Concepts of dimensional data modeling

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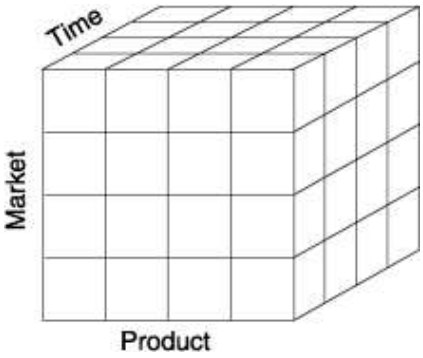
To build a dimensional database, you start with a dimensional data model. The dimensional data model provides a method for making databases simple and understandable. You can conceive of a dimensional database as a database *cube* of three or four dimensions where users can access a slice of the database along any of its dimensions. To create a dimensional database, you need a model that lets you visualize the data.

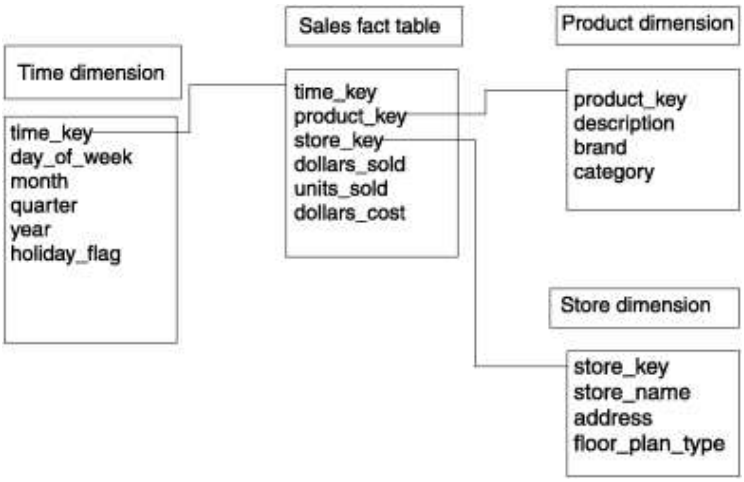
Suppose your business sells products in different markets and you want to evaluate the performance over time. It is easy to conceive of this business process as a cube of data, which contains dimensions for time, products, and markets. The following figure shows this dimensional model. The various intersections along the lines of the cube would contain the *measures* of the business. The measures correspond to a particular combination: product, market, and time data.

Figure 1. A dimensional model of a business that has time, product, and market dimensions



Another name for the dimensional model is the *star schema*. The database designers use this name because the diagram for this model looks like a star with one central table around which a set of other tables are displayed. The central table is the only table in the schema with multiple joins connecting it to all the other tables. This central table is called the *fact table* and the other tables are called *dimension tables*. The dimension tables all have only a single join that attaches them to the fact table, regardless of the query. The following figure shows a simple dimensional model of a business that sells products in different markets and evaluates business performance over time.

Figure 2. A typical dimensional model



- **The fact table**
  The fact table stores the measures of the business and points to the key value at the lowest level of each dimension table. The *measures* are quantitative or factual data about the subject.
- **Dimensions of the data model**

Parent topic:

→ Design a dimensional data model