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Database Foundations

4-2

Convert a Logical Model to a Relational Model



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:

- Describe how to convert a logical model to a relational model in Oracle SQL Developer Data Modeler
- List the steps to convert a logical model to a relational model



Data Modeling Approaches



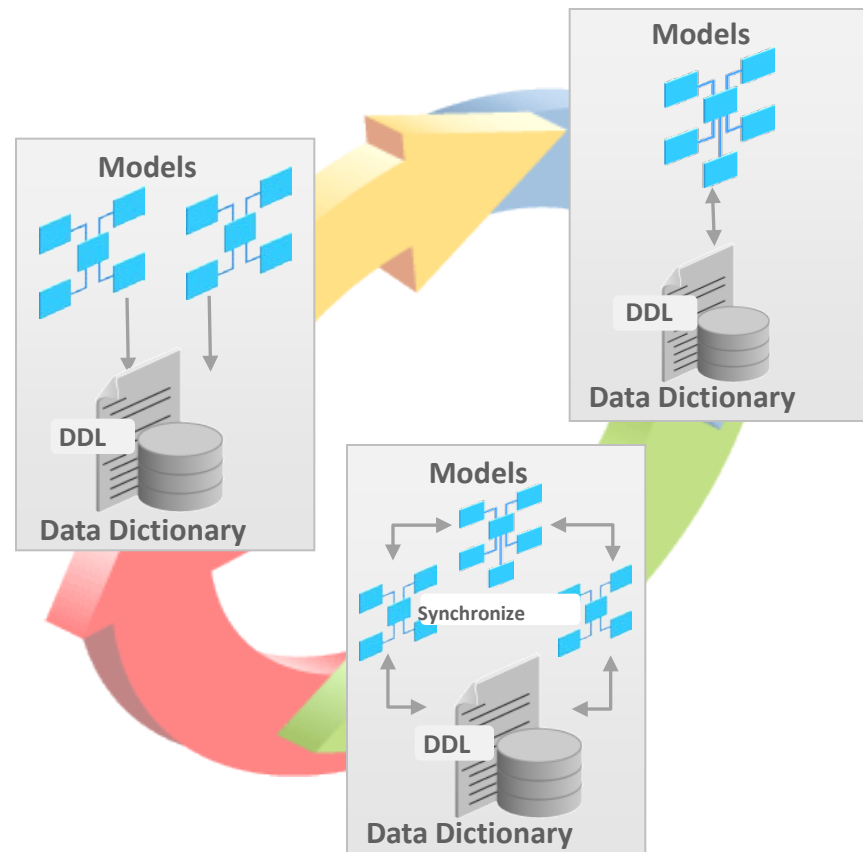
Top-Down Modeling

Bottom-Up Modeling

Target Modeling

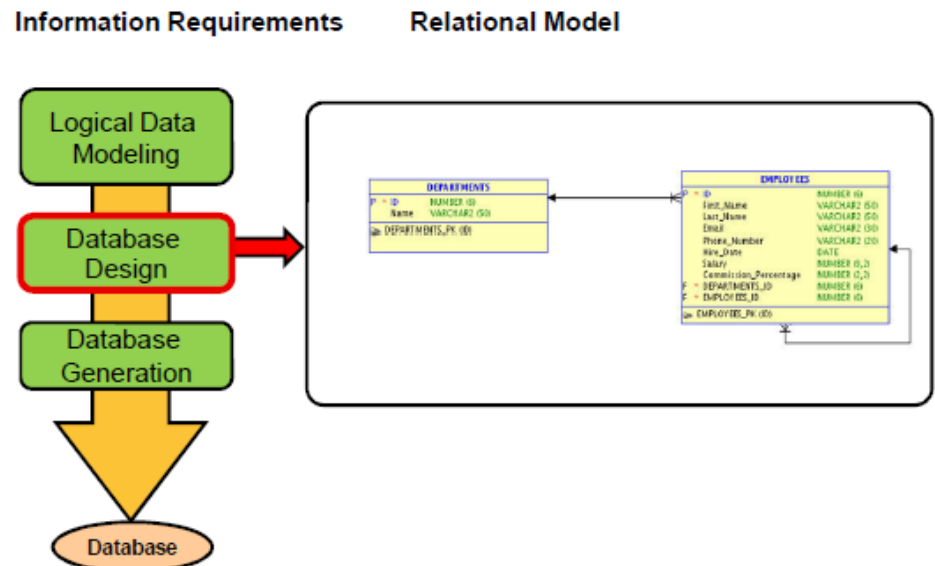
Engineering a Data Model

- Forward engineering
- Reverse engineering



Benefits of Creating a Relational Model

- A relational model:
 - Is closer to the implementation solution.
 - Facilitates discussion.
 - Forms the basis for the physical database design.
- The ideal model can be adapted to a relational database management system (RDBMS) model.



