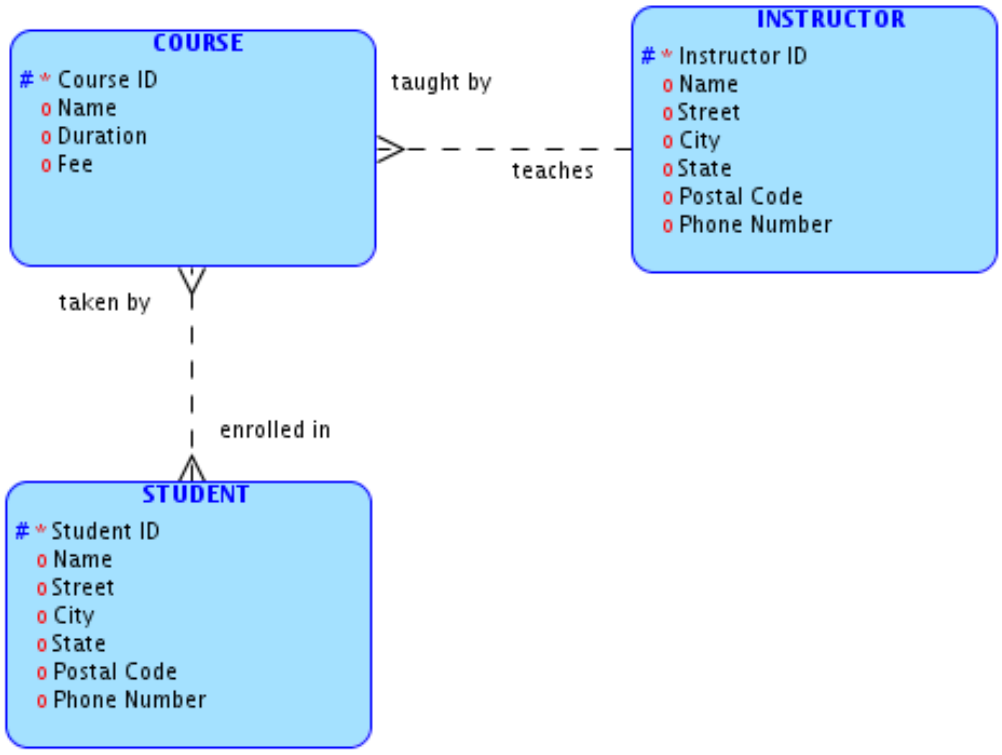
Practices for Lesson 9: Using Oracle SQL Developer Data Modeler to Create an Entity Relationship Diagram

