

## : *What are key database concepts for managers?*

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Managers need a basic understanding of computerized databases. Why? Because database systems provide the key functionality for data-driven decision support systems that provide business intelligence. So what are the key concepts that managers should understand? First, managers should recognize that a decision support database is often separate from a transaction processing database. Second, managers should be familiar with the main concepts of database theory, especially queries, data models and relations. Finally, managers must appreciate that decision support data needs to be actively managed and this task generates significant expenses.

In general, a decision support database contains facts that are extracted from transaction and operating systems. The factual data is often summarized and analyzed to assist managers with specific recurring decisions. Special studies using the data may be conducted for a nonroutine decision situations and business intelligence needs. For example, a database with salary data may be used regularly to assist in setting salaries for new employees and used periodically in determining employee raises or bonuses. Current salary data in an operational database would be used to calculate pay check amounts.

What is the essence of database theory? Data should be systematically organized. The central focus is the capabilities of a structured query language and the connection of queries to the logical representations of data called a data model.

What is a data model and how does the data model impact actual database design? A data model is an abstraction of data interrelationships that describes how data is related and represented. Data models formally define data elements and relationships among data elements for a domain or topic of interest like order entry.

What is data management? "Data management is the development, execution and supervision of plans, policies, programs and practices that control, protect, deliver and enhance the value of data and information assets(from DAMA)." Database managers are concerned about actively managing data, security, the data architecture, analysis and design of database applications, data quality management, and explaining the source and meaning of the data in the database.

According to a SQL Server paper at Microsoft, "Decision-support database applications are optimal

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for data queries that do not change data. For example, a company can periodically summarize its sales data by date, sales region, or product and store this information in a separate database to be used for analysis by senior management. To make business decisions, users need to be able to determine trends in sales quickly by querying the data based on various criteria. However, they do not need to change this data. The tables in a decision-support database are heavily indexed, and the raw data is often preprocessed and organized to support the various types of queries to be used. Because the users are not changing data, concurrency and atomicity issues are not a concern; the data is changed only by periodic, bulk updates made during off-hour, low-traffic times in the database." ([http://msdn.microsoft.com/en-us/library/aa933056\(v=sql.80\).aspx](http://msdn.microsoft.com/en-us/library/aa933056(v=sql.80).aspx))

Occasionally DSDB stands for Decision Support Database, but the acronym is not used often. In general, decision support databases are more often called data warehouses or data marts.

### References

Microsoft, "Online Transaction Processing vs. Decision Support, SQL Server 2000,"  
URL [http://msdn.microsoft.com/en-us/library/aa933056\(v=sql.80\).aspx](http://msdn.microsoft.com/en-us/library/aa933056(v=sql.80).aspx)

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