information change, etc. The system is simple to operate, convenient to use, and effectively provides users with work efficiency.

**Keywords:** WeChat Applet; Course Selection; Teaching Management System

## 1 Introduction

In China, mobile phones are a necessity for us, and WeChat is also an indispensable tool for us. At present, everyone in college has a mobile phone, and as a software, it has quickly become a hot topic in colleges and universities due to its excellent software development and good experience. In universities, there are administrative staff in some colleges where it is impossible to carry a laptop. For example: irregular class locations, irregular exams, test scores, as well as selected courses and withdrawals. If we do not have a computer with us or we do not have an Internet connection at this time, we cannot carry out these operations, which is very inconvenient. Considering that the WeChat software should be closely related to our lives, I considered creating a mobile version of the WeChat Education Management Course Selection Score Management Program. You don't need to carry your own computer and then connect to the Internet to solve these problems, and I think it is very necessary to design a small program for course selection management that can be easily viewed on your mobile phone.

As a very important part of college students' university life, the course selection management system will often use it in college life. With the rapid development of science and technology, there should be a system that is convenient for students to quickly understand their course selection information, but the inconvenient portability of current desktop computers and laptops makes it difficult for students to quickly understand their course selection. However, this course

selection management system based on WeChat Applet can solve the disadvantage of inconvenient carrying, which is very convenient for students.

In the past two years of development, Tencent's WeChat Applet business has gradually matured, and its advantages are becoming more and more obvious, and based on WeChat Applet related applications are more and more and better, WeChat Applet has many advantages, such as it does not need to be installed, when you use it when you can open it on the mobile phone, its online PC teaching management system is also very complete, so that students around the world can access the Internet at home, complete the entire life process such as registration, course selection, exams, graduation thesis, and degree. However, in terms of mobile phones, it has not yet been fully promoted, and many school students have to log in on PCs. All of the above shows that the teaching work of colleges and universities based on WeChat should penetrate into the whole society.<sup>[1]</sup>

## **2 System Analysis**

The software environment is configured with Windows XP or Windows 7 operating systems. The hardware environment is configured with a desktop computer (PC) or a laptop.

The web server of this system adopts the MyEclipse software tool for system development. It is a feature-rich JavaEE integrated development environment, including complete coding, debugging, testing and publishing functions, full support for HTML, Struts, JSF, CSS, JavaScript, SQL, Hibernate. The Android side of the system is the use of Eclipse software tools for Android program development, in the Eclipse compiled IDE environment, install ADT, for Android development to provide development tools upgrade or change. At the same time, install the corresponding SDK for Android, in Android, he provides developers with library files and other tools used in development. The Android development version used here is Android 2.2 with API level 8.

The environment of the database developed by this system is a MySQL database. MySQL is an associative database management system and the SQL language used is the most commonly used standardized language for accessing databases. MySQL is small in size, fast in speed, low in total cost of ownership, especially open source, so this system was developed by choosing MySQL as the database of the system.<sup>[2]</sup>

## **3 System design**

### **3.1 System functional design**

The client of this system is divided into two modules, namely the administrator management module and the student management module, and the server side is divided into three, specifically the administrator management module, the student management module and the teacher management module. The functions of each module are designed and the corresponding specific functions of each module are established. The system is designed in an overview based on the design and implementation of the database and the system requirements and functional analysis. The implementation of the Android client student management module can complete

the functions of modifying students' basic information, selecting courses, querying course grades, modifying personal information, and understanding news. The implementation of the administrator management module can complete the functions of class management, student management, teacher management, course management, course selection management, grades and so on.

