

Retraction

Retracted: Design and Management of Comprehensive Art Student Information Database from the Perspective of Internet plus Education

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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.

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- [1] W. Liu and S. Wei, "Design and Management of Comprehensive Art Student Information Database from the Perspective of Internet plus Education," *Security and Communication Networks*, vol. 2022, Article ID 6494404, 9 pages, 2022.

Research Article

Design and Management of Comprehensive Art Student Information Database from the Perspective of Internet plus Education

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With the rapid development of information technology and network technology, all kinds of data increase exponentially, and the traditional relational databases cannot handle these data well, which is also reflected in the sharp increase in the number of college students. The amount of students' information is increasing exponentially and the simple management method in the past can no longer meet the needs of the new situation. This paper adopts B/S mode and three-tier architecture and relies on network technology and ASP.NET technology to design and implement the student information management system. The system is divided into eight functional modules: comprehensive information inquiry for students, scholarship evaluation, evaluation and award, economic recognition, student loan management, student violation, communication and feedback, and system management. Different operation interfaces are designed according to four users with different permissions: students, class tutors, college administrators, and student affairs offices. This paper describes the system analysis, design, and implementation in detail. The practice results show that the initial use of the student information database management reflects well and achieves the expected goal. The system is easy to maintain and extensible and has good application value. The operation of the system has greatly improved the management efficiency of student affairs and enabled the student affairs administrators to complete various student affairs more efficiently. Campus information construction is becoming an important part of the overall construction of colleges and universities, and it is also a basic and continuous work. Accelerating the establishment of a set of comprehensive, perfect, and efficient student comprehensive management information systems is an urgent need to promote the modernization of college student management. The modernization, informatization, and standardization of college student management are a complex systematic project. Only by relying on modern information technology can we cope with the base pressure brought by the continuous enrollment expansion of college students, promote the flat and intensive utilization of college management information, and improve the efficiency and quality of service.

1. Introduction

As the core feature of the current informatization development, the Internet is being completely integrated with various industries to activate the inherent development potential of various industries. In the integration with education, this is not a simple superposition. The power of one plus one will be far greater than two. The new form of the Internet is being developed under innovation 2.0, and

innovation will make this superposition play a more obvious role. When traditional education encounters Innovation 2.0, education will be forced to change. The change is first reflected in the educational concept. The educational concept should pay more attention to people-oriented, based on the application of knowledge, and make the whole educational process natural and comfortable. The Internet and various industries have achieved integrated development, so a large amount of data has been generated. Therefore, the design

and management of the database can improve the efficiency of the work. In recent years, network security cases have occurred frequently, further improving database security management. Taking the campus network security incident as an example, the economic loss exceeded 700000 yuan because the campus database security prevention work was not in place. It can be seen that carrying out database security protection work can effectively ensure the property safety of the public and make social production and life go smoothly [1].

In order to solve the problem of the increase in data volume and the insufficiency of relational databases in dealing with complex structures, this paper introduces a NoSQL database and adopts the technical route of C/S or B/S according to the actual situation for development. C/S is mainly used for students' terminals and management personnel mainly use mobile phones as carriers, conduct corresponding communication, and interaction through Internet technology, and use mobile terminal browsers to operate. The B/S architecture is applied to all participants of the platform, mainly for PC terminals, using the SSH framework for operation. For development, the server uses the Centos7 system, the platform construction uses Nginx + Tomcat for dynamic and static separation, the database uses the MariaDB database, the front-end development uses the Bootstrap framework for rapid development and provides a web page compatibility mode to adapt to different types of browsers. The design and establishment steps of the student information database, the logical structure of the database and its constituent elements, the development strategy of the management and analysis system, the system function, and its realization principle are introduced [2]. The development and application of the system realizes the integrated spatial management and in-depth analysis and utilization of multisource student information such as student sources, attendance, grades, awards, honors, postgraduate entrance exams, and employment at the basic teaching organization side, providing scientific planning, implementation, management, and evaluation. The grass-roots teaching work provides accurate and detailed information reference and visual and intuitive tool support, which effectively promotes the comprehensive, coordinated, and sustainable development of all work.

