

## Research on Innovative Teaching Model for SQL Server and Oracle based on Framework Optimization and Instance Analysis

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**Abstract.** In this paper, we conduct research on innovative teaching model for SQL server and Oracle based on framework optimization and instance analysis. At present, some teaching materials in this paper introduces the principle and system structure is mainly to explain the role of each part, not through the application of the specific case to explain in detail the principle, the students learning boring. Our proposed teaching pattern will not only enhance the performance of the teachers when teaching but also make students more interested in the classes. The result of the education approach has been tested to be effective and necessary.

**Keywords:** SQL Server; Oracle Teaching; Framework Optimization; Theoretical Analysis.

### Introduction

Information technology especially the network technology to research teaching shows broad prospects. Teaching mode is in a certain teaching ideas or under the guidance of teaching theory to build a more stable teaching activity structure framework and activity programs. As a structural framework, highlighting the teaching mode from the macroscopic to grasp the teaching activities

on the overall and internal relationship between the elements and functions and the program highlights the teaching mode of activity as the differentiation and operability. Teaching mode is a classes and homework, selecting teaching material, prompt teachers a paradigm of the activity or project. Teaching pattern around a topic has a more stable structure and concise teaching theory frame and its specific operational way of teaching activities. Teaching model can provide a certain theoretical basis for teaching in all the subjects, modular teaching system, with experience and feeling, make the teacher get rid of groped in practice from the beginning to the status of the teaching. Set up a bridge between theory and practice [1-3]. Teaching mode of the intermediary role and it comes from practice and some theories of the characteristics of the simplified form inseparable.

Database technology as a foundation for support in the field of information and software discipline important branch, after more than 30 years of development and reform has formed a relatively complete theoretical system and a large number of practical systems and its application domain account for more than 70% of the entire computer application. At present, the technology of the Oracle database is an important course of

computer related major education in colleges and universities, its architecture principle as the core of the course content, design, development, management and is necessary to know. At present, some teaching materials in this paper introduces the principle, system structure is mainly to explain the role of each part, not through the application of the specific case to explain in detail the principle, the students learning boring, the feeling is very deep and difficult to understand, and so cannot be lift students' interest in learning Oracle database. In addition to the Oracle database system application and management of teaching. Combined with some cases are required to complete the teaching of the Oracle database design. Due to the particularity of Oracle course teaching, most of the vocational college will arrange in the course of the last school year learning, thus leading to a lot of students will learn this course and before SQL Server database technology course and the content of the course such as confusion together [4].

Case teaching method is refers to the teachers to meet the needs of the teaching objectives and teaching content, by setting the specific teaching cases, guides the student to participate in the analysis, discussion and exchange activities, lets the student positive thinking in the specific problem situation, to explore, to deepen students' understanding of basic principles and concepts, to cultivate students' comprehensive ability of a specific teaching method. Case teaching method is very suitable for database course teaching. The success of the case selection is the premise of using case teaching method. There is no case, case teaching is impossible; Improper selection if the case does not consider whether the case can create suitable situation, whether to meet the need of teaching content, will not be able to produce effective teaching. Therefore, the choice of the case in the case teaching method is very important. In this paper, we conduct research on innovative teaching model for SQL server and Oracle based on framework optimization and

instance analysis. If a query involves two or more tables at the same time, call it join query. Join query is one of the main relational database queries. Therefore, in the connection of the query teaching, according to the characteristics of the students and the characteristics of the textbook knowledge, using case teaching method can greatly improve the classroom atmosphere, stimulate students' interest, arouses student's enthusiasm and initiative, deepen the students understanding and mastering of join queries, so as to improve the teaching effect. In the next sections, we will discuss the methods in detail.

### **The Proposed Novel Teaching Model**

**The Principles of Oracle Teaching.** Oracle course mainly includes: the Oracle system architecture, Oracle, SQL language and function of use, management, backup and recovery of Oracle database objects, PL/SQL programming, performance tuning. External routines allow communication between the Oracle database application, it is to use the database language such as C, C ++, Java or COBOL. The fact is not new oracle has become a compatible database manager application client. At present there are some key areas of database security is not high. On the one hand, most of the database system is to ensure the security of the database server through a firewall, and through the database and the method of combining firewall to some extent, although you can enhance the system security but not in spirit. In the figure one, we show the sample user interface of the Oracle.

