The Development Trend Research of Computer Monitoring Technology Optimization in Interior Design Planning

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Abstract: With the further development of society, my country’s industry has further affected the environmental ecology, making environmental degradation more and more serious. In recent years, more or less haze has appeared near various industrial sites, making the air more and more severe. Muddy, people's lives cannot go on normally. Nowadays, people work indoors most of the time, so indoor environment and air quality will directly affect the health of the body. Therefore, it is very important to carry out research on indoor air quality monitoring, especially in offices, classrooms, shopping malls and other spaces. Closed and crowded places. There is a need for an indoor computer monitoring system that can grasp the environment of multiple rooms in the room in real time to achieve the purpose of monitoring and early warning. The purpose of this article is to study the development trend of computer monitoring technology optimization in interior design planning. This article through the in-depth study of computer monitoring technology, analysis of the current advanced computer monitoring core technology, combined with my country's contemporary interior design planning environment, to discuss the development and application of computer technology in interior design planning. And through the research and analysis of these development applications to explore the necessity of upgrading my country's indoor environmental monitoring system. This article will take the application of computer monitoring technology in interior planning and design as the research object and conduct research and analysis through literature method, questionnaire survey method and mathematical statistics method. Investigation and research show that Zigbee technology is used by most people. Compared with other wireless network computer monitoring technologies, ZigBee has better power, distance and convenience. The excellent application of computer monitoring technology in indoor planning and design makes it very good to monitor some indoor values in people's lives.

Keywords: Computer Technology, Indoor Environment, Planning and Design, Development Trend
1. Introduction
The environment is the basis for human survival, especially the indoor environment has a close relationship with human health and safety. People spend about eight to nine hours indoors working, living, and studying every day. The quality of indoor air environment has become extremely important, which has a decisive effect on people's health, and even life safety will be affected by it. [1-2]. With the rapid development of modern science and technology society, people from all walks of life in the society can be well developed, and the awareness of the concept of healthy and pollution-free life is increasing. More and more people are beginning to care about the comfort of their surrounding environmental conditions. Sex and safety [3-4].

Some of the more developed countries abroad have studied the field of indoor monitoring relatively early, and their monitoring techniques have reached a higher level. They have designed and developed some sophisticated environmental factor collection and monitoring systems, and have played an important role in environmental monitoring. The indoor air quality monitoring system designed by Vincenzo et al. can be applied to real-time monitoring of indoor air quality in health centers [5]. Affected by the level of economic development, the research and development of my country's environmental monitoring system is insufficient, the monitoring technology and monitoring equipment are relatively backward, most of which are semi-automatic processing, and the comprehensive processing and sharing of data information is insufficient. However, with the development of science and technology and the improvement of people's health and environmental protection concepts, more and more researches on environmental monitoring systems have emerged, and some environmental monitoring products and equipment have emerged. Li Zhuo real study indoor environment monitoring and control system design, indoor sensitive to gas, and environmental factors monitoring and control of domestic research environmental monitoring at the same time, actively participate in international cooperation in the introduction of foreign advanced technology, such as Zhejiang, a real estate company in the United States BROAN-NUTONE Cooperative Research Group to introduce Indoor air quality monitoring system [6].

This article first extends the core technology of computer monitoring through the study of the related basic theories of computer monitoring technology, and studies the development status of domestic interior design planning in the side [7-8]. Finally, combined with the investigation of the application of computer monitoring technology in interior design planning to explore the impact of human computer monitoring technology on it [9-10].

2. Research on the Application of Computer Monitoring Technology in Golden Interior Design Planning

2.1. The Core Technology of Computer Monitoring
(1) Zigbee technology
1) ZigBee is an emerging wireless communication technology, which has the advantages of low cost, low power consumption, and low complexity compared with other wireless communication technologies. The name ZigBee derives from the Bazi dance in which bees transmit pollen location information to each other in the meantime.