As a grass-roots organization for teaching management and implementation, both departments and teaching and research offices are responsible for the formulation of student training programs, the construction of curriculum systems, the revision of syllabus, the optimization of teaching content, the reform of teaching methods, the teaching of theoretical knowledge, the guidance of experiment and practice, the evaluation of teaching quality, the construction of a good style of study, the organization of scientific and technological activities, the evaluation of professional construction, and other work directly facing or serving students. The success of these works depends on the understanding and understanding of students [3]. Only by comprehensively collecting and making full use of a variety of student information, such as hobbies, advantages and specialties, academic performance, awards and honors,

employment and further study, can we ensure the overall planning, scientific coordination, and healthy and sustainable development of all work, so as to truly achieve student-centered, respect for personality, teach students in accordance with their aptitude, and promote excellence. The innovation of the research method used in this system lies in the following points:

First, through the specification and standardization of the responsibilities of administrators, student managers, and students, these students also take responsibility and supervision to a limited extent, so as to ensure the accuracy and effectiveness of data collections.

Second, the administrator teacher can formulate policies suitable for the situation of the class by extracting the overall data of the class. At the same time, according to the data statistics of the relevant performance of a certain classmate in a certain time period, more targeted measures can be adopted for the students' communication and guidance.

Third, students can use the system to check their performance in the specified time period, so as to make accurate judgments for themselves and at the same time, based on their actual situation, formulate a targeted personal improvement plan, and achieve correction with the assistance of the system. The purpose of improving their own quality is to reduce the pressure of students' self-management from another aspect, improve their autonomy, and improve the management effect [4].

This paper is divided into six chapters based on the organizational structure.

The first chapter is the introduction, which analyzes the application status of student information database design and management under the background of Internet + education, summarizes the causes of problems, and compares new technologies, aiming at improving the management efficiency of university work. The second chapter is a summary of relevant literature, summarizing its advantages and disadvantages and putting forward the research ideas of this paper. The third chapter details the specific composition of the Internet + education model. The fourth chapter introduces the analysis and design of a student information management database from the point of logical design and completion design of the database. The fifth chapter expounds on the analysis and application of database courses on Internet Plus. The sixth chapter is the conclusion, which summarizes the research results.

2. Related Work

Wan et al. believe that databases have gradually entered people's sight, and their security has become more and more important to society with the in-depth development of the Internet and various industries [5]. Therefore, Zhang and Qin analyzes from the perspective of database security in order to provide a theoretical basis for related protection work. Among them, confidentiality is one of the main characteristics of computer databases [6]. Zhang and Yang analyzed that all data in the database is kept secret from the user when no security authorization is obtained [7]. On the basis of confidentiality, integrity is also the main feature of

the database. Integrity mainly refers to the complete protection of data resources of the database. Noraziah A pointed out that with the rapid development of informatization and networking, the system model of affairs management of a single functional department cannot fully meet the actual requirements of the current development of colleges and universities [8]. He-Ping relies on network technology and ASP.NET technology, applies B/S mode, and uses ADO.NET database access technology to realize the real meaning of student information database management [9]. Student management is an important part of the work of colleges and universities, and the establishment of a comprehensive, complete and efficient student-integrated management information system is gradually being included in the agendas of colleges and universities. The development of higher education needs the support of timely, accurate and well-functioning information systems. Sun X has long put forward the construction goals of campus modernization, informatization, and internationalization. According to this goal, it has refined several specific goals, including: realizing the digitization, informatization, and network of teaching, research and services on the campus of the University of Finance and Economics Realize the rational planning, distribution, and effective utilization of information resources and information services [10]. In view of this, Peng and Xu also designed and developed a comprehensive educational administration system with relatively complete functions under the premise of basically satisfying the school's implementation of the credit system for educational administration management. Its functions mainly include teaching, student status, course selection, institutional documents, and study guidance, etc. [11]. The system designed by Chaudhry et al., etc., its student status management function can realize the query and analysis of schools (training units), professional information, and student information. An authoritative student status information query system [12]. Zhou and others implement credit system management, focusing on the educational thought and concept of "student development-oriented" in the process of student education and teaching. This system provides comprehensive technical support for school teaching management [13]. The online information query system of the Ministry of Education and Industry, which Zhou assisted in designing, includes functions such as the functions and responsibilities of the Ministry of Education and Industry, internal institutions, system management, communication, and inquiry of related information. This system has reached the advanced level of similar educational affairs software [14].