Overview of Relational Database

Table: MEMBERS

MEMBER_ID	FIRST_NAME	LAST_NAME	STREET_ADDRESS	CITY	STATE	ZIP
101	Jones	Smith	12 Oxford Street	Hudson	MA	01234

↑
Primary
Key

└──┬──┘
Column

└──┬──┘
Row

Table in the relational model

MEMBERS	
P * MEMBER_ID	VARCHAR2
FIRST_NAME	VARCHAR2
LAST_NAME	VARCHAR2
STREET_ADDRESS	VARCHAR2
CITY	VARCHAR2
STATE	VARCHAR2
ZIP	VARCHAR2
MEMBERS_PK (MEMBER_ID)	

Terminology Mapping

ANALYSIS	DESIGN
Logical Model	Relational Model
Entity	Table
Attribute	Column
Instance	Row
Primary UID	Primary Key
Secondary UID	Unique Constraint
Relationship	Foreign Key
Business Constraints	Check Constraints

Case Scenario: Building a Relational Model



Faculty

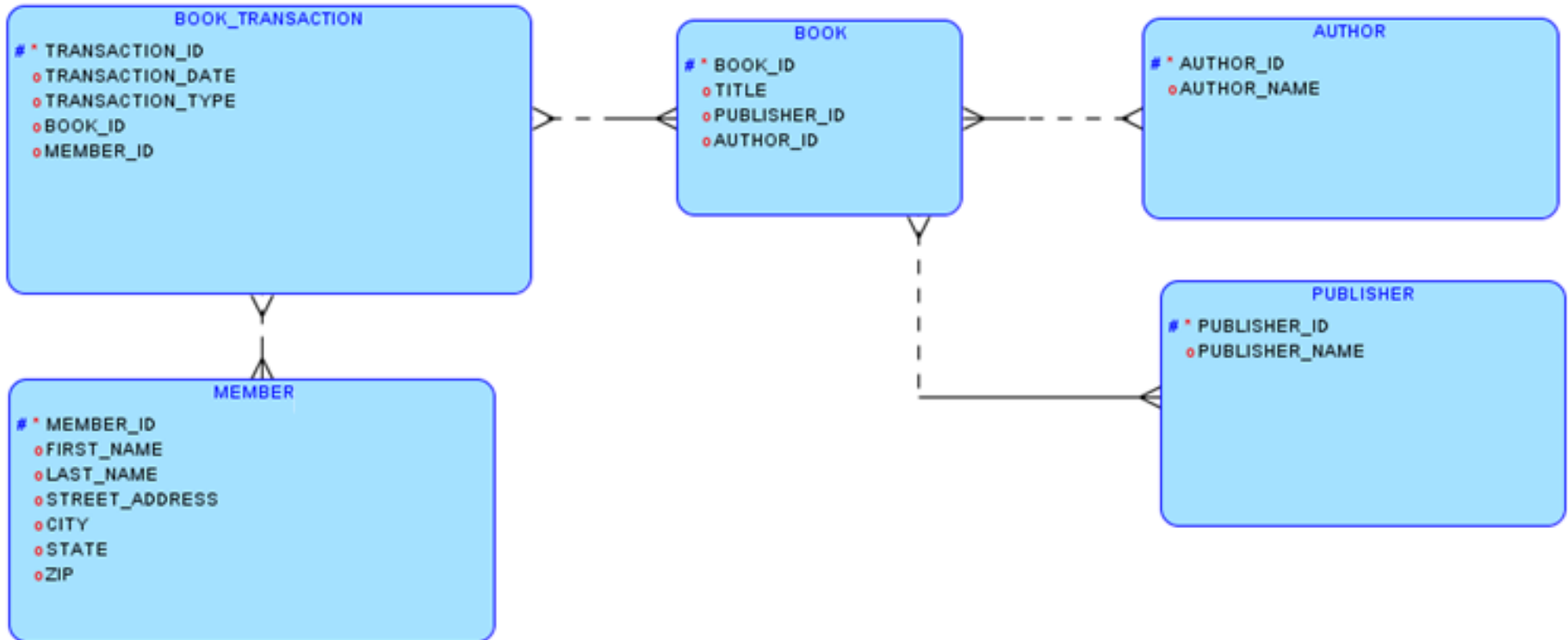
Sean, is it possible to create a relational model from an existing logical model by using the Oracle SQL Developer Data Modeler tool?

