

Application of Intelligent Technology in Intelligent Building Integrated Management Platform in Multi-Dimensional Data Environment: Based on MySQL

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Abstract: Query efficiency has always been a key factor in measuring database performance. With the rapid increase of the total amount of data in the network environment, more stringent requirements are placed on the response time of database queries. Aiming at the current popular open-source database MySQL, this paper analyzes the implementation process of executing SQL query statements and obtains the objective factors that affect the efficiency of query execution. On this basis, several practical and feasible performance optimization methods are proposed. The integrated energy management of collaborative smart buildings is introduced, which can promote the development of the industry.

Keywords: Application of Intelligent Technology, Intelligent Building Integrated Management Platform, Multi-Dimensional Data Environment, MySQL

1. INTRODUCTION

The status quo of traditional intelligent buildings: the overall intelligence level is not high, the intelligent building subsystems have not been highly integrated, the operation and maintenance of intelligent buildings has not realized self-discovery and self-diagnosis, the intelligent zed subsystems are relatively isolated, and the data between systems is not integrated [1]. In the process of continuous development of the market economy, the overall pattern of SMEs is also constantly changing, and their competitive environment is also different from before [2]. Old-fashioned and outdated management models and inherently stubborn management concepts have hindered the development and progress of enterprises. Therefore, only by resorting to more automation. In the era of big data [3], traditional relational database management systems (RDBMS) have experienced severe performance challenges when dealing with massive data [4]. The improvement of database performance is closely related to the execution efficiency of data query [5].

BIM technology is an information management technology for the whole life cycle of a project based on a three-dimensional building model [6]. It is currently widely used in construction and railway projects. For the construction of integrated pipe gallery [7], BIM technology can pass the visualization and collision checking functions in the design process. The "Twelfth Five-Year" Development Plan for the Internet of Things clarifies the twelve key application areas of the Internet of Things technology [8], including smart cities, smart grids, transportation, logistics industry, medical health, smart home, environment and safety monitoring, fine agriculture Animal husbandry, industry and automatic control, finance and service industry, public safety and defense and military. With the development of Internet of Things [9], big data, cloud computing, and artificial intelligence technologies, people have higher and higher requirements for various intelligent experiences in buildings. How to meet people's growing needs is a problem that people in the industry need to consider deeply. In today's rapid iterative update of the Internet, the C/S architecture has been unable to meet its rapidly changing needs. Based on this, the B/S architecture is composed of a browser-to-server architecture system [10].

which can adapt to the corresponding enterprise development needs more quickly and become [11] a more supportive and deformable software system architecture. MySQL database has been widely used because of its advantages of open source [12], fast running speed and less disk space occupation, especially in the background application of small and medium WEB websites [13]. For the standard segment model of the pipe gallery, because it is similar to the linear engineering design mode of the road, ORD can be used to model the standard segment of the pipe gallery. The modeling process of the standard section of the pipe gallery is as follows. With the development of my country's economy and the acceleration of urbanization, the current energy consumption of buildings during operation accounts for about 30% of the total social energy consumption, and continues to increase, resulting in unreasonable energy use and environmental pollution. [14]

The problem is becoming more and more prominent. Smart buildings are based on smart buildings [15], widely collect building, mechanical and electrical facilities, environment, operation, service quality [16], energy consumption, cost, human behavior and other information through the Internet of Things technology, establish a big data center, and comprehensively utilize the large data of buildings. Data intelligence platform. The network architecture system of the B/S mode is very different from the traditional client mode, which is embodied in the module integration of the B/S architecture system through the software system [17]. The integrated module performance shows greater convenience for the overall system development and maintenance. The validity of the syntax tree in step (3) is checked by the preprocessor. A new parse tree is generated by logically judging each node in the tree, but the structure of the tree remains unchanged. If there is a semantic error such as the required database object does not exist, or the alias has the same name [18].

feedback will be reported. Designers use ORD software's Geometry menu to complete the plan and profile design of the pipe gallery centerline. The intersection method and element method provided by the software are more in line with the designer's operating habits, and the "table editor" function is also convenient for modifying the centerline control parameters when design changes occur. In the entire energy

saving cycle of a building, the energy saving during the construction period accounts for about 25%, and the energy saving maintenance and operation management during the operation period can reach 75% of the total energy saving.

2. THE PROPOSED METHODOLOGY

2.1 The Application of Intelligent Technology

Therefore, if the intelligent building is realized, the energy saving rate of the building can be increased by 20% to 25%. The importance of intelligence is reflected in the later management. In actual work, no matter whether it is design or construction, intelligence belongs to the post-procedure profession, so professional coordination is more important, so as to avoid a large number of design changes. In the 3D BIM development platform, the intelligentization major and other majors., there is no need to install the corresponding client software, users only need to have Baidu, Google, Firefox, and other browsers, they can operate the corresponding architecture system through the corresponding web page. SQL optimization by the query optimizer, both logical and physical. The logic optimization is based on relational algebra, and the relational algebra syntax tree is generated after adjusting the nodes of the parse tree. The physical optimization is based on the principle of selecting the minimum cost, and further the query connection order and scanning method. Use the "Import Template" function of the "Corridor" menu of the ORD software to import the drawn cross section of the pipe gallery into the template library.

