Faculty of Science, Engineering and Technology

Fundamentals of Data Management

Pass Tasks 3.1: Entity Relationship Modelling

Overview

In this tutorial, you will practice reading and analyzing user requirements / business rules and design an Entity Relationship Model and present it in an Entity Relationship Diagram.

Purpose

Learn to read and analyse user requirements and design ER model

Task

Read, analyse and design the ER Model for the business scenarios presented in the tasks below. You can choose ER Diagrams (Chen or Crow's feet) or UML diagrams to show your solutions.

Time

This task should be completed in your third lab class and submitted for feedback in the third lab or at the beginning of lab 4.

Resources

- Online module (from Canvas)
- Connolly & Begg, Database Systems, Chapters 12 and 16
- Stephens, Beginning Database Design Solutions, http://goo.gl/bRCaxF

Online resources

- Chen notation tutorial

http://creately.com/blog/diagrams/er-diagrams-tutorial/

- Crow's feet notation tutorial

http://www.w3computing.com/systemsanalysis/systems-entity-relationship-model/

Feedback

Discuss your solutions with the tutorial instructor.

Next

Get started on module 4.

Pass Tasks 3.1 — Submission Details and Assessment Criteria

Document your solutions to the tasks using a word processor or other suitable editor. Upload the document to Doubtfire as pdf. The tutors will discuss them with you in the lab.

Subtask 3.1.5

Consider the following:

a) Each company operates four departments, and each department belongs to one company.
b) Each department in in part (a) employs one or more employees, and each employee works for one department.
c) Each of the employees in part (b) may or may not have one or more dependents, and each dependent belongs to one employee.
d) Each employee in part (c) may or may not have an employment history.
e) Draw a complete diagram for a-d

Add the solution to your lab report.

Credit Task 3.2 − Advanced ER Modelling

Subtask 3.2.1

Consider the following user requirements which describe a MOVIE database system in a movie industry.
Each movie is identified by title and year of release. Each movie has a length in minutes. Each has a production company, and each is classified under one or more genres (such as horror, action, drama, and so forth). Each movie has one or more directors and one or more actors appear in it. Each movie also has a plot outline. Finally, each movie has zero or more quotable quotes, each of which is spoken by a particular actor appearing in the movie.
Actors are identified by name and date of birth and appear in one or more movies. Each actor has a role in the movie.
Directors are also identified by name and date of birth and direct one or more movies. Production companies are identified by name and each has an address. A production company produces one or more movies.

Draw a diagram for the movie system above. Note that a good design will include several weak entities.

Add the solution to your lab report.