**Database design of Cargo logistic system**

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1. Instruction

As an important role in logistics, container freight is also a significant part of international trade. With the evanescing of financial crisis, container freight in some major port cities recovers speedily. Container throughput of port cities is a symbol which shows whole country’s status in international trade. Global manufacturing center is shifting to Asia in recent years, pushing container business into a new generation. Increasing trade volume of China leads to a high requirement of Container freight, therefore, how to modernize container freight becomes one of the most important things for the country.

At the same time, Internet technology has gradually been blending into people's lives. Various kinds of application which rely on the Internet such as the Internet of Things and e-commerce are increasingly hot. Chinese premier Hu declaimed to promote “Smart China” program which had same function like “Smart planet” which sponsored by Obama. That program uses Internet of things technology to link objects together in order to provide better service for people. The Internet of things (IoT) is an important part of new generational information technology which base on huge data collection, sensor technology and RFID technology, trying to use the Internet to connect objects and then achieve Intelligent Control. IoT collects any necessary information by sensor, RFID technology and GPS system, combining with Internet and forms a giant network in order to achieve connection between materials and people. The giant network can identify, manage and control information conveniently, providing a steady foundation for modern logistics. Recent years, after ISO18186 standard became a united standard, the RFID tags have been gradually regarded as information carrier. The tags can achieve automatic recognition and interaction when containers are in clearance and transport. The tracing function can reduce possibility of containers missing and confusion, increasing work efficiency of container freight and displaying the transport’s information transparently. Because of these new technologies, there will be numerous data transmitted through the Internet and that’s why I build such a database in good term.

1. Achievement by implementing the database

The Container system monitors containers through sensor and RFID tags. The equipment is important composition of RFID container management system. Through a composing of RFID tags and sensors, the conception of electrical seal has been generated. The seal is different to normal RIFD tags, locating on the gate of container. It can detect on-off state, environment changing and then store into memory. The sensors can detect change of temperature, pressure, humidity, voice and magnetism. Due to the equipment, data size is numerous and that is why it is so important to set up a comprehensive database. Moreover, the database need ability to merge third parties database which contains information such as flight information, ship No, etc. In order to achieve these abilities, an efficient database needs to be built to achieve these requirements.

1. Benefits by implementing the database

Because the database I designed needs to connect with a lot of other databases and constitutes them together as a whole. The united database can be built to a data warehouse and then to do data mining. By definition, data mining is defined as mining the useful information from plenty of data. It can transform these data into useful information and knowledge in order to give some judicious decisions to managers of companies. So, through the database, we can provide a nice circle through it and make right decisions for business in the future.

1. Equipment and Tools
2. Database

Use Oracle 11g to achieve project. The Oracle Database 11g Release 2 Edition delivers industry leading performance, scalability, security, and reliability on a choice of clustered or single-servers running Windows, Linux, and UNIX.

1. Hardware

Use oralinux.seas.gwu.edu servers

1. Software

Operating system is Windows and IOS

Connect to Oracle via PortaPutty, SSH Secure File Transfer Client

Ancillary tools: SQL Developer and modeler

1. System Data Flow Diagram (DFD).

Use the Oracle Data Modeler to build the DFD