Design and implementation of English teaching aid system for vocational and technical colleges

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Abstract: In recent years, the country strengthens the occupation education, increases to the high vocational high technical college education support strength, our country's high vocational high technical college education high speed development, each high vocational high technical school scale expands day by day, the school condition also obtained the actual improvement, but the high vocational high technical college English teaching method and the way are relatively backward. The traditional teaching methods and methods are obviously not suitable for the requirements of The Times. In this paper, combining with the modern teaching concept, making full use of network resources, developing the electromechanical English teaching system of vocational colleges with the characteristics of informatization and modernization, and adopting the software engineering thought, the English network auxiliary teaching system of vocational colleges is designed and implemented. This paper designs a new semi connection database query algorithm, the intermediate results from all child network data as the decisive factor of cost, and define a function, the experiment results show that in a distributed query optimization, and general half connection algorithm, the improved half connection query optimization algorithm has higher efficiency of optimization, the intermediate results are greatly reduces the amount of data, effectively reduce the total cost of the English teaching assistant system communication.

1. Introduction

With the rapid development of the Internet, various internet-based applications are getting more and more attention. In the field of education, traditional teaching methods have undergone significant changes. The modern education pattern in the WEB environment emerged. Computer aided instruction is a new education technology. With the development of education reform and the advancement of social informatization, it is required to popularize and popularize computer aided instruction. The network aided teaching system breaks the traditional education time and space restrictions, geographical restrictions, can make full use of education resources. Therefore, network aided teaching system has become one of the important practical contents and research directions of education informatization, as well as an important and urgent subject to promote education informatization [1-2].

In recent years, the country has strengthened the vocational education and strengthened the support for the secondary vocational education. With the rapid development of the secondary vocational education in China, the school scale of all secondary vocational schools is expanding day by day and the school conditions have been effectively improved. However, the teaching methods and methods of vocational English are relatively backward. Traditional teaching methods and methods are obviously not suitable for the requirements of The Times, combining modern teaching concepts, making full use of network resources, and developing vocational English teaching system with the characteristics of informatization and modernization is a must[3-5].

Network - assisted instruction is based on constructivism learning theory and independent learning theory[6-7]. So, based on the present situation of the higher vocational college English teaching, lets the student in the case of a fully autonomous English learning is not suitable, we

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should make up for the inadequacy of the classroom teaching with the help of network, gradually develop the students' ability of autonomous learning, exploration is helpful to students in higher vocational electronic English network auxiliary teaching of new ideas and new methods.

2. System design and analysis

2.1 System analysis

The basis of designing and developing the network aided teaching system is that English courses of higher vocational colleges should meet the requirements of education teaching concept of modern vocational schools. In order to improve the teaching level, stimulate students' interest in learning, enrich teaching resources and teaching methods, and enable students to develop the good habit of independent learning, it is necessary to design and develop an English internet-assisted teaching platform suitable for vocational and technical colleges. The network auxiliary teaching system should have the function of organizing and managing the teaching content and using users, namely teachers and students, and making it accessible through LAN and Internet[8].

English vocational and technical college students of public professional courses. The network auxiliary teaching system provides English teachers and students with a more attractive teaching and learning platform. The use of this auxiliary teaching platform can consolidate and strengthen the effect of classroom teaching, or make up for the shortage of classroom teaching resources. Teachers can publish and manage the teaching content and release some relevant teaching information through the teaching system. They can also assign homework and check homework, organize students to discuss, communicate with students online, understand all the dynamics of learning in students' learning, and provide necessary guidance for students' learning. Students can also choose their own key points of study[9-10], ask questions, participate in discussions, hand in homework, practice online and take simulation tests according to their own knowledge of different situations. The system in the use of the process, the requirements of convenient management, with a certain remote management function.

2.2 System design

The whole system interface is simple, easy to operate, including ordinary user login; Search courseware, view courseware, download courseware and other operations; Students submit homework, check courseware, ask questions and answer questions online; Teachers release courseware, check homework, update examination papers and answer questions; System administrator login, maintenance and other functions.

