

MASTERS DEGREE DEFENSE
COMPUTER SCIENCE DEPARTMENT
AN IMPLEMENTATION OF DATA WAREHOUSE
FOR DECISION SUPPORT SYSTEM WITH
MYSQL

By
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With the growing popularity of the Internet as a communication tool, Online Analytical Processing (OLAP) accommodates faster and efficient reporting capabilities to users. This thesis focuses on exploring the implementation of several case studies of data warehouse around MySQL database system using the bottom-up approach and the resulting analysis between original operational database and relational and star schema dimensional data warehouse designs. The major efforts considered in this project include improving the efficiency of generating reports from the operational database, answering queries not available in the operational database, and the versatility of the dimensional data warehouse design.

To illustrate such improvement, five test cases were built and demonstrated. The first case study focuses on query time improved in comparison to the operational database. The second case shows how to keep the accuracy of the operational database. Third case shows how previously unavailable answers in the operational database can be solved in the data warehouse, especially when the data warehouse developers are different from the original database developers and have no direct access to the operational database. The fourth case shows several different ways the first three cases can be implemented in dimensional data warehouse schema. The fifth case adds to the idea that dimensional data warehouse schema can be used for more variety of possible queries for analysis.

In addition, the thesis project focuses on methods in developing and maintaining the SQL queries for Extraction, Transfer, and Load operations for initial and regular population of the relational and dimensional data warehouse.

Date: Thursday, November 08, 2007
Time: 12:00 p.m. - 1:00 p.m.
Location: Computer Science Conference Room 8-48

Advisor/Committee Chair: Dr. Chung Lee

Committee Members: Dr. Lan Yang and Dr. Daisy Sang