3. Internet + Education

"Internet + education" is a hot topic and hot word in the current education reform and practice. In the field of educational informatization technology, almost all plans and speeches must be discussed, and special attention is paid to them. "Internet + education" is not the network of existing education; it is a new stage of the development of education informatization technology, and it is the basis for technology

to promote revolutionary changes in education [15]. Although "Internet + education" is just beginning to emerge, it is unstoppable. The development of the teaching mode under the background of "Internet + education" in the 5G era is divided into the following aspects, as shown in Figure 1:

- (1) *Integrating Teaching Resources.* Colleges and universities should organize teachers to effectively integrate traditional and online learning resources; rebuild the database of teaching resources; collect information resources related to professional teaching extensively; provide rich materials for teachers' teaching design; and provide sufficient learning resources for students' autonomous learning and inquiry.
- (2) *Construct Diversified Teaching Mode.* Vigorously develop online and offline mixed teaching and learning modes, and organically combine face-to-face classroom learning with online learning, which not only retains the advantages of classroom teachers in guiding students' learning direction and imparting students' professional knowledge, but also retains the advantages of online learning in stimulating students' autonomy and creativity, and gives full play to teachers' leading role in teaching activities and teaching management [16].
- (3) *Improve the Learning Evaluation Mechanism.* In the new teaching mode, the school should pay attention to learning evaluation so as to restrain students' learning behavior and ensure their participation in classroom and online teaching. At the same time, the evaluation results should be taken as the basis for improving teaching quality, and the construction of the educational resource banks should be improved, educational equipment should be updated, teaching methods should be improved, and teaching content should be innovated.

4. Analysis and Design of Student Information Management Database

4.1. Logical Design of the Database. Since the data analysis of the system has been completed, the most important work in the demand analysis stage is to convert the results of the previous stage into a specific database. According to the various relations obtained earlier, they are now converted into data tables. The system mainly includes student information tables, class information tables, grade information tables, course information tables, and professional information tables [17]. Database design mainly includes the logical design and physical design of the database. Usually, the logical design is carried out first, and then the physical design is carried out. The database of the student information management system in this study is designed with the Oracle database, and a total of 7 data tables are created, and their structures are shown in Table 1:

After the establishment of the student information database, the data can be browsed, queried, edited, counted,



FIGURE 1: Analysis of Internet + education model.

TABLE 1: Structure of student information sheet.

| Field name | Type of data | Field length and format | Keywords |
|------------------|--------------|-------------------------|----------|
| Student ID | VARCHAR | 15 | YES |
| Name | VARCHAR | 20 | NO |
| Gender | CHAR | 2 | NO |
| Political status | VARCHAR | 12 | NO |
| Date of birth | DATE | YYYY-MM-DD | NO |
| Specialized | VARCHAR | 20 | NO |
| Class | VARCHAR | 20 | NO |
| Contact number | VARCHAR | 15 | NO |

analyzed, mapped and other operations through the ArcGIS desktop system. As tool GIS platform software, the ArcGIS desktop system is designed for a variety of users, with basic, universal, professional, and other characteristics. Although the desktop system has rich and powerful functions, it is still difficult to meet the specific application needs in terms of flexibility, convenience, practicality, and so on. Therefore, it is necessary to extend and customize the design and develop an applied GIS system for student information management and analysis business [18].

Arcengine supports a variety of development languages such as .Net, Java, VB, VC, Delphi, c++. Different languages have their own advantages and disadvantages, and there is no strict distinction between good and bad. Considering the proficiency, execution efficiency, ease of use, mainstream trends, and other aspects, this paper selects c# in visual-.net2010 as the integrated development language [19]. In addition, in order to obtain a more beautiful and friendly interface effect, in addition to the common windows interface controls, the system development also uses the RibbonBar, Panelex, SuperGrid, and other controls in the dot net bar for windows forms control set product of the devcomponents company [20]. The system development strategy and basic architecture are shown in Figure 2:

The database is the core and foundation of the information system, and the design and establishment of the database is an important part of the development of the information system. The database of the student information management system can be established by using Geodatabase technology. The Geodatabase is a new generation of data model and software system that uses a standard relational databases and object-oriented technology to represent, store, and manage geospatial information. The

integrated management of spatial data, as shown in Figure 3, describes the specific connection between these elements, and implicit indirect connections are established between feature classes through spatial relationships.

