Object-Relational Mapping with Java, JPA and Oracle

“Lucy, Ricky, Ethel and Fred start a business”

(DB Topics Version)

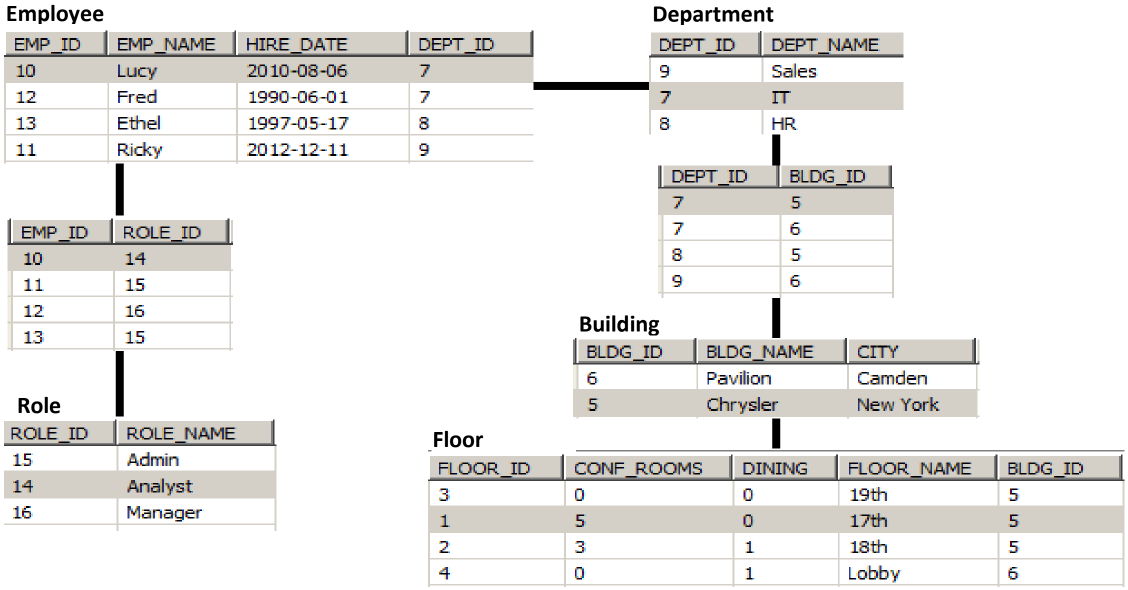
Instructions

1. Lucy and Ricky join Fred and Ethel in developing a building management service. Here are their roles, and information on the buildings they manage.

Employee	Hire Date	Dept	Role
Lucy	06-Aug-2010	IT	Analyst
Ricky	11-Dec-2012	Sales	Admin
Fred	01-Jun-1990	IT	Manager
Ethel	17-May-1997	HR	Admin

Building	City	Depts	Floors
Chrysler	New York	IT, HR	• 17th: 5 conf rooms, no dining facility • 18th: 3 conf rooms, dining available • 19th: no conf rooms, no dining facility
Pavilion	Camden	IT, Sales	• Lobby: no conf rooms, dining facility

2. Relationally, you realize this will result in the following physical data model:



Employee

EMP_ID	EMP_NAME	HIRE_DATE	DEPT_ID
10	Lucy	2010-08-06	7
12	Fred	1990-06-01	7
13	Ethel	1997-05-17	8
11	Ricky	2012-12-11	9

EMP_ID	ROLE_ID
10	14
11	15
12	16
13	15

Role

ROLE_ID	ROLE_NAME
15	Admin
14	Analyst
16	Manager

Department

DEPT_ID	DEPT_NAME
9	Sales
7	IT
8	HR

DEPT_ID	BLDG_ID
7	5
7	6
8	5
9	6

Building

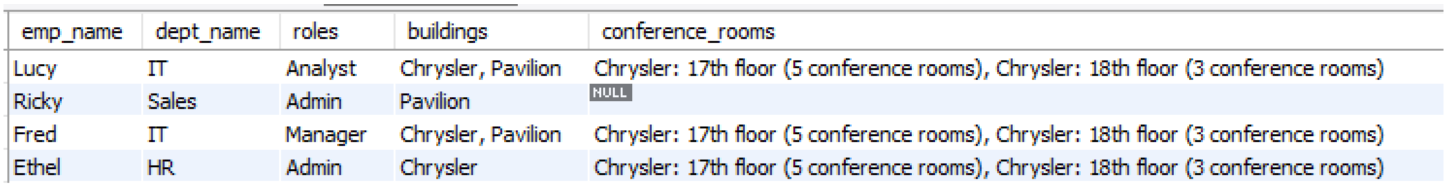
BLDG_ID	BLDG_NAME	CITY
6	Pavilion	Camden
5	Chrysler	New York

Floor

FLOOR_ID	CONF_ROOMS	DINING	FLOOR_NAME	BLDG_ID
3	0	0	19th	5
1	5	0	17th	5
2	3	1	18th	5
4	0	1	Lobby	6

3. Build these classes with the appropriate JPA Annotations. Create a program to create Entities and persist the data in MySQL.

4. Then create an SQL query to return information on each employee and what buildings they are affiliated with and conference room information for those buildings. HINT: Remember GROUP_CONCATs and correlated subqueries.



emp_name	dept_name	roles	buildings	conference_rooms
Lucy	IT	Analyst	Chrysler, Pavilion	Chrysler: 17th floor (5 conference rooms), Chrysler: 18