Absolutely. Let me list the steps involved in forward engineering a logical model to a relational model by using the Oracle SQL Developer Data Modeler tool.

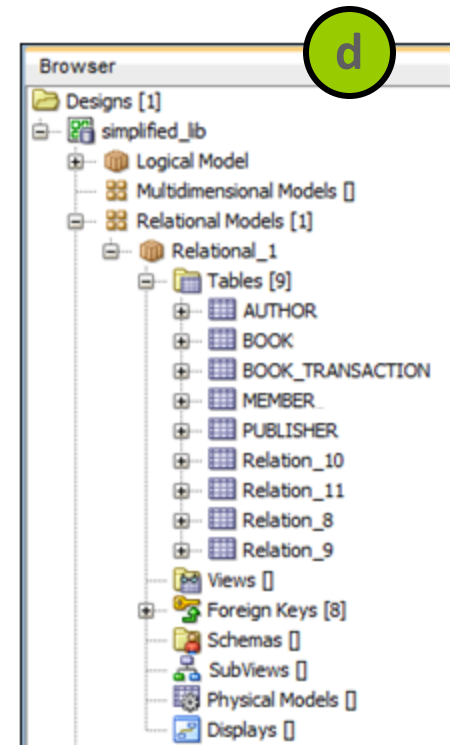
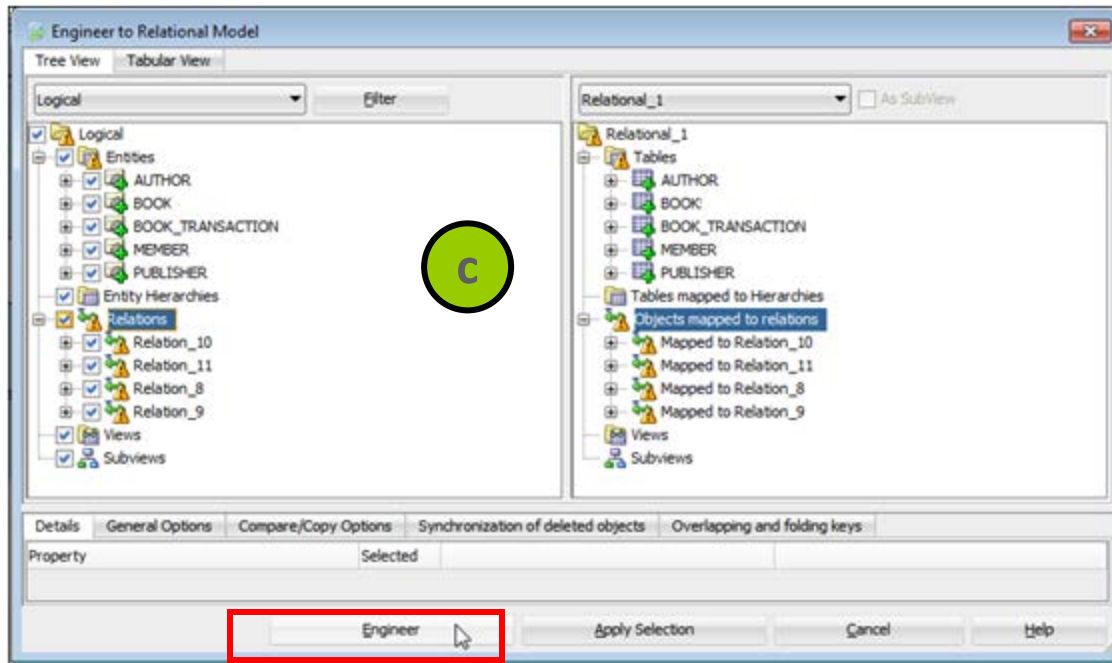
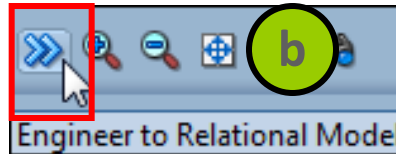
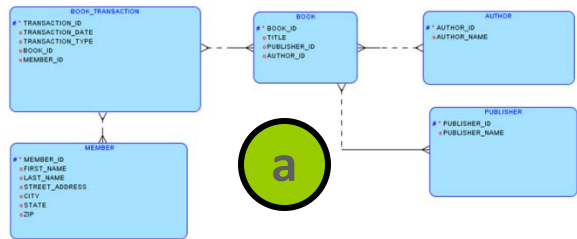