### 3.2 System workflow analysis

When the user with permission enters the account password to successfully log in to the system, he can access the data information about the class, teacher, course, course selection, grades, news and other data in the system, and the process data diagram of the system, as shown in Figure 1. Note: Admins can access all features, teachers and students can only access some features.<sup>[3]</sup>

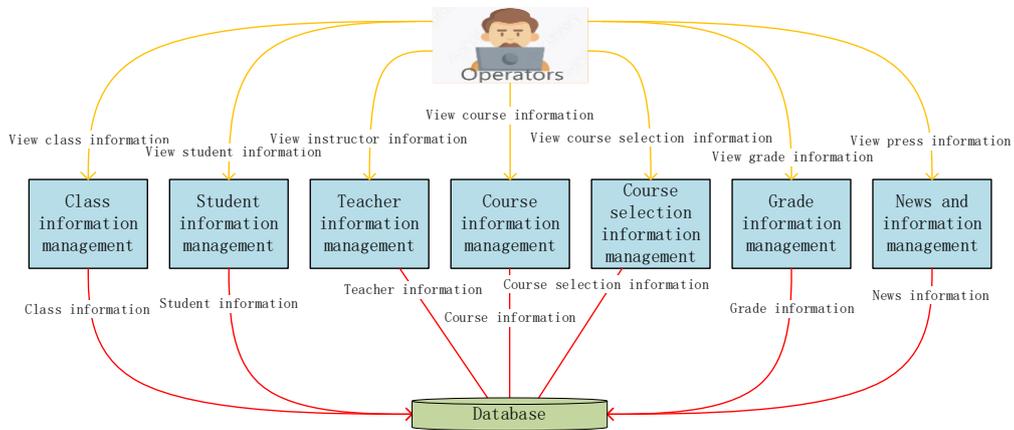


Fig. 1. System workflow diagram

### 3.3 Functional overall design

The client side of the platform is a management module, while the server side is an administrator. Complete the functions of each module. A detailed system overview is given from the aspects of database development and implementation, system requirements, and functional analysis.

The application of the system in the WeChat application software can change the basic information of students, select classes and view the learning situation of the class. Such as changing user information, etc.

The functional classification chart of WeChat Applet student terminal is shown in Fig. 2.

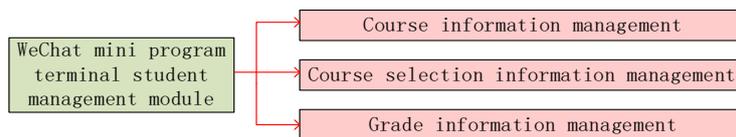
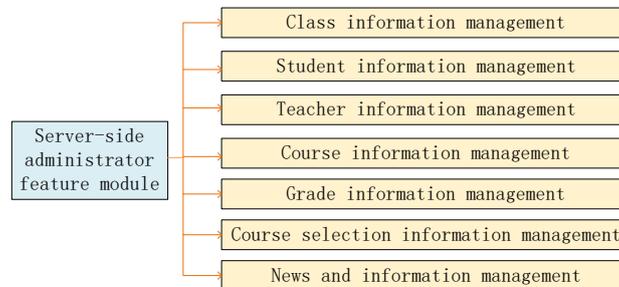


Fig. 2 WeChat Applet student function classification

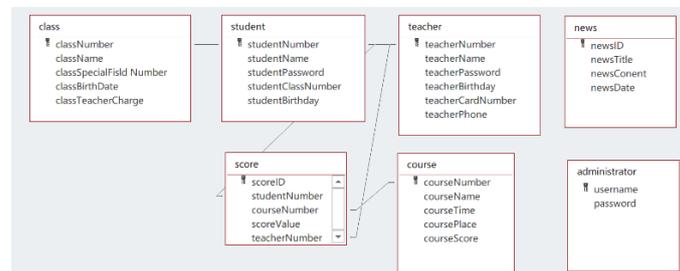
In the management interface design, the system is designed for students, teachers, courses, grades, classes, news some information management, the design type diagram is shown in Figure 3.