Aiming at the basic functions of the above databases, the data tables are described one by one, and the detailed content of each data table is planned through the tables. The management personnel information is shown in Table 2, mainly, for the storage of management personnel information.

4.2. Integrity Design. After analyzing the types of connections among data entities, it is also necessary to analyze the integrity constraints among entities. There are three kinds of table integrity constraints: the first is an entity integrity rule; the second is a referential integrity rule; and the third is a user-defined integrity rule. In this system, there are three kinds of integrality between entities, so as to ensure the integrality of each table. A primary key can be established on the user name in the login table, which ensures that there are no duplicate tuples in the table, thus, realizing the entity integrity. The primary key is established on the student ID in the student table to ensure that no duplicate tuples appear in the table, so that the entity integrity can be realized. Second, although the department number in the student table is not the primary key of this table, it is the primary key of the department table, so the department number can be used as the foreign key of the student table. Therefore, the department number in the student table cannot be taken casually, but can only be taken by reference to the value of the department number in the system table, thus, realizing referential integrity through the foreign key of the department number. Also, the gender field in the student table can only be “male” or “female.” This type of constraint is the so called domain integrity rule, and the domain integrity constraint is a kind of user-defined integrity. The primary key is established on the work number in the teacher’s table, which ensures that there are no duplicate tuples in the table. In this way, entity integrity can be realized through the work number.

4.3. Key Algorithm Design of Distributed Database. Different from centralized database management systems, distributed databases involve issues such as data distribution and joint query of multiple data sets. In order to improve the performance of the student file management information system in data processing, it is necessary to improve the existing related data algorithms. Data distribution is a critical step in distributed databases. The mathematical description of data distribution can be defined as follows: let the data site included in the system be S , then,

$$S = (S_1, S_2, S_3, \dots, S_m). \quad (1)$$

The sites are connected to each other through the network. The set of program transactions running on this network is set to T , then,

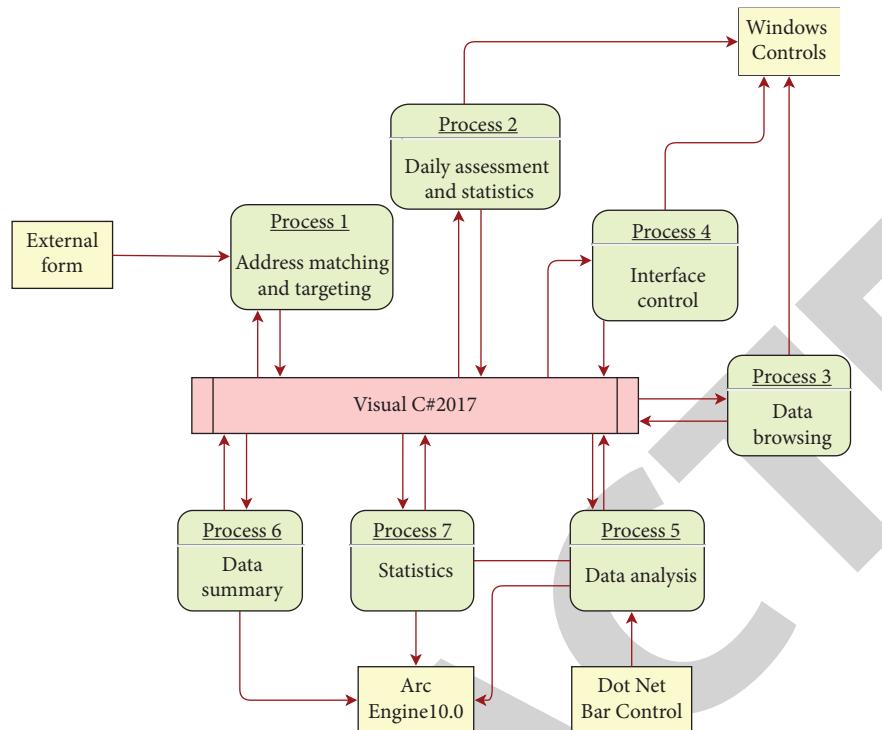


FIGURE 2: System development strategy and basic architecture.

