

# Research on the Data Warehouse Method of University Student Employment Management System

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**Abstract:** With the continuous deepening of my country's education reform, higher vocational education has made considerable progress. At present, in various schools, especially in vocational education schools at all levels, the school database construction has been relatively complete, and a large amount of education and teaching information is stored in the database. According to investigations, these historical data that hide a large amount of educational information have not been used well, and the educational laws hidden in these data have not been well explored. As a result, the professional distinction in some vocational education schools is not large, and there is no obvious distinction in the setting of professional courses. It is difficult for graduates to find jobs suitable for their majors. The reason is that in addition to the inability to keep up with the curriculum and the fact that the students' actual abilities cannot be cultivated to the standards required by the actual employer, there are many hidden reasons behind. In the end, after receiving three or five years of education, the students' good quality has not been developed and their abilities are insufficient. The students with practical working ability are restricted by majors or some undiscovered factors. This article attempts to dig out correct, reliable and credible association rules from a large amount of vocational education information.

## 1. Introduction

The world is progressing, human beings are developing, and various technologies are constantly being developed and improved. Of course, database technology is no exception. The amount of data stored in the database is also increasing. Of course, this is also due to the emergence of the Internet. With the advent of the Internet, human information exchange is no longer restricted by space, allowing everyone to easily exchange various data and information through the Internet. In the continuous development of the Internet, the data people get is like a snowball. It is getting bigger and bigger. There are many important information hidden behind the large amount of data. Through in-depth analysis of it, people hope to get those very important or Valuable data information. The database system cannot automatically find out very important or valuable data information, which gives birth to data mining. It is not difficult to understand the meaning of this word. People have a large amount of data information. To find out the very important or valuable data information hidden in the large amount of data information, it is necessary to continuously dig. Nowadays, data mining has been widely used in various fields and has achieved satisfactory results. In the process of continuous development and deepening of our country's education reform, vocational and technical education is also advancing in great strides. Higher vocational colleges are growing like mushrooms. According to statistics in 2009, there are more than 1,100 higher vocational colleges in my country. The school has more than 8 million students, which accounts for more than 50% of the total number of students in ordinary colleges and universities. Higher vocational education has become an integral part of higher education. With the advancement of education informatization, almost all school offices and classrooms are equipped with computers, and most schools have their own campus network, and all school data can be queried on the network. Among these data information, we divide them into three categories: The first category is the school's administrative management information: such as important meeting notices, teaching briefings, various activity reports, etc.; the second category is teaching information: such as course arrangements and teachers Status, teaching quality inspection, etc.; the third category is student information: such as students'

basic information, semester results, commendations and awards, etc. Among the three types of information, student information should be the most important, but it is not paid attention to. It is only used when the transcript is sent at the end of the semester.

## **2. Data Warehouse and Data Mining Technology**

Now our definition of a data warehouse is: “A data warehouse is a subject-oriented, integrated, non-volatile collection of data that changes over time to support the decision-making of managers.” This is Bill Inmon, known as the father of the data warehouse, described the data warehouse in his book “Building the Data Warehouse”. This description completely defines the characteristics of the data warehouse, that is, the four major characteristics of subject-oriented, integration, non-volatility, and time-variability distinguish the data warehouse from other data storage systems. From the literal meaning of the above concept, data warehouse contains two meanings: data, that is, facts and information about something; warehouse, that is, a place or facility for storing goods and commodities. The purpose of establishing a data warehouse system is to build a systematic data storage environment that separates a large amount of data required for analysis and decision-making from the traditional operating environment, and transforms scattered and inconsistent operating data into integrated and unified Information, use this information to find problems, analyze problems, solve problems, and then make decisions to obtain more economic benefits in the future. The definition of data warehouse shows that on the one hand, it is similar to the original database and is a space for storing data. On the other hand, what it stores is not the original data in a general sense, but a collection of processed data that supports the management decision-making process. This data set has four major characteristics: “topic-oriented”, “integrated”, “non-volatile” and “time-varying”.

## **3. Employment Data Warehouse Modeling**

The conceptual model is a conceptual tool. Serving the target design system, collecting information, etc., in the process of communicating with users to define the information that the data warehouse needs to access, including current, future and historical data information. You can determine the operating data, data sources, and some additional data in the requirements analysis stage, design an easy-to-understand data model, and effectively complete the mapping between queries and data. The information package diagram used in this topic is the most commonly used one in the conceptual model. Hypercube is also a commonly used conceptual model, but when the dimension exceeds three-dimensional, its intuitiveness is very poor, which greatly increases the difficulty of data collection and presentation. For this reason, Hammergren proposed in 1997 that the information packet map can be in the plane Expand the hypercube on top, it visualizes the representation of the hypercube. The information package diagram method must first clarify the subject of analysis, and then load indicators, dimensions, granularity and other information around this subject. Indicators are evaluation indicators for analyzing the subject. The dimension is the way for users to access evaluation information. Granularity is the level of detail of the information in the dimension. The design of dimension tables and fact tables will directly affect the response time and analysis results of the data warehouse, so the key issue of data warehouse construction is the design of dimension tables and fact tables. Dimension is the best way to reflect the user's analysis or observation object, and it must reflect the data granularity and data level in the data warehouse. The fact table and dimension table should be organized according to the established analysis theme.