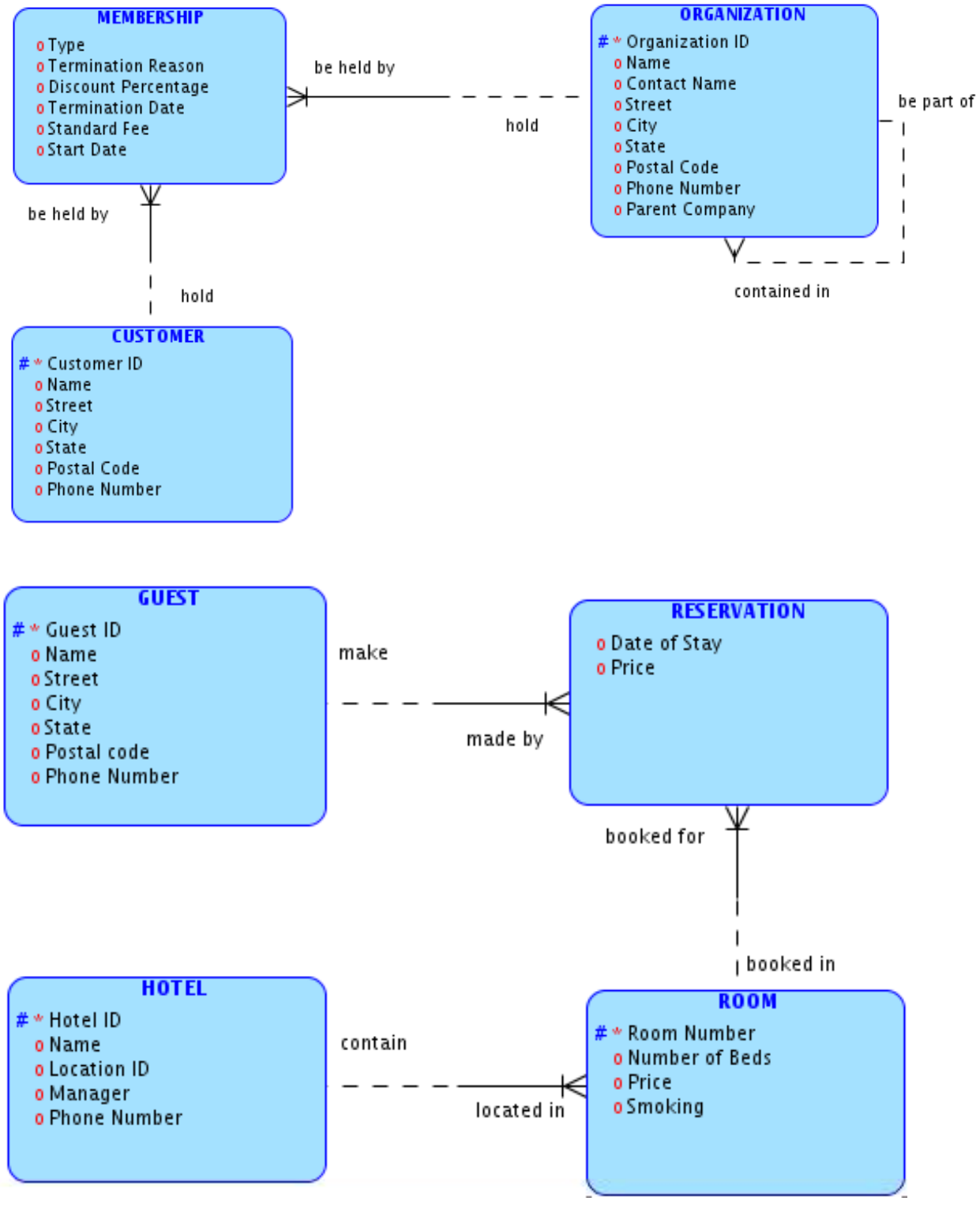
Chapter 9

Practice 9-1: Build an ERD in Oracle SQL Developer Data Modeler

Task

In this practice, you build the following ERDs in Oracle SQL Developer Data Modeler. Build a subview and display for each ERD.




MEMBERSHIP
Type
Termination Reason
Discount Percentage
Termination Date
Standard Fee
Start Date
be held by
hold
be held by
hold
ORGANIZATION
Organization ID
Name
Contact Name
Street
City
State
Postal Code
Phone Number
Parent Company
be part of
contained in
CUSTOMER
Customer ID
Name
Street
City
State
Postal Code
Phone Number
GUEST
Guest ID
Name
Street
City
State
Postal code
Phone Number
make
made by
RESERVATION
Date of Stay
Price
booked for
booked in
HOTEL
Hotel ID
Name
Location ID
Manager
Phone Number
contain
located in
ROOM
Room Number
Number of Beds
Price
Smoking

Solution 9-1: Build an ERD in Oracle SQL Developer Data Modeler

Do the following in Oracle SQL Developer Data Modeler to build the class exercise:

