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.

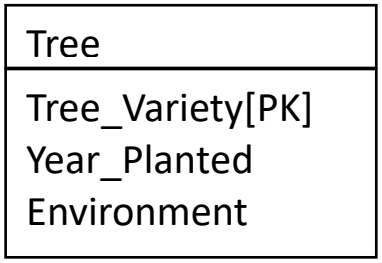
Pass Tasks 3.1 — Submission Details and Assessment Criteria

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.

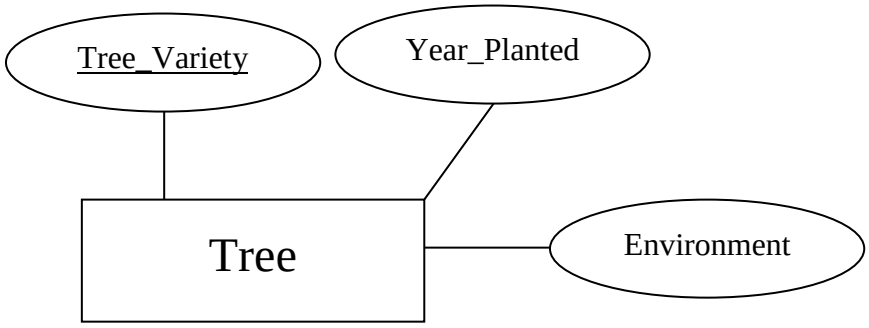
Example 3.1.1 – Entity Relationship Model

Jane is an enthusiastic gardener. In recent years, she has begun to plant trees, and she is recording which trees thrive in which conditions. In 2005, she planted an Ash tree in a sunny, dry spot exposed to wind. It grew very slowly, but did not die. In 2006, she planted a lemon-scented gum in a sunny, dry spot sheltered from wind. In 2007 she planted a Japanese Maple in a wet spot with little sun and lots of exposure to wind. It died soon after.

How can this information be expressed in Entity Relationship Model?
To express the above scenario in an ERM, the following step s are followed:
Step 1: Identify the Entity types
There is only one Entity in the Scenario which is Tree
Step 2: Identify the associated attributes
The associated attributes are:
Tree_Variety
Year_Planted
Environment
Step 3: Identify the Primary Key
The primary key for the Tree Entity is (Tree_Variety)
Step 4: Draw the ER Diagram with the UML notation



We may also draw the ER Diagram with the Chen notation as follows:



Subtask 3.1.1

This is the reading list of James Nguyen. James read "Fifty shades of grey" by E. L. James in May 2016, did not like it very much, then "The grass is singing" by Doris Lessing in June 2016, enjoyed it quite a bit, then read Bill Bryson's "A short history of nearly everything" in July 2016 and found it very informative. James plans to read "JSON in 24 hours" by Peter Settler later in the year for work, then perhaps Peter Hoeg's "Miss Smilla's feeling for snow" for entertainment.

With the aid of the example above, design the ER Model for the above scenario and draw the ERD (Note: Use any of the notations)

Document the solution and upload.