



Back End Development of Classroom Management System Based on .Net

Ying Jin^{1(✉)} and Chunwang Zhang²

¹ Fushun No.1 High School, Fushun 113001, China
jinying2006@126.com

² University of Electronic Science and Technology of China, Zhongshan
Institute, Zhongshan 528400, China

Abstract. This system is developed to provide teachers and students with high-quality communication platform under the background of the widespread application of the Internet. It is an independent classroom management system module applied in the school's educational administration system.

Keywords: Curriculum management system · ASP.NET · Visual Studio 2015 · SQLITE · C#

1 Introduction

According to the actual needs of teachers and students, a single classroom management system module with educational administration system as the main body is established under the environment of front-end interface, and a database is created. The whole management system is designed for the purpose of safety, stability, convenience and practical and good operation. The implementation of this management system takes ASP.NET as the main body, C# language, VS2015, SQLITE as the core development tool, and DataAdapter as the means to connect to the database for development. Administrators, teachers, students as the core, for the connection of finish school with students in the system, the administrator, and teacher for students to upload information and management functions, purpose lies in the use of classroom management system to improve students' learning efficiency, strengthen the supervision of a teacher to the students, for teachers and students set up a bridge of communication before.

2 System Design

The main purpose of classroom management system is to realize the different roles, permissions and real-time management of various objects in the system. The classroom management system module is managed uniformly by the main module of the original educational administration system. After login, different operations are implemented according to different login roles. The role modules in the whole classroom management system are independent of each other, but all the data in the back end comes from the same database, and the data of each role module is interoperable, which facilitates

the maintenance and optimization of the system in the later period. The following Fig. 1 shows the functional modules of the system.

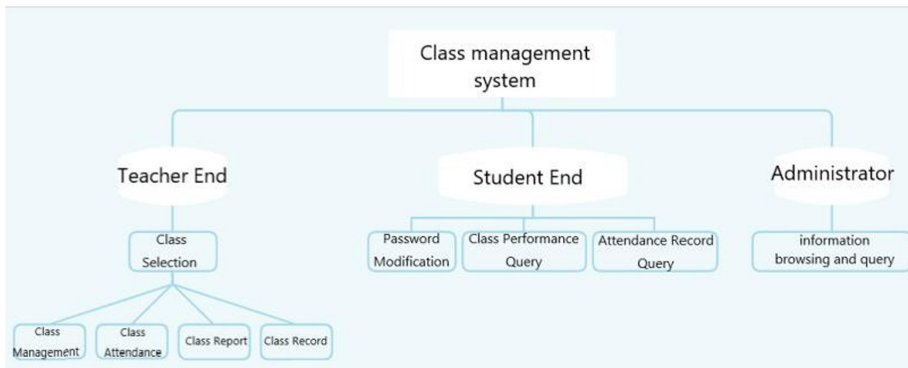


Fig. 1. The function module diagram of the system

3 Database Design of Classroom Management System

3.1 Database Design

System database design directly decides the overall efficiency of the system, in the design of database of time must be different specific naming, classification and separate the data to avoid when more data classification is not clear, repeat after, otherwise it will increase the working pressure of the developer, after completion of the system development maintenance workload also increased substantially, reduce the performance of the system and developer productivity. The design of the database should also be a comprehensive analysis of performance problems, to avoid system crash system failure and other security risks, but also conducive to saving resources and costs.

3.2 Database Logic Design ER Diagram

The logic of database is usually represented by ER design drawing, which is mainly composed of entity, attribute and relationship. Entities are objects, such as teachers, students, etc. Attributes are attributes that are owned by individual entities, such as student names, scores, and so on. Relationships are the connections between entities. Fig. 2 shows the ER design drawing for the database.