dig holes for the water supply, reclaimed water and gas pipelines. After the cross-section geometric elements are created, layers, element templates, feature symbols, and feature definitions need to be configured for each type of pipeline., To achieve intelligent management, an effective intelligent system is needed, which is not only a management tool, but also a good management platform, scientifically and rationally use these hardware products, and collect real-time energy consumption data to guide energy conservation. There are many intelligent professional subsystems, different system architectures, and various types of equipment. When using CAD for two-dimensional drawing, the engineering quantity statistics of front-end equipment and bridge pipelines is a big problem, and missing items or quantity statistics often occur in the design. inaccurate situation. If the software system adopts the B/S architecture, when users query various information such as pictures, texts and data, it is not necessary to rely on the client for corresponding access.

if the corresponding access is performed through the corresponding browser installed by the user. According to the execution plan generated by the optimizer, the executor calls the appropriate storage engine API, such as InnoDB, MyISAM, etc., to complete the execution of the query and return the result. Through the "Architectural Design" and "Structural Design" menus of OBD, designers can use functions such as walls, beams, slabs, and columns to model the pipe gallery structure at the nodes. The software provides a variety of component categories and styles, which include detailed information such as component material, size, and performance. The designer needs to set the detailed properties of the component according to the design scheme., to meet the urgent requirements of energy conservation management of intelligent buildings in China at present and in the future, provide an important means for energy conservation and consumption reduction in public buildings, and contribute to

energy conservation and consumption reduction projects while creating benefits.

2.2 The Intelligent Building Integrated Management Platform

As a result, it is necessary to repeatedly check the amount with the cost consultant in the later stage. During the construction, the owner often needs additional investment due to design problems. Intelligent majors can start designing on the basis of other professional models, and engineering quantities can be automatically counted. After setting the appropriate mapping relationship between components and equipment models, with the rapid development of the Internet and continuous updating and iteration, the database has become more and more extensive. Applications. With the development of databases, various types with different functions have been produced. Among them, SQL Server databases and MySQL databases are widely used. A SQL statement can be parsed into a variety of different execution strategies. From the perspective of query cost, the MySQL query optimizer calculates and judges whether the total query overhead including CPU utilization, I/O waiting time, network transmission, etc. is the lowest, Pipeline layout: Through the "Equipment Design" menu of OBD, the designer uses functions such as pipes.

pipe fittings, and pipe accessories to set information such as pipe diameter and elevation to lay out the pipelines inside the pipe gallery. It is worth noting that the basic configuration of the component should be consistent with the standard section. SynchroEMS (SynchroEMS) is an integrated energy management platform for buildings during operation. The system is based on data warehouse technology, integrates massive historical energy consumption data, and can directly obtain a detailed equipment list, which can directly reduce the workload and difficulty of intelligent design, so that designers can focus on the real design process, thereby improving Design efficiency and quality. MySQL database has the characteristics of small memory occupation, relatively low development cost, relatively fast running speed.

2.3 The Multi-Dimensional Data Environment: Based on Mysql

support a variety of computer programming languages, and its corresponding source code is free. Therefore, MySQL database is popular among small and medium-sized websites and corresponding enterprises. 's trust. Although the query optimizer realizes automatic optimization by combining the configuration parameters of the database system, data dictionary and other information, the DBA should not only rely on the query optimization module, especially when the target data volume is large. Model information is very important in BIM applications. Designers can create and mount pipe gallery information according to project requirements and analyze the content, and then view or modify it through "Properties"; Integration plays an important supporting role. The platform is suitable for government departments, industry associations, group-level enterprises, and property management departments to realize the collection, storage, statistical analysis, energy-saving diagnosis, and optimization control of various energy consumption data of the whole country.

a certain region (region), a park, and a single building. and general management. Due to the complex pipelines of engineering construction projects, all pipeline collision problems cannot be well solved in the design stage, and the

pipeline collision detection and positioning functions brought by the information elements of the model greatly reduce or even eliminate the drawing pipeline collision problems when approaching the site. Since its source code is free, any user can download and use its source code, so enterprises can further reduce the corresponding development and design costs during the corresponding development and design. No index is created for the key column of the data table, or the index column is not used in the WHERE, HAVING, ON and ORDER BY clauses. This will cause the query engine to be unable to utilize the index and be forced to perform a full table scan, increasing the disk I/O overhead. This project is model finalized in ORD by way of reference link.

This method is very suitable for long line and large-scale engineering integration. The way of reference link is equivalent to the mapping combination of multiple files, which will not occupy too much computer resources. The platform also provides unified development and configuration tools, data access services, system management tools, and information display platforms, etc., which can meet the application needs of different users of the system and provide the function of reporting data to higher-level energy centers.

3. CONCLUSIONS

The goal of MySQL database query performance optimization is to reduce the response time of SQL statement execution. In addition to the optimization mechanism provided by MySQL itself, the query performance is improved, and practice has proved that establishing an appropriate index and fully referencing the index through efficient SQL statements can achieve better execution efficiency. The integrated energy management platform for collaborative smart buildings is a typical application example based on IoT technology and oriented to smart city applications. Realize on-demand energy supply, intelligent adjustment, avoid waste, and ultimately help users improve energy conservation and reduce operating costs.

4. REFERENCES

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