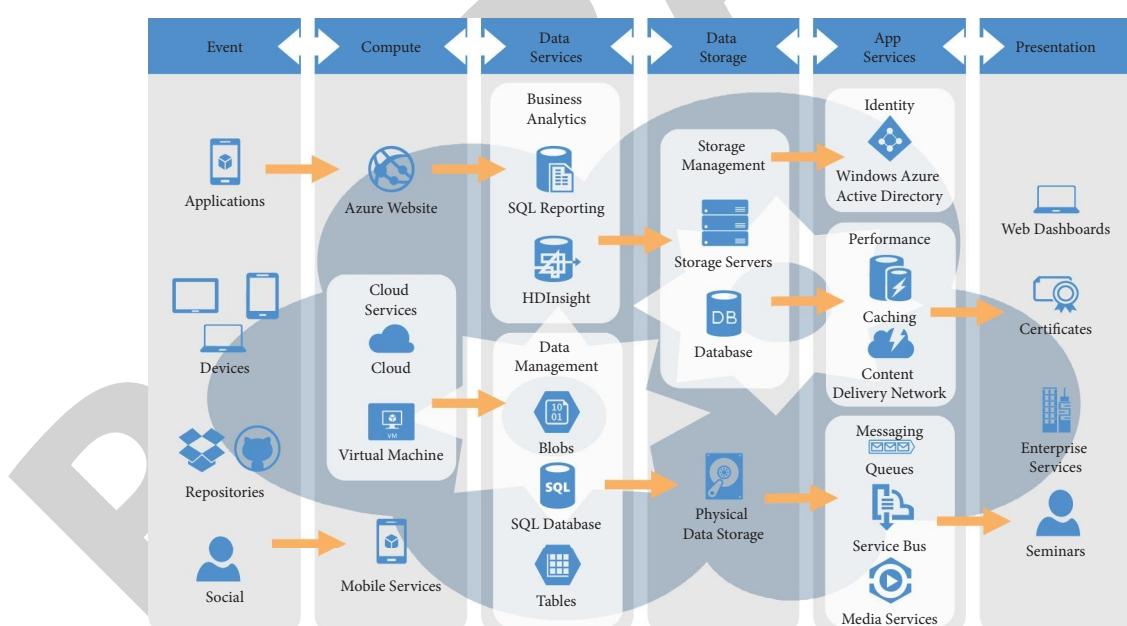


FIGURE 3: Elements and relationships of databases based on Internet+.

TABLE 2: Management information sheet.

| Field name | Illustrate | Data type/length | Nonempty | Defaults |
|------------|-------------------|------------------|----------|----------|
| User name | Manager | VARCHAR (11) | YES | 0 |
| Password | Password | VARCHAR (4) | YES | 0 |
| Question | Security question | VARCHAR (10) | YES | 1 |

$$T = (T_1, T_2, \dots, T_n). \quad (2)$$

As the basis for the operation of the program transaction, let the data set on the network be D , then,

$$D = (D_1, D_2, \dots, D_p). \quad (3)$$

Then, the problem that the data allocation algorithm needs to deal with is: design an algorithm to reasonably configure the replicas of D_i in different sites S , so that the total performance of the entire system can be maximized, and the total cost can be minimized. The plan is denoted as $C(D_i, S_j, T_k)$.

For the research on optimal data allocation algorithms, the current algorithms mainly include grouping local optimization algorithms aiming at the minimum cost of data fragmentation storage, clustering optimization algorithms implemented by calculating the minimum average value and attribute correlation-based algorithms. Vertical sharding and clustering, is an algorithm that combines clustering and allocation.

Allocating data units to different clusters have better performance than direct allocation to sites, which can effectively improve communication efficiency between sites and reduce communication costs. After completing the clustering operation of the site, it is also necessary to define and clarify the communication costs between different clusters and the communication cost within each cluster.

- (1) If a single cluster C_i includes multiple sites S , the average communication cost within it can be defined as follows:

$$AvgC_i = \frac{\sum_{j=1}^n CC(S_i, S_j)}{n * (n - 1)}. \quad (4)$$

- (2) The communication cost between different clusters can be defined as follows:

$$AvgCC(C_i, C_j) = \frac{\sum_{i=1}^m CC(S_i, S_j)}{m * n}. \quad (5)$$

- (3) The total communication cost of all clusters in the system can be defined as follows:

$$All\ ACC = \frac{\sum_{i=1}^n \sum_{j=1}^m ACC(C_i, C_j)}{n * m}. \quad (6)$$

The abovementioned definition and analysis of the communication cost within the cluster and the communication cost between the clusters is the basis for the next step to optimize the distribution of data based on the genetic algorithm.