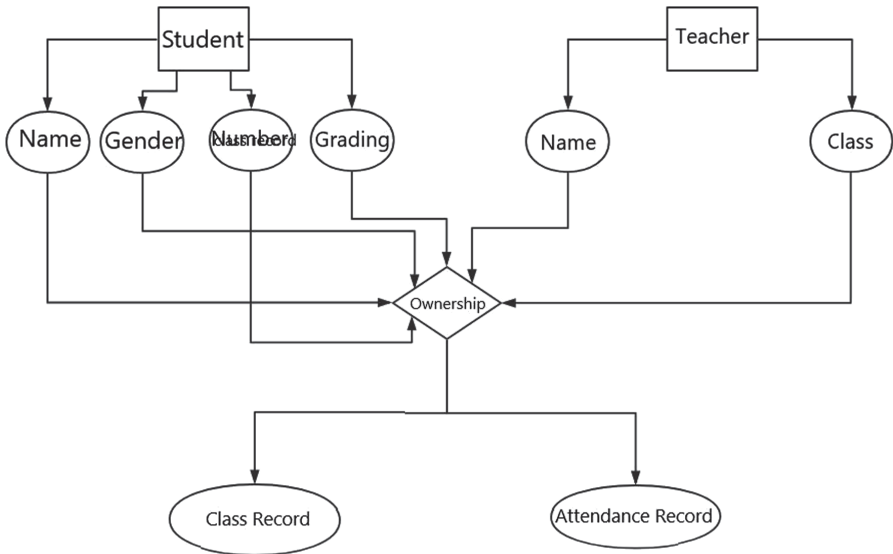


Fig. 2. ER blueprints for the database

4 System Debugging

4.1 Hardware Debug

- 1) Open Visual Studio 2015, load the system engineering file, generate WebApplication2, use Google Chrome browser by default to display and test the front page, enter the classroom management system, click on all returnable items, and dynamically operate the front page.
- 2) Click on the front page of the front-end classroom management system to enter any class, and select Class 2, Grade 3 for the test. After entering the classroom management interface of the class management interface, a student was randomly selected. During the test, student No. 23 was selected and graded. During the test, select “easy to pass”, “emotional stability” and “Quiet after class” from the “praise” list, and record the time as: 2020/4/27 7:47 PM, as shown in Fig. 3 below. In the list of “to be improved”, select “Distracted in class”, “disruptive in class”, and record the time as: 2020/4/27 7:49 PM, as shown in Fig. 4 below. Enter the classroom attendance system, select a student at random, select No. 16 Zhang Xiaolong for the test, select “late” in the “attendance” list, and record the time: 2020/4/27 7:50 PM, as shown in Fig. 5 below. Check the “Praise” screen of the scoring chart, as shown in Fig. 6 below. The “To be improved” interface of the scoring record table is shown in Fig. 7 and the attendance record table is shown in Fig. 8. Check to see if the previous action is displayed in the various tables as required.
- 3) Click the button in the upper right corner to select randomly, select 3 people, and click “Start to select” to see the selection results as shown in Fig. 9 below. Click “Reselect number” to select number 5, and click “Start to select”, as shown in

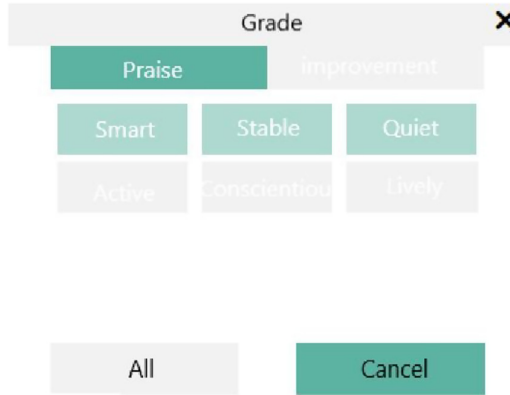


Fig. 3. Praise the interface

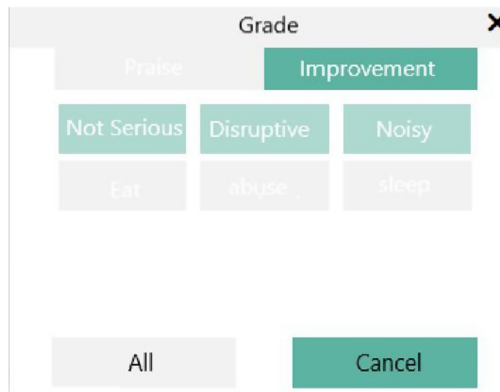


Fig. 4. Interface to be improved

Fig. 10 below. Close the random selection window, click the timer button, click “Start” on the “Timing” page, observe the timing situation, click pause, continue and start again during the start process, and record the test situation. Repeat this three times. Click the countdown function, set the countdown time to 3 min, and click Start. Click pause, continue, restart during the test, and record the test results.