**Fig. 3** Administrator feature classification

### 3.4 Database design

The quality of a system design often depends on whether its database design is excellent. According to the system functions, we analyzed the data requirements of the system. The logical structure of the system database is shown in Figure 4, which is used to store the data required by the system, such as class information, student information, course information, teacher information, course selection information, etc. [4]

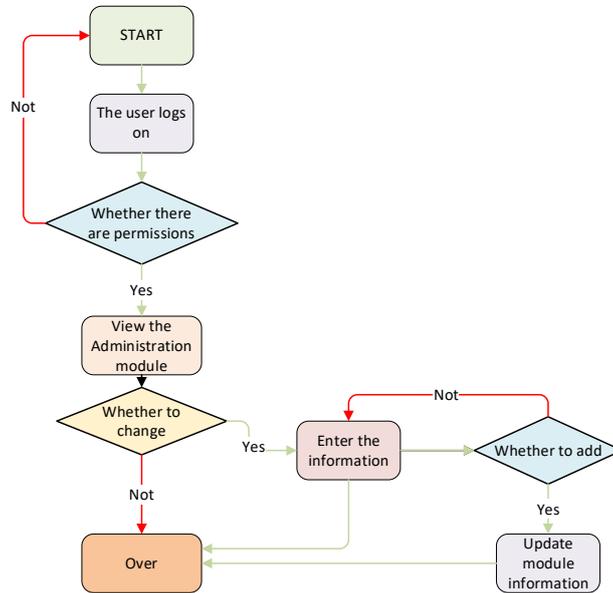


**Fig. 4** The logical structure of the database

## 4 System implementation

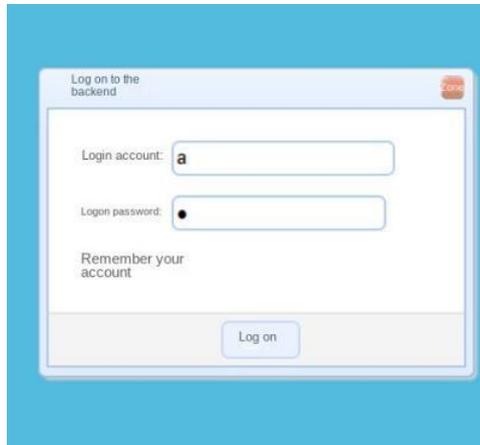
### 4.1 Administrator-side implementation

After the administrator enters the system, the flow chart of modifying and viewing the information in the system is shown in the figure.5.



**Fig. 5** Flowchart of administrator information management

After the administrator enters his account and password on the login screen of the system, if the information entered is correct, as shown in Figure 6.



**Fig. 6** The login interface for entering information

After that, the administrator interface of the system will prompt a reminder of successful login, and enter the interface of successful login, as shown in Figure 7.

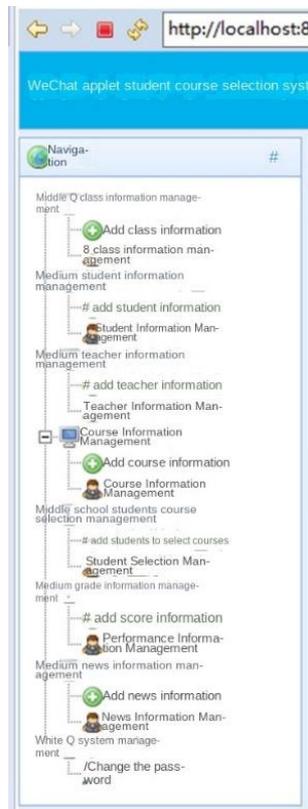


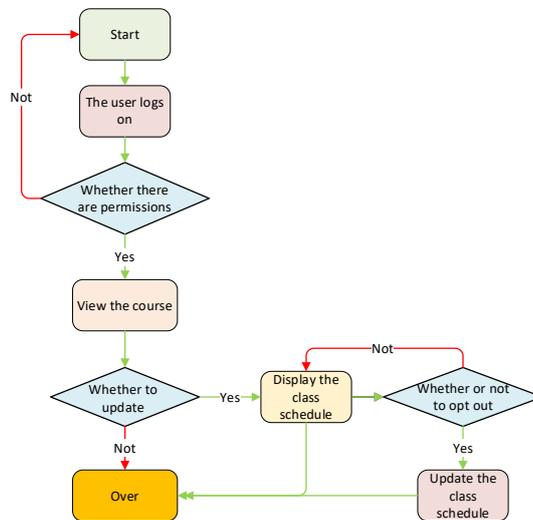
Fig. 7 Background management system interface

#### 4.2 Teacher-side implementation

When the teacher user enters the system, he can perform some related operations in its interface, including the viewing of courses, course selection, grades and other information, of course, you can also make some modifications to their personal information, and the main function is to score students' course grades. The specific implementation technology is similar to the administrator side, so I will not repeat it here.