4.4. Improvement of Distributed Database Query Algorithm. To improve and optimize the distributed query algorithm, we must first determine the cost and cost calculation model of the query algorithm. Based on the research of the query process, this paper constructs a new cost model, which takes into account the factors of data copy selection, site selection,

connection sequence, data transmission, and so on, and gives a mathematical model of query cost. The query cost model mainly considers the network transmission process and the total query time, and the total query cost is the sum of the query costs of all involved nodes. Consider it step by step. First, the transmission cost of data between networks can be expressed as $com(i, j, m)$, which means that there are m bytes of data in stations i and j . Second, the internal processing cost of the site, mainly the operation time cost of the local relational database tables.

The determination of the most important fitness functions in a genetic algorithm, which is the basis for screening chromosomes. At present, for the distributed database query algorithm it is to find a selection scheme of sites, data copy, connection relationship, and transmission relationship, and generate a query tree to minimize the sum of costs in all aspects. The fitness function is constructed according to the cost model of distributed database queries established above. It should be noted here that genetic algorithm is implemented according to the principle of maximum fitness, the higher the probability of selection, and the cost function in the process of distributed database query should be the smaller the value, the better, so it also needs to be processed by taking the reciprocal. Therefore, the fitness function of the chromosome is

$$\text{fitness}(\text{gen}_i(\text{tree})) = \frac{1}{\cos t(\text{gen}_i(\text{tree}))}. \quad (7)$$

The training dataset is divided into several subdatasets according to the value of attribute A . The “SplitInformation” of attribute A is:

$$\text{Split Info}_A(S) = - \sum_{j=1}^m \left| \frac{|S_j|}{|S|} \log_2 \left| \frac{|S_j|}{|S|} \right| \right|. \quad (8)$$

In the formula: S is the training data set; m is the number of subdata sets; $|S_j|$ is the number of samples in the j -th subdata set; $|S|$ is the total number of samples in the data set before division.

After the attribute a splitting step, the information gain of the sample set can be expressed as follows:

$$\text{Info Gain}(S, A) = E(S) - E_A(S). \quad (9)$$

In the formula: $E(S)$ is the information entropy; $E_A(S)$ is the information entropy with attribute A as the root classification.

After the attribute A splitting step, the information gain rate of the sample set can be expressed as follows:

$$\text{Info Gain Ration}(S, A) = \frac{\text{Info Gain}(S, A)}{\text{SplitInfo}_A(S)}. \quad (10)$$

5. The Application of Database Course Analysis of Internet +

Taking the physical education course scores of students in 20 classes in the art department of a university as an example, to conduct data mining analysis, and apply the C4.5 algorithm

in the physical education course analysis system, the training set data of 735 students in 20 classes is shown in Figure 4 shown:

Through the training set data shown in Figure 4, the C4.5 algorithm is used to generate a decision tree. Part of the code implemented by the program is as follows:

```
print('Start training...')

tree = train    (train_features,    train_labels,    list
                (range(feature_len)))

time_3 = time.time()
print('training cost %f seconds' %(time_3 - time_2))
print('Start predicting...')
test_predict = predict(test_features, tree)
time_4 = time.time()
print('predicting cost %f seconds' %(time_4 - time_3))
```

The student quality management module is mainly composed of three submodules: student daily assessment management, student self-improvement management, and student feedback management. The operations of all modules are completed by the students themselves. For daily assessment information, students can perform advanced query operations and display corresponding content, add and update the promotion status for self-improvement information, and add and view feedback information. The effect of students performing advanced query operations is shown in Figure 5:

After the above clustering algorithm is used to calculate, the academic performance and learning information of each student can be obtained, and a data set cluster with a certain similarities can be formed according to the association rules. Students' different learning information is stored in the curriculum reform information table of the personalized network teaching system. Whether individual students or students in similar clusters with the same learning information will have an impact on the data in the curriculum reform information table when they are learning other subjects, selecting courses, and other activities, forming a dynamic information update mechanism. Each individual in the curriculum information reform table will be assigned a separate information code, and this information code (ID) will be used to form a complete record of learning information. The similarity cluster is a set of learning information with similarity formed by more than 7 IDs, as shown in Figure 6. If there are new learners, the information cluster closest to the new individual can be found in some similar student clusters through their basic information, learning information, course selection, course information, etc. Then the learning system and students complete the interaction in the process of interaction, and the system extracts the data in the curriculum reform information table and sends it to new students to form recommendations.