This system is divided into three parts: teacher, student, administrator system; The module structure is as follows:

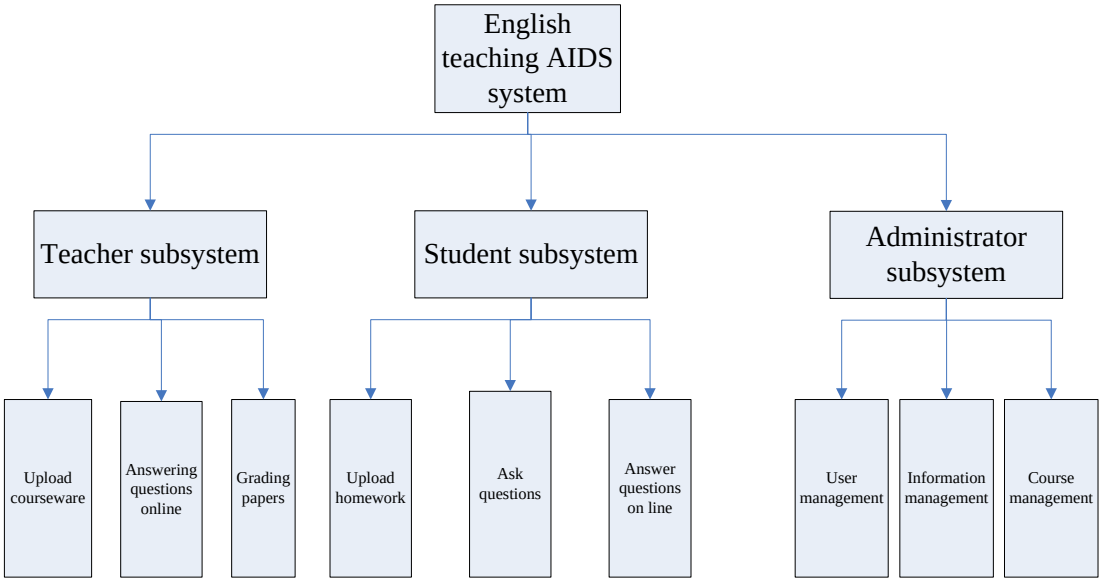

Figure 1 system module

Data flow diagrams represent relationships between users, systems, and databases.

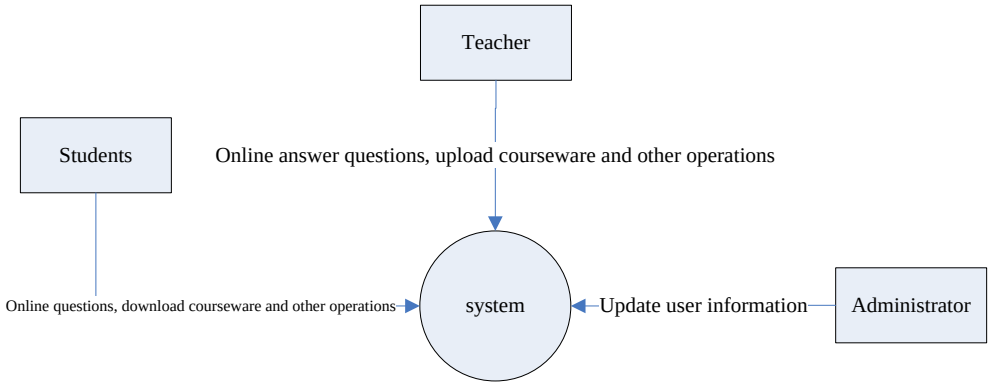

Figure 2. System data flow diagram

2.3 database query optimization algorithm of English teaching assistance system for vocational and technical colleges

2.3.1 Explore the optimization technology of distributed database

Because distributed databases may be physically distributed across different server nodes, including distribution at the library, table, and even data sharding level. Therefore, parallel execution is possible. In order to improve the parallelism of query operation, query execution strategy can be optimized

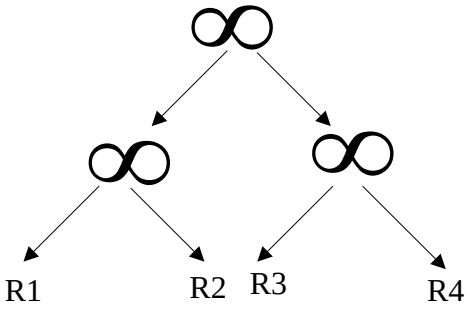

Figure 3. Join operation query

2.3.2 Optimize query execution mode of distributed database

The distributed system first checks whether the database exists locally after the user query request arrives, and if so, executes locally. If not, the global query processing module selects a node that processes the optimization of the query based on the information in the table, that is, selects a database node that has the database and the query cost of the manipulated table is the lowest. And establish a connection with the optimized node, and send the query command to the optimized node for execution.