1. Close any models that you currently have open. Select **File > Close**.
2. Click the **Logical** tab.
3. Click the **New Entity**  icon, and click anywhere in the white space of the entity relationship diagram.
4. Enter `Course` for the name, and then click **Attributes** in the left navigator.
5. Click the **Add**  icon.
6. Enter `Course ID` for the name, select the **Primary UID** check box, and then click the **Add**  icon.
7. Enter `Name` for the name, and then click the **Add**  icon.
8. Enter `Duration` for the name, and then click the **Add**  icon.
9. Enter `Fee` for the name, and then click **OK**.
10. Click in the white space of the entity relationship diagram.
11. Enter `Instructor` for the name, and then click **Attributes** in the left navigator.
12. Click the **Add**  icon.
13. Enter `Instructor ID` for the name, select the **Primary UID** check box, and then click the **Add**  icon.
14. Enter `Name` for the name, and then click the **Add**  icon.
15. Enter `Street` for the name, and then click the **Add**  icon.
16. Enter `City` for the name, and then click the **Add**  icon.
17. Enter `State` for the name, and then click the **Add**  icon.
18. Enter `Postal Code` for the name, and then click the **Add**  icon.
19. Enter `Phone Number` for the name, and then click **OK**.
20. Click in the white space of the entity relationship diagram.
21. Enter `Student` for the name, and click **Attributes** in the left navigator.
22. Click the **Add**  icon.

23. Enter `Student ID` for the name, select the **Primary UID** check box, and then click the **Add**  icon.
24. Enter `Name` for the name, and then click the **Add**  icon.
25. Enter `Street` for the name, and then click the **Add**  icon.
26. Enter `City` for the name, and then click the **Add**  icon.
27. Enter `State` for the name, and then click the **Add**  icon.
28. Enter `Postal Code` for the name, and then click the **Add**  icon.
29. Enter `Phone Number` for the name, and then click **OK**.
30. Your entities and attributes have been created. Click the **New 1:N Relation**  icon.
31. Click the `INSTRUCTOR` entity, and then click the `COURSE` entity
32. Enter `teaches` for **Name on Source** and `taught by` for **Name on Target**, and then click **OK**.
33. If your relationship names do not appear, perform the following steps:
    a) Right-click in the white space of the entity relationship diagram.
    b) Select **Show > Labels**.
34. Create another relationship between `COURSE` and `STUDENT`. Click the **New M:N Relation**  icon.
35. Click the `COURSE` entity, and then click the `STUDENT` entity.
36. Enter `taken by` for **Name on Source** and `enrolled in` for **Name on Target**, and then click **OK**.
37. To create a subview of the entities, select all the objects on the diagram and right-click an entity. Select **Create SubView from selected**.
38. You may need to move some entities around to maximize space on your screen and to minimize the crossing of lines.
39. You may also want to straighten your lines or create an elbow to move a line. To do this, remember to turn off Auto Route first.

To produce the diagram from Practice 8-1 in Oracle SQL Developer Data Modeler, you go through the same steps as above. In this case, however, you want to create some identifying relationships and a recursive relationship.

You can create an identifying relationship in one of two ways:

1. To create the identifying relationship between `CUSTOMER` and `MEMBERSHIP` using the **1:N identifying relationship** icon, perform the following steps:
    a. Click the **New 1:N Relation Identifying**  icon.

b. Click the `CUSTOMER` entity, and then click the `MEMBERSHIP` entity.

c. Enter `hold` for **Name of Source** and `be held by` for **Name of Target**, and then click **OK**.

2. To create the identifying relationship between `ORGANIZATION` and `MEMBERSHIP` by specifying the UID in the relationship, perform the following steps:

   a. Click the **New 1:N Relation Identifying**  icon.

   b. Select the `ORGANIZATION` entity, and then click the `MEMBERSHIP` entity.

   c. Enter `hold` for **Name of Source** and `be held by` for **Name of Target**, select the **Identifying** check box, and then click **OK**.

To create the recursive relationship, click the icon for the relationship that you want to create, in this case, the **New 1:N Relation** icon, and then click the `ORGANIZATION` entity two times. Specify the source and target names.

To produce the diagram for Practice 8-2 in Oracle SQL Developer, perform the preceding steps discussed.