According to the above information collection mode, the information data accumulated over the past five years is collected and processed by the business platform operated by the data center of a certain school, and various results of the

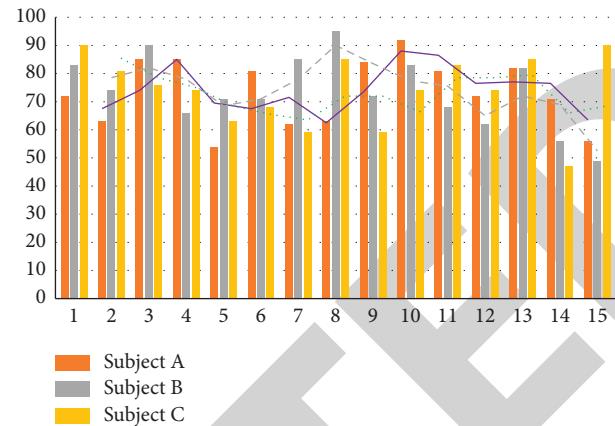


FIGURE 4: Training set data.

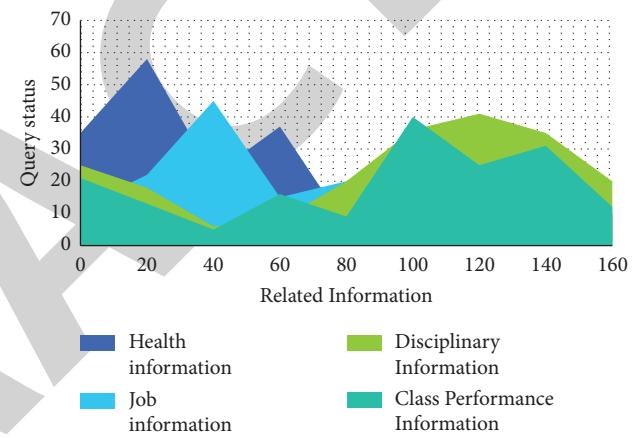


FIGURE 5: Rendering of advanced query operations.

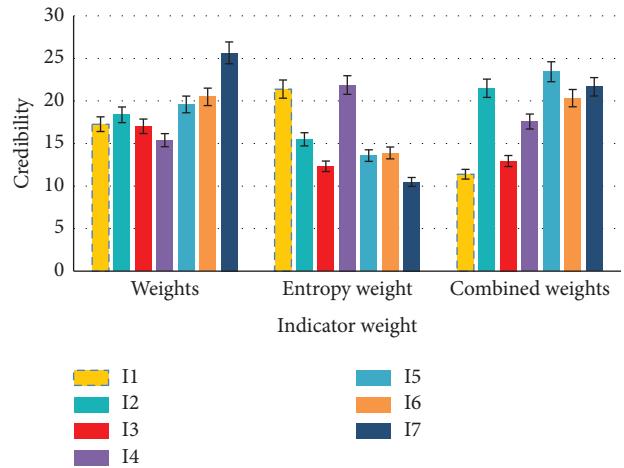


FIGURE 6: Weights of college teaching scoring indicators.

teaching evaluation project are obtained through compound algorithms (see Figure 7).

The student academic quality analysis system makes full use of web technology to visually process the data so that different roles can dynamically, intuitively, and accurately

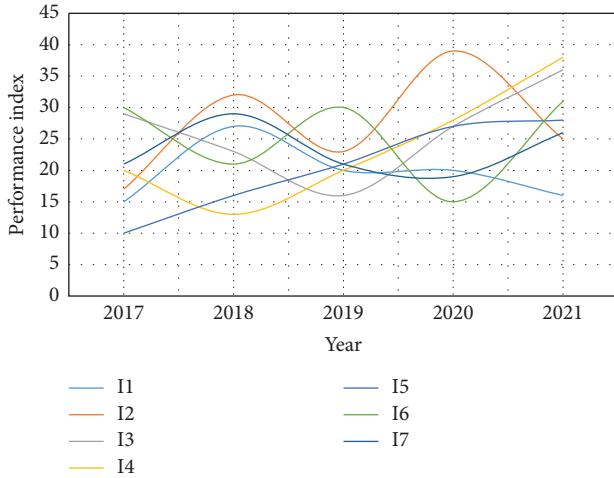


FIGURE 7: Information data analysis.