- 4) Run the back-end database as an administrator, click “Browse data”, open the “CLASSTU” table, change the name of student No. 136 to Lili, and delete the information of student No. 138, as shown in Fig. 11. Add a new student: Li Si, parameters are set as gender: female, no.: 150, class No.: 10 (Class 10, three years), as shown in Fig. 12. Save the database. Refresh the front end Web page to see if the information just recorded was uploaded to the front end. Fig. 13 shows the front-end results after modifying the name of student No. 136, deleting the information of student No. 8, and adding the information of student No. 150 “Li Si”.

5 Conclusions

In the preliminary test, the dynamic jump of the front page could not be completed. After checking, it was found that the name of the back-end interface was entered incorrectly. Now it has been modified and the normal dynamic jump can be completed, achieving the expected effect. Simulate students' classroom management, attendance rating and other operations of the system through real data, and complete the expected requirements of the system.

References

1. Gan, K.: Exploration of building campus computer network. *J. Chengdu Norm. Coll.* (03), 11–15 (1996)
2. Gao, H., Liu, C., Jia, J.: Problems and countermeasures in campus LAN construction. *Teach. Manag.* (18), 38–41 (2001)
3. Liu, M.: Design and implementation of data integrity in SQL server database application system. *Aeronaut. Comput. Technol.* (02), 67–68 (2002)
4. Hu, B.: Brief analysis on the construction and maintenance of library database. *Digit. Technol. Appl.* (01), 97 (2013)
5. Du, Y.: Design and implementation of ASP.NET based attendance management system. *Inf. Comput.* (03), 94–95+98 (2018)
6. Luo, Y.: Design and prospect of college personnel information management system based on ASP.NET 3.5. *China New Commun.* **20**(12), 68–69 (2012)
7. Han, B.: *SQLite Database Research and Application*. Nanjing University of Posts and Telecommunications (2019)
8. Pan, T., Zhou, F.: Research on teaching reform in Asp.net website design. *Comput. Telecommun.* (09), 18–20 (2017)
9. Zhao, F., Ni, J.: Research and development of intelligent quilting control software system based on Visual C#.NET. *Mod. Text. Technol.* **26**(02), 85–89 (2008)
10. Luo, F.: Design and implementation of university smart classroom management system based on .net technology. *J. Chang. Univ.* **28**(08), 15–20+24 (2015)
11. Wang, Z.: *Design and Implementation of university Student Status Management System based on .NET*. Jilin University (2018)
12. Zhao, W.: Design and implementation of performance salary management system based on ASP.net. *Comput. Telecommun.* (08), 58–60 (2017)
13. Gu, Y.: Design and implementation of BUS information management system based on ASP.NET. *Fujian Comput.* **34**(12), 120+152 (2008)
14. Yang, Y., Yang, Y., Zhang, T., Li, S.: Common security problems and solutions developed by .NET. *Comput. Telecommun.* (08), 62–65 2018
15. Wu, G.: Design and implementation of online examination system based on .net. *Educ. Teach. Forum* (22), 94–95 (2018)
16. Qin, X., Zhu, S.: NET framework data access structure. *Comput. Syst. Appl.* (09), 32–34 (2002)
17. Wan, L., Li, X., Du, K.: Research on the current situation of database use and management in Chinese university libraries. In: *Library Work and Research*, no. 01, pp. 76–78 (2013)
18. Liu, Z.: Cloud computing and cloud data management technology. *Comput. Res. Dev.* **S1**, 76–79 (2012)

19. Li, P., Liu, B.: WEB database interface technology and application. *Comput. Syst. Appl.* (05), 43–45 (2001)
20. Wang, Y.: Key technologies of distributed storage in cloud computing environment. *J. Softw.* **04**, 70–71 (2012)