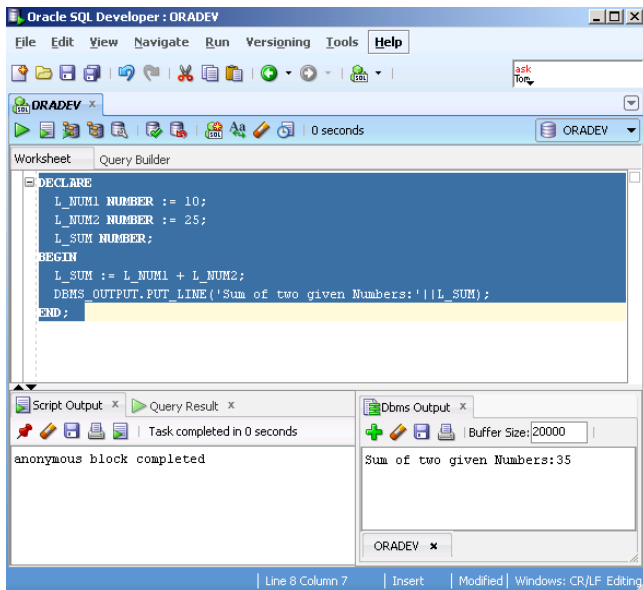


Fig. 1 The Sample User Interface of the Oracle

### The Principles of SQL Server Teaching.

This course practical SQL Server database, but its teaching effect is not ideal in many school, students generally feel dull and some disconnect theory with practice. The traditional teaching mode is no longer adapt to the demand, must be reformed. In the teaching of the SQL Server database, not to the content of the textbook knowledge introduction for the order, but around the case introduces relevant knowledge, minimize learning theory knowledge, through effective case teaching, change the abstract for image, weaken the difficulty of knowledge, guide students to independent design their familiar, similar to the classroom to introduce case instance. Practical points in actual practices in class and after class, class practices the part such as how to build in the SQL Server database tables and build relationships, we select student achievement management system, students in their own computer to build a database, to build two tables in database student information form and student achievement tables, and set up the primary key, to establish the relationship between the two tables. Each of the students have finished, group discussion, mutual exchanges, deepen the impression of knowledge, can't solve the problem analysis by the teacher, further

explanation, until the master.. In order to make students more familiar with the process of creating database and table in SQL Server and which will improve their operation skills, skilled do foreshadowing for the later teaching. In the following figure two, we show the sample illustration example that is always adopted by the teachers.

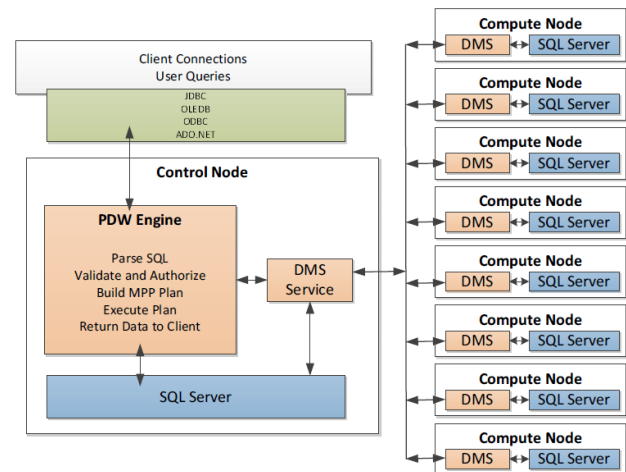


Fig. 2 The Sample Illustration Example of SQL Server Teaching

**The General Teaching Methodology.** Task driven teaching method is a kind of teaching method based on constructivist teaching theory. In particular, is to make students in a typical clear tasks and problems, to carry out teaching activities, guide students to gradually get clear thinking, clarify the structure of the knowledge, thus distinguished, step by step to complete the teacher set a series of "task". In this process, students can not only learn the necessary professional knowledge, professional skills and relevant professional skills, but also can develop the actual position of adaptability, so as to improve the professional quality of the whole. Task always want to have a thread running through, the Settings of the task to pay attention to the connection between the various knowledge points, a subject may eventually to accomplish a specific task, the task can be divided into several subtasks and the subtasks below may also be divided into more specific tasks. Evaluation is refers to students through reflection task for all

