Database Foundations

4-1
Oracle SQL Developer Data Modeler
Road Map

Oracle SQL Developer Data Modeler

Converting a Logical Model to a Relational Model

You are here
Objectives

This lesson covers the following objectives:

• Use Oracle SQL Developer Data Modeler to create:
  – Entities, attributes, and UIDs with correct optionality and cardinality
  – Supertype and subtype entities
  – Arc, hierarchical, barred, and recursive relationships
Introduction to Oracle SQL Developer Data Modeler

Oracle SQL Developer Data Modeler offers a range of data and database modeling capabilities, enabling you to:

• Capture business rules and information
• Create process, logical, relational, and physical models
• Store metadata information in XML files
• Synchronize the relational model with the data dictionary
Oracle SQL Developer Data Modeler Interface: Example Overview
Building an ERD by Using Oracle SQL Developer Data Modeler

- a. Create entities.
- b. Create attributes and UIDs.
- c. Define relationship between entities.
- d. Set the source and target values for the relationship.
Case Scenario: An Introduction

Sean, I would like you to create a simplified library database to manage the number of reference books in our department. As a first step, can you build a logical model using Oracle SQL Developer Data Modeler that we have installed in our student machines?

Faculty

Glad to. I’ll start by identifying the entities and their attributes. After that, I can use the Oracle SQL Developer Data Modeler tool to build the logical model.

Student
Case Scenario: Identifying Entities

- Authors
- Books
- Members
- Publishers
- Book Transactions
Building an Entity Relationship Diagram

1. Navigate to the Logical Tab
2. Create an Entity
3. Add Attributes to the Entity
4. Set the Unique Identifiers
5. Define the Relationship Between the Entities
Building an ERD: Step 1

1. Navigate to the Logical tab.
Building an ERD: Step 2

2. Create an entity.
Building an ERD: Step 3

3. Add attributes to the entity.
Editing the Attribute Properties
Building an ERD: Step 4

4. Set the UID.
Building an ERD: Step 5

5. Define the relationships between the entities.
Building an ERD: Step 6

6. Set the source and target values for the relationship.
Case Scenario: Entity Types

Sean, I was wondering if we could include new types of membership categories such as:
  • Student Membership
  • Faculty Membership
  • Corporate Membership

This can definitely be achieved. I can create a common entity that would hold membership details that are common to all the three membership categories. This would be a supertype entity. The specific membership categories would inherit the properties of the supertype entity, in addition to their own specific attributes. Hence, the specific membership category would be a subtype entity.
Creating the Supertype Entity

MEMBERS

FACULTY        STUDENT        CORPORATE

Supertype

Subtype
Creating the Arc Relationship
Creating the Hierarchical Relationship

1:N Relationship

Oracle SQL Developer Data Modeler
Creating the Barred Relationship

Identifying Relationship
Creating the Recursive Relationship

In a relationship, if the same entity participates more than once, it is termed a recursive relationship.
Summary

In this lesson, you should have learned how to:

• Use Oracle SQL Developer Data Modeler to create:
  – Entities, attributes, and UIDs with correct optionality and cardinality
  – Supertype and subtype entities
  – Arc, hierarchical, barred, and recursive relationships