**BDMS and Data warehousing -- I**

**CSC317 Database Systems II**

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**CASE 04**

INTRODUCTION

1. **Prepare a high-level summary of the main requirements to evaluate DBMS products for data warehousing.**

“An operational data store (ODS) is a type of database that’s often used as an interim logical area for a data warehouse” (Rouse, 2009). The data may pass through this type of database for additional operations before it is used in the data warehouse for reporting.

In computing, “a data warehouse is a subject-oriented, integrated, time-variant, non-volatile collection of data in support of management’s decision making process” (Thomas, 2004). This document is a summary of the main requirements to evaluate database management system products.

EVALUATE DATABASE MANAGEMENT SYSTEM PRODUCTS

In today’s society with new forms of data being generated with tools like, tweets, videos, text messages, and RFID scans, Enterprises are overwhelmed by transactional relational data. They are having to store much more data than in previous years and to do so, they’ll need to invest in various products to support data analysis. **Reliability**, **adaptability**, **scalability**, **predictability**, and manageability are factors to consider when selecting a relational database management system (Orsborn, 2013).

To deliver **predictable** service levels, a DBMS must, deploy quickly, support vacillating workload with data, time stamps, and easily scale with respect to increased user, data volumes and transactional loads. She must also maintain a high level of availability with respect to these considerations (Orsborn, 2013).

When considering the **adaptability** of the RDBMS, considerations should include whether the new system will have the ability to frequently support traditional online transaction processing (OLTP) and business intelligence operations on the same hardware. This is crucial because the activity type is extremely difficult to predict with a significant level of precision (Orsborn, 2013).

A **scalable** solution will be able to support continual growth with, users, data, and transaction, without accruing additional costs via new hardware requirements. Data compression, in-memory processing, database virtualization, and exploiting the power of multi-processor servers, are some of the best methods to increase scalability (Orsborn).

To be considered **reliable**, a RDBMS should be able to “continue to process user requests even when the underlying system is unreliable; for example, when a failure occurs” (Gamper, 2009).

According to Craig Mullins a robust implementation of, transactional atomicity, consistency, isolation, and durability, (ACID) are properties that guarantee that database transactions are processed reliably (Mullins, 2016).

Manageability

**- Concurrent query management**: The DBMS should have enough capability to support the multiple users performing a mixture of both simple and complex requests. It should provide facility like workload partitioning and balancing. It should have a concurrence model that can support data loads to the database [2].

Multidimensional data analysis and its advantages:

What is multidimensional analysis?

Multidimensional analysis takes data and turns it into highly explorable structures sometimes called cubes. These structures provide a multidimensional view of the data — for example, what product sold best in a specific region, during a particular time period for a specific sales channel. This view helps to provide a greater insight into the business and helps the concerned body to make more informed decisions [3].

Providing quick answers to commonly asked business questions is the core value of multidimensional analysis. Because it is designed around key business factors, the quality of answers obtained from this type of analysis is very high [3].

Multidimensional analysis uses dimensions and measures for analyzing given data. Dimensions are hierarchies and have one or more levels. The dimensions that is ...

1. **Suppose you are selling the data warehouse idea to your users. How would you explain to them what multidimensional data analysis is and its advantages?**
2. **The Data Warehousing project group has invited you to provide an OLAP overview before making a commitment. The group's members are particularly concerned about the OLAP client/server architecture requirements and how OLAP will fit in the existing environment. Your job is to explain to them the main OLAP client/server components and architectures.**

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