At the same time, the IP of the optimized node is returned to the client. When the client receives a feedback message (new IP), it immediately reconnects with the new IP. When the new server node has finished processing the query, the result is returned to the client.

For any relation R, some definitions, theorems and properties in this section are as follows:

Definition 1: specify symbol to indicate: semi-connection: $\propto$; Connection: ∞; Projection: π; Then, the meaning of semi-connection is expressed as: $\mathrm{R} \propto_{\mathrm{A=B}} \mathrm{S} = \pi_{\mathrm{R}}(\mathrm{R} \infty_{\mathrm{A=B}} \mathrm{S}) = \mathrm{R} \infty_{\mathrm{A=B}} (\pi_{\mathrm{B}}(\mathrm{S}))$ or $\mathrm{S} \propto_{\mathrm{A=B}} \mathrm{R} = \pi_{\mathrm{S}}(\mathrm{S} \infty_{\mathrm{A=B}} \mathrm{R}) = \mathrm{S} \infty_{\mathrm{A=B}} (\pi_{\mathrm{A}}(\mathrm{R}))$; The meaning of the connection can be expressed as: $\mathrm{R} \infty_{\mathrm{A=B}} \mathrm{S} = (\mathrm{R} \propto_{\mathrm{A=B}} \mathrm{S}) \infty_{\mathrm{A=B}} \mathrm{S}$ or $\mathrm{S} \infty_{\mathrm{A=B}} \mathrm{R} = (\mathrm{S} \propto_{\mathrm{A=B}} \mathrm{R}) \infty_{\mathrm{A=B}} \mathrm{R}$

Definition 2: as can be seen from definition 1, semi-join operations are asymmetric

Property 1 set the property a of relation R and the property b of relation S as public property, and conduct $R \propto S$ on this public property. If $V(S,b) < V(R,\mathrm{a})$, $V(S,b) \le C(R \propto S) < T(R)$ is available

If $V(S,b) \ge V(R,\mathrm{a})$, then $C(R \propto S) = T(R)$

It is assumed that the property a of relation R and the property b of relation S are public properties, and the connection operation on this public property is carried out. It is assumed that the relationship between the following number of records exists: $\pi_b(s) \subset \pi_a(R)$, and there are two semi-connected methods:

$(R \propto S) \infty S$ and $(S \propto R) \infty R$

The cost of two different connections: $C((S \propto R) \infty R) > C((R \propto S) \infty S)$

Proof of cost:

$$C((S \propto R) \infty R) = T(R) + T(\pi_{\mathrm{a}}(R)) + T(S \propto R)$$

$$C((R \propto S) \infty S) = T(S) + T(\pi_b(S)) + T(R \propto S)$$

$$= T(S) + T(\pi_a(R)) + T(R \propto S) - (T(R) + T(\pi_{\mathrm{b}}(S)) + T(S \propto R))$$

$$= T(S) + T(\pi_{\mathrm{b}}(S)) + T(R \propto S) - T(R) - T(\pi_a(R)) - T(S)$$

$$= (T(\pi_{\mathrm{b}}(S)) - T(\pi_a(R))) + (T(R \propto S) - T(R))$$

$$< 0$$

3. Conclusion

This paper combines the modern teaching concept, makes full use of the network resources, develops the electromechanical English teaching system of vocational colleges with the characteristics of informatization and modernization, and designs and realizes the English network auxiliary teaching system of vocational colleges with the software engineering thought. Designed a new half connection of English teaching assistant system database query algorithm, the intermediate results from all child network data as the decisive factor of cost, and define a function, the experiment results show that in a distributed query optimization, and general half connection algorithm, the improved half connection query optimization algorithm has higher efficiency of optimization, the intermediate results are greatly reduces the amount of data, effectively reduce the total cost of the English teaching assistant system communication.

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