This technology is developed on the basis of IEEE 802.15.4 (a standard of the Wireless Personal Area Network Working Group). Therefore, ZigBee is also synonymous with the IEEE 802.15.4 protocol standard. This standard defines relevant standards and protocols for short-range, low-data-rate, and low-power wireless communication technologies.

2) Advantages of ZigBee technology applied to indoor planning and design
With the rapid development of modern society, the number of electronic equipment used in furniture has gradually increased, and the speed of its replacement is also very fast, which adds new networking nodes to support more equipment. In addition, home communication only needs to be indoors, and the distance requirements are not high, so the high efficiency and low power consumption of Zigbee technology can be used to component the monitoring system inside the home.
(2) Embedded technology

1) Embedded system refers to a dedicated computer system with application as the core, computer technology as the basis, software and hardware can be tailored, suitable for application systems, and strict requirements on reliability, function, volume, power consumption, and cost. It The main characteristics of the are embedded and specific. Embedded system includes hardware system and software system, usually composed of four parts: embedded microprocessor, peripheral hardware equipment, embedded operating system and user application program.

2) Compared with other general-purpose computer systems, embedded systems have unique characteristics: smaller system kernel and stronger specificity; simplified system; high real-time system software (OS); multi-knowledge technology integration has a longer life Cycle; dedicated development environment and development tools.

(3) Labview technology

1) Introduction to Labview Technology

Labview uses the structural block diagram of the graph mode to construct the program code, therefore, basically does not write the program code when programming in this language. Instead, there is a flowchart composed of icons and lines.

2.2. Analysis of Needs for Interior Design Planning

(1) Security requirements

Indoor air environment is related to the quality of life and health. The times are advancing, the economy is taking off, and people's awareness of the living environment is gradually increasing. Nowadays, people have two main criteria for judging the quality of the living environment: one is whether the surrounding living environment is safe, that is, it is safe. Standard; the other is whether the surrounding living environment is livable, that is, the livability standard. Safety is the prerequisite of suitability. As the main influencing factor of indoor environment, safety is mainly related to the safety of people's life and health. In the indoor environment, the main factors that affect people's life and health are whether harmful gas leaks and harmful gases in the indoor environment. Whether the content parameter exceeds the standard. The suitability of living refers to whether the indoor environment is in line with the indoor environment indicators required by people. Therefore, the design of the indoor environment monitoring platform should be combined with specific gas measurement indicators, and the range of indoor environment parameters should be controlled within the safety range required by the national environmental protection department.

(2) Functional requirements

Taking into account the current problems in indoor environment monitoring, this article intends to use wireless communication to break the constraints of space. As an intelligent and complete indoor environment monitoring platform, it mainly realizes the following functions:

1) Realize the transmission of data information of the entire indoor environment monitoring network through wireless means.

2) The data acquisition module periodically collects indoor ambient air.

3) The core control module monitors the data in real time, and sends a command to the collector every period of time to monitor the data, process the data, and transmit the data to the data center. When the data information exceeds the set range, the user will be notified of the current data information at any time.

4) The data center is used to display the monitored data information and save all the monitored information.

5) The development and design of the entire monitoring platform is modular. In order to meet the needs of different sensors, the indoor environment monitoring platform has scalability.

2.3. Analytic Hierarchy Process

In judging and judging the relative importance of the existing plan, and judging the implementation degree of the existing plan based on the final calculation result.
\[ a_j = a_j / \sum_{j=1}^{n} (a_{j'}) / n \] (1)

\[ j = 1, 2, 3, \ldots, m \]

In order to meet the data usage habits, the data is normalized

\[ a_j = a_j / \sum_{j=1}^{m} (a_j) \] (2)

3. Experimental Research on Optimization of Computer Technology in Interior Design Planning

(1) Subject

In order to make the research results more scientific, comprehensive and effective, the subject of this survey is a household head of a certain place who has installed a computer monitoring system. This article will investigate the types of computer technology used by the homeowner, as well as the information indicators monitored by the monitoring technology and traditional methods. The accuracy is obtained by comparison. This study uses a questionnaire survey and a ten-point scoring system. "1" means disapproval and "10" means approval. The degree of approval from 1 to 10 is from low to high, and the data will be obtained. Using the analytic hierarchy process to get a more accurate result. This study will start from the recognition and worries of the practitioners in the financial and economic fields on the application of artificial intelligence technology, in order to explore the development trend of computer monitoring technology in interior design planning. This time, a total of 100 household heads were randomly surveyed, among which the sex ratio was 1:1. The analytic hierarchy process of the survey results obtained more accurate results.