The modeling theory of the star model spreads outward from the center point. The central object is the “fact table”, and several objects outside are “dimensional tables”. The star model is connected by the “fact table” and several “dimensional tables”. Made. The main feature of the fact table is that the included digital data can be summarized and provide historical data about various actions. The primary key of the related dimension table as a foreign key is contained in one or more partial indexes in each fact table. The star model can support the idea of decision makers and define data entities to meet the needs of subject-oriented data warehouse design, and the information package diagram can provide a complete conceptual basis for the design of star diagrams. The star chart

includes three logical entities: dimensions, indicators, and categories. The indicator entity is the entity at the center of the star chart, which provides quantitative data for user activities, and is the center of basic entities and query activities. Each indicator entity represents a series of related facts, completes a designated function, represents the comprehensive level of a real transaction, and only corresponds to one point of each related dimension. The dimensional entity is located on the star corner of the star chart, and its function is to limit the user's query results, achieve the purpose of filtering data and reducing the scope of access.

#### **4. Application of Data Mining in Employment Guidance**

Generally, after evaluating and testing the knowledge discovered by the algorithm model, the knowledge deemed correct can be obtained and a reasonable explanation can be given. The economies of Type A and Type B are relatively developed, and people's overall living standards are relatively high. Therefore, the economic situation of ordinary families is also relatively good. The practical ability has been well exercised in the internship, so the employment rate of students is relatively high. Students with medium grades did not go to a higher level of study. This may be because they do not have a strong desire to learn, or because their scores do not meet the requirements for undergraduate education. Then they choose to enter a company or work in a company is their first choice.

Type C areas are areas with relatively backward economy in the three types of areas A, B, and C. Family income in the entire area is relatively low. Children have already spent more family income in school and cannot continue to receive students' continuing education. . Students have relatively low grades and are not interested in continuing education. Going out to work can reduce the financial burden of the family. The lack of knowledge also prevents these students from finding a stable work unit, usually in a place or a company for several months, which is very mobile. Through association rules, we can also get the connection between majors and employment: in the 2006-2009 employment data, the number of students in civil engineering, economic management, and traffic engineering departments is relatively large. This is also very much in line with the actual situation, because its school is a leader in construction vocational schools in the southwestern region, and these departments are the school's trump cards. The teaching staff in this area is very strong, and it enjoys great benefits in the province and even the whole country. With a high reputation, these students can rely on the professional skills they have learned to find jobs after graduation, and they are often in short supply. They are welcomed by many companies. The employment rate and quality of employment are relatively high. In addition, through the related rules, we can also analyze and compare: the employment rate caused by the difference in employment time. Especially since the 2008 economic crisis, the world economic situation has oscillated and changed, and domestic economic growth has slowed down. Many companies have closed down due to operating difficulties. Employment in all walks of life is quite severe. Under such circumstances, it will inevitably lead to difficulties for some professional students to find employment. The employment situation of the departments of computer engineering and humanities and social sciences has declined, but the employment situation has improved significantly in 2009. However, the graduates of the civil engineering and traffic engineering departments were not significantly affected in 2008. The devastating earthquake disaster occurred in Wenchuan, Sichuan in 1988. There are a large number of post-disaster reconstruction tasks that require these students who have just come out of school to give full play to their strengths.

#### **5. Conclusion**

With the continuous development of society, the country has also paid increasing attention to the development of vocational and technical colleges, and has initiated demonstration construction in vocational and technical colleges, increasing investment in the development of vocational and technical colleges. The employment methods of vocational technical colleges have also become diversified and autonomous. How each vocational technical college stands out in the increasingly

fierce competition has become the key to the survival of the school. The research of this subject shows that the establishment of employment data warehouse provides a certain basis for decision analysis, and if OLAP and data mining techniques are applied to the field of employment guidance, we can find various potential rules from employment information and find employment the reason for the drop in rate. This will guide employment decision-makers to adjust employment strategies, scientifically guide employment, rationally set up majors, and efficiently carry out publicity, and ultimately achieve the goal of increasing employment rate and ensuring employment quality. These are of important practical significance for expanding the scale of vocational technical colleges and improving the quality of running schools.

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