the problems in the solution process, and then make a self-assessment or evaluation of each other, and finally made by teachers proper review, induction and summary on the task. Task evaluation is not only the result evaluation, but also to the whole task to complete the participation of the students in the process of attitude and the ability to analyze and solve problems and innovation ability and the team cooperation ability in many aspects of comprehensive evaluation. Discovery learning is to cultivate students to seek knowledge, to find knowledge as the main goal of a kind of teaching mode. This pattern is the most fundamental is to let the students like scientists found to experience the process of knowledge. Provides facilitating students to solve the problems in the teaching of information, can increase the students' intelligence potential. By finding can inspire the students' intrinsic motivation ability which will be beneficial.

**The Instance Analysis based Teaching Methodology.** This teaching mode can cultivate the students' ability of independent thinking. In the teaching practice also have a lot of teachers in the use of it. Self-study tutorship teaching procedures are: self-study, discuss the inspired a summary of a practice. Teachers in teaching according to students' situation, decorate some learning tasks on new teaching content organization students' self-study. Case teaching method is the first case, no case, case teaching is impossible, no good case, there is no effective teaching and therefore the choice of case in the case teaching method is very important. Lecture before requiring students to preview the contents of this chapter, on the basis of the students to understand the teaching content, with the whole process of computer teaching demonstration case first, lets the student have a visual perceptual knowledge, then analyze and explain in detail, this is the most important step of case teaching. To do well the work, the first thing we should arouse the enthusiasm of students' preparation before class and participate in discussions. Build

outstanding professional ability training course standard, the standard the basic requirement of the course teaching, improve teaching quality. Refer to the relevant professional qualification standards, set up the course system and teaching content choice. For SQL course status and characteristics of network database course. Design pattern for the course teaching, training, guiding learning, online training, project cases, phase project and comprehensive practical teaching mode. According to various teaching models use a variety of teaching techniques, such as classroom trap, code review and the breakpoint tracing the application of teaching skills. With the characteristic of project development will greatly improve the teaching effect. In the corresponding figure three, we show the example project used for our teaching.

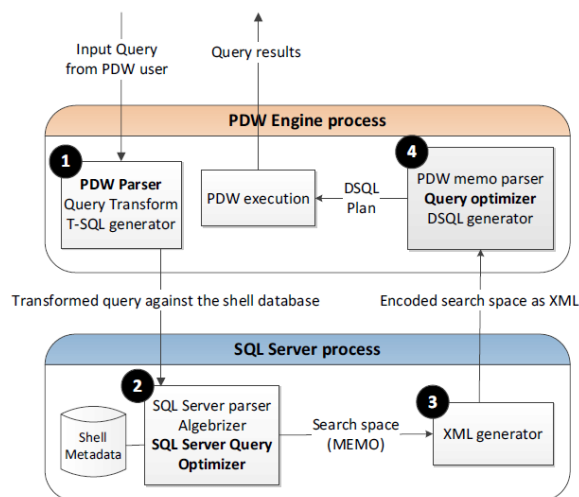


Fig. 3The Example Project of the Instance Analysis Teaching Model

## Conclusion

In this paper, we conduct research on innovative teaching model for SQL server and Oracle based on framework optimization and instance analysis. In the teaching practice also have a lot of teachers in the use of it. Self-study tutorship teaching procedures are: self-study, discuss the inspired a summary of a practice. The combination of instance analysis and traditional teaching g

activity will largely enhance the performance of the Oracle and SQL education. In the future, we plan to conduct more example base teaching activities to test the performance of our methodology.

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