Student

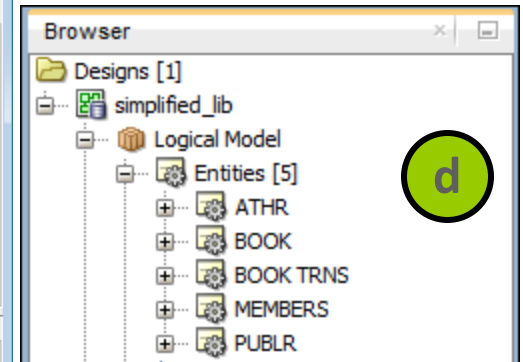
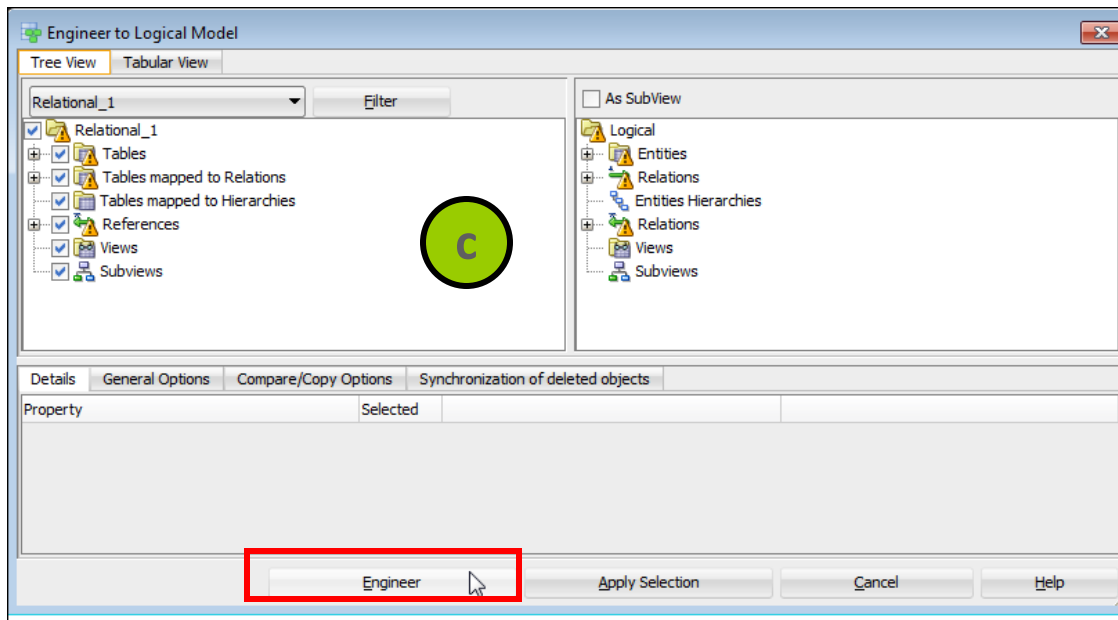
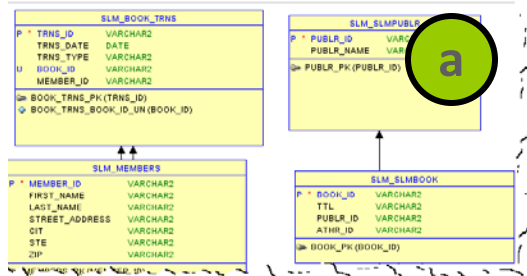
Case Scenario: Simplified Library Database ERD



Engineering a Relational Model



Reverse Engineering a Relational Model



Summary

In this lesson, you should have learned how to:

- Describe how to convert a logical model to a relational model in Oracle SQL Developer Data Modeler
- List the steps to convert a logical model to a relational model



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