understand and master the academic status of students, classes, schools, and regions. Gradually change the diagnosis and evaluation of the existing teaching process from fuzzy, qualitative and empirical to accurate, quantitative, and empirical, make a scientific basis for improving and improving the current classroom teaching, promote and improve the teaching work of the school, and promote the improvement of regional teaching quality and efficiency. The functional use case diagram of the data analyses system is shown in Figure 8.

In addition, the database design should also be closely integrated with the application system design and be carried out synchronously. The two refer to and complement each other. The specific steps are as follows:

- (1) *Establish a User Data View.* Within a certain domain, determine and describe the user's business functions; clarify the data types and flow processing procedures required to perform the functions; determine the data usage requirements; and various constraints, and logically group the data.
- (2) *Define Objects and Connections.* To further classify, aggregate, and summarize the business, function and data that users are concerned about, form a series of identifiable objects (or entities) and their characteristics, determine and describe the relationship between objects, and use graphics (such as ER, UML diagrams) to further classify, aggregate, and summarize. etc.,) are visually expressed.
- (3) *Select the Geographic Expression.* For objects that have geometric characteristics or need to be visualized in the form of a map, further choose to determine their spatial representation types, such as points, lines, polygons, surfaces, and grids, etc.
- (4) *Convert to Geodatabase.* According to certain rules, the entities, relationships, and characteristics determined in the above steps are transformed into corresponding Geodatabase expression elements, such as tables, feature classes, relationship classes, and fields, attribute fields, subtypes and feature

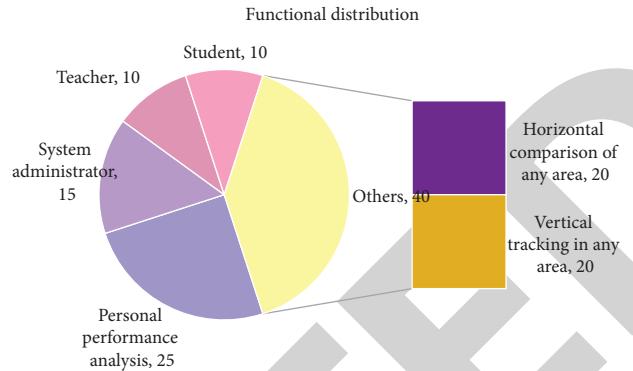


FIGURE 8: Functional use case diagram of the data analysis system.

datasets. Among them, the table is mainly used to store the attribute information of nonspatial objects; the feature class is a special table with a "shape" field, which is used to store the geometry and attribute information of spatial objects (features); the relation class is used to establish the relationship between tables to realize the association query and use of object information.

- (5) *Geodatabase Structure Adjustment and Optimization.* On the basis of considering the actual use in the future, according to the relational database standardization theory, the database structure is adjusted and optimized through decomposition, consolidation, combination, reconstruction, and other operations so as to reduce data redundancy, avoid abnormal operations, achieve the balance between storage space and access efficiency, and the overall structure is clear.

6. Conclusions

Driven by the Internet + education, the education industry has realized the integrated development of online and offline and obtained more practical benefits. In the process of integration and development of the two, it is not a simple overlapping development, but the Internet is used as a supporting platform and information technology is used to deepen the integration and development of interconnection and education. The reasonable design of the database of the student information management system can greatly improve the work efficiency of student management and related management personnel, and it is of great significance to improve the existing management level. This paper adopts B/S mode and three-tier system architecture, relying on network technology and ASP.NET technology, to design and implement a student information management system, which also improves the management level of the school. There are still many shortcomings in this paper that need to be improved. For example, the construction process of a knowledge graph is developed to be automated, and on this basis, functions such as course recommendation system and question-and-answer system are added to the course selection process of students, which need to be continuously enriched and improved in the later stage.

Data Availability

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

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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