

Information and Computer Science Department
Spring Semester 072
ICS 324 - Database Systems
Entity Relationship Model Exercises

Objectives

The objective of this lab is to draw an Entity Relationship (ER) diagram from a given specification (or problem statement)

Outcomes

After completing this Lab, students are expected to:

- Be able to draw manually an ER diagram from a given specification (or problem statement).
- Be able to draw an ER diagram using TOAD Data Modeler.

Lab Exercises

1. (Exercise 3.32 page 99) Consider a *mail order* database in which employees take orders for parts from customers. The data requirements are summarized as follows:
 - The mail order company has employees identified by a unique employee number, their first and last names, and a zip code where they are located.
 - The customers of the company are identified by a unique customer number, their first and last names, and a zip code where they are located.
 - The parts being sold by the company are identified by a unique part number, a part name, their price, and quantity in stock.
 - Orders placed by customers are taken by employees and are given a unique order number. Each order may contain certain quantities of one or more parts and their received date as well as a shipped date is recorded.

Design an Entity-Relationship diagram for the mail order database and enter the design using a data modeling tool such as TOAD.

2. (Exercise 3.33 page 99-100) Consider a *movie* database in which data is recorded about the movie industry. The data requirements are summarized as follows:
 - Movies are identified by their title and year of release. They have a length in minutes. They also have a studio that produces the movie and are classified under one or more genres (such as horror, action, drama etc). Movies are directed by one or more directors and have one or more actors acting in them. The movie also has a plot outline. Each movie also has zero or more quotable quotes which are spoken by a particular actor acting in the movie.
 - Actors are identified by their names and date of birth and act in one or more movies. Each actor has a role in the movie.
 - Directors are also identified by their names and date of birth and direct one or more movies. It is possible for a director to act in a movie (not necessarily in a movie they direct).

- Studios are identified by their names and have an address. They produce one or more movies.

Design an Entity-Relationship diagram for the movie order database and enter the design using a data modeling tool such as TOAD.