

Data Modeling

by Sudheer Sharma - Monday, November 30, 2009

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Data modeling is the process of designing and validating a database that will be used to meet a business challenge. Data modelers use terms and symbols to identify and represent all of the data objects needed for a business operation to function.

Data models document entities (the persons, places and things [product, warehouse, partner etc.] an organization encounters in the course of business); the relationships of entities (e.g. employee WORKS in warehouse, MANAGES product and SHIPS to partner); and the attributes of entities (description, order number, address, account balance etc.).

There are three common types of data models.

Conceptual data models define and describe business concepts at a high level for stakeholders addressing a business challenge.

Logical data models are more detailed and describe entities, attributes and relationships in business terms.

Physical data models define database objects, schema and the actual columns and tables of data that will be created in the database.

Like the blueprint of a building, a data model is the design specification for a database. Data modeling can be helped by off the shelf data models that can be adapted to a specific use. But data architects warn that without proper time and attention to “design before you build,” organizations face inaccurate reporting, incorrect data, costly remediation and difficulty in meeting new user requirements.

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