CONCEPTUAL MODEL

Practice examples

1. ART MUSEUM

An art museum owns a large collection of art works. Each work is described by an item code, title, type and size. Size is further decomposed into height, width, and weight. The size information is important for storage and transportation considerations. A work is developed by an artist, But the artist for some works may not be known. An artist is described by an artist id, name, date of birth, and date of death (null for living artists). Only data about artists for works currently owned by the museum are kept in the database. At any point in time, a work can be on display, held in storage, or on loan to another museum.

2. GYM TRAINERS

Suppose you are setting up a database for a gym. The gym hires trainers. Clients can sign up for multiple Sessions that need not be with the same trainer. The sessions can vary in length so the start and end times are recorded to assess how much a client owes. Different pieces of Equipment can be used in each session for different amounts of time, so a piece of equipment can be used in more than one session.

Creation the entity-relationship modeling using either the Chen notation of the Crow's Feet notation. Use min/max values.

3. UNIVERSITY HIRING

You wish to develop a database to keep track of new instructor hires for departments within a university: who they are and when they were hired. An instructor can be hired by more than one department, not necessarily at the same time. Each instructor has a set of skills. The university wants to be able to track which skills an instructor possesses, as well as basic data about instructors and departments. It is not necessary to include a University entity, but if you do, make some reasonable assumptions about what attributes to include in the database.

4. FURNITURE COMPANY

Assume that a furniture company has products, described by a product number, description, and industry. Each product is composed of components, which are described by the component number, description, and unit of measure. These components are used to make one or many products. Raw Materials are also considered to be components (so you do not need to distinguish raw materials from components). In both cases, we need to keep track of the time at which the components go into making the product.

5. COMPANY CONSULTANTS

A company is identified by a company ID and described by its company name and the type of industry in which it exists. A company hires consultants, identified by a consultant id and described by consultant name and specialty. Assume that a consultant can work for only one company at a time. We need to keep track of consulting engagements. The hourly rate the consultant charges may differ, depending upon the company.

Suppose you wish to model the activities that take place at a park. You know that anyone who wishes to reserve the park must have someone responsible, for whom you need reasonable contact information. For each activity you also want to know the type of activity it is (e.g., sports game, resident meeting) to ensure that the activity is approved for the park. For each activity you want to record the starting and ending time and any special equipment that is required, as where the activity will be held in the park to ensure the equipment is delivered to the correct location.

Create a conceptual model for a database to support this park.