(2) Literature research

This article reads a lot of previous research literature and the latest industry data reports, and collects the most cutting-edge industry background information. These research results not only provide a large amount of data support and theoretical basis for the topic selection of this article, but also provide sufficient theoretical and data support for the final prediction conclusion of this article.

(3) Enterprise research

Based on the timeliness and particularity of the rapid development of computer technology, this article goes deep into the field of indoor planning, communicates with the head of the household through in-depth interviews and indoor visits, and masters the real situation of indoor information indicators, which provides a solid reference for this research.

(4) Case study

Aiming at the particularity of computer technology, this article actively collects data from various parties through network data and scholars' research, and combines the universality and particularity of indoor air indicators. This article extends the concept of artificial intelligence technology to the general characteristics of business scenarios and proposes future development hypotheses.

(5) Mathematical Statistics

Use software to perform statistical processing on relevant data and analyze relevant data.

4. Experimental Analysis of Computer Monitoring Technology in Interior Design Planning

(1) The gradual maturity of the Internet of Things technology, as well as the large-scale, self-organizing, and low-power characteristics of computer detection technology, have made it widely used in the field of monitoring. This experiment will analyze the use of computer monitoring technology by the head of the household to investigate the universality of computer monitoring technology. The data obtained are shown in Table 1:
Table 1. The universality of computer monitoring technology

| Monitoring technology     | Man | Woman |
|---------------------------|-----|-------|
| Zigbee technology         | 20  | 18    |
| Labview technology        | 13  | 11    |
| Embedded technology       | 12  | 15    |
| Others technology         | 5   | 6     |

Figure 1. The universality of computer monitoring technology

It can be seen from Figure 1 that more than 35% of householders who use computer indoor monitoring technology use Zigbee technology. It can be seen that ZigBee has better power and distance performance than other wireless network computer monitoring technologies. And convenience.

(2) The computer monitoring system can collect data on various indoor indicators, so its stability and accuracy greatly affect the scientific nature of data collection. This article compares the collected data with traditional methods, and finally draws the user’s satisfaction with each indicator is shown in the following table:

Table 2. Parameter data comparison

| Parameter   | Temperature | Humidity | Formaldehyde | Others |
|-------------|-------------|----------|--------------|--------|
| Man         | 8           | 3        | 6            | 5      |
| Woman       | 7           | 4        | 6            | 4      |
It can be seen from Figure 2 that compared to formaldehyde, the computer monitoring of temperature and humidity is more satisfactory, and the error is smaller compared with the data measured by traditional methods. The side reflects the excellent application of computer monitoring technology in indoor planning and design. It can be seen that computer monitoring technology can well monitor some indoor values in people's lives.

5. Conclusion
The innovation of science and technology has changed the development of human society. Mankind's enthusiasm for following new technology has never been reduced. The correct knowledge of technology is the affirmation of its application. With the rapid development of the Internet, high information technology, and product diversification and individualization, indoor planning and design are becoming more and more complicated. How to use the convenience of computer monitoring technology to monitor and improve the indoor environment and improve the living comfort of the head of the household. This is a topic that many scholars are developing and researching. Since the emergence of computer monitoring technology, it has received extensive attention from researchers. Numerous theoretical studies and applications have promoted the rapid improvement of this technology. Currently, wireless sensor network technology has been integrated into all aspects of our lives, bringing many benefits to everyone.

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