#### 4.3 Student-side implementation

After the student side enters the program, the student modifies his own information in the program, and the flowchart of his course information viewing, as shown in the figure 8.



**Fig. 8** Student course management program flowchart

After entering the system, student users can perform some related operations in its interface, including course, course selection, grades and other information can be viewed, of course, you can also make some modifications to their personal information, the main function is still to select courses and withdraw from courses. <sup>[5]</sup>

#### 4.3.1 Course information management

"Course Information" means that students perform relevant operations in class, so that students can understand the details of the course and make choices. However, learners do not have permission to add, delete, or modify courses, and can only make inquiries based on specific needs. After student users enter the system on their mobile phones, click on the course information, they can easily view the courses they have selected and some relevant information.

#### 4.3.2 Course selection information management

The course selection management of student users refers to "My Class Schedule" on the WeChat APP, which means that on the selected course, students can see the details of the selected course and can also cancel the selected course. But students do not have the right to add, delete, modify and inquire.

By logging in to the management web page through a mobile phone, users can view and exit the basic operation of the website.

#### 4.3.3 Grade information management

Student users can display my score on the WeChat software after logging in to the system, and students can see the specific situation of the subjects they have chosen, but do not have the permission to add, delete, modify, and query. By logging in to the login management page from their mobile phone, users can see their results. <sup>[6]</sup>

#### 4.3.4 Student Interface Test

System testing mainly analyzes whether the system can work safely and effectively and run programs. The user runs the WeChat program to enter the login interface, if the login student user enters the password and user name correctly, the login will be displayed successfully, and the verification is passed, if the password and user name entered by the logged in student user is wrong or the system does not exist, the interface will display the user name or password error prompts the user to log in failed, the user clicks on the course list, you can view the currently released course information, when the student user clicks on My Course to view the information, you can see the course information they selected, Users click on the teacher's style to see the basic information of the currently released teacher, click again to see the details, users click My Course Inquiry to see their current grade information, users click on the news information query, you can see the currently released news information.

## 5 Conclusion

This management system is a course selection management system designed and implemented for the popularization of WeChat Applet smart phones, which can query the school's teaching affairs in time. This system fully considers that in the modern quality of life and the fast pace of life today, we can not have time to return to our fixed living place to view the information we want to view as before, it can help us easily realize on the mobile phone anytime and anywhere to view this kind of information, therefore, in the WeChat Applet side has also been completed accordingly, so that the WeChat Applet and the server can use the access system at the same time. This paper mainly designs the interrelationship between mobile phones and computers, and has been realized accordingly through continuous efforts.

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## References

- [1] Peng M. University Canteen Supervision and Management System Based on Wechat Applet[J]. Francis Academic Press, 2021(11).
- [2] Wang T. The Mobile Teaching Platform Based on WeChat Applet and the Moodle System --- Explore the Impact of Teaching Platforms on Learning in a Mobile Learning Environment[J]. Journal of Physics Conference Series, 2020.
- [3] Xiang K, Xu F, Hu D, et al. Design and Implementation of Primary School App Inventor Programming Mobile Learning Platform based on Wechat Applet[C]// 2020 15th International Conference on Computer Science & Education (ICCSE). 2020.
- [4] Yan, Z, Wei, G., Dongdong, L., Lei, N., & Mengran, Y. (2020, April). University research project management system based on cloud platform. In 2020 International Conference on Big Data and Informatization Education (ICBDIE) (pp. 453-456). IEEE.

- [5] Yan Z, Wanqiong C, Lijun W, et al. Graduation thesis quality management system based on cloud platform[J]. IPPTA: Quarterly Journal of Indian Pulp and Paper Technical Association, 2018, 30(1):391-397.
- [6] Ruan G, Li Z, Wang J, The design and implementation of intelligent management system of undergraduate graduation thesis. International Conference on Consumer Electronics, Communications and Networks. IEEE, 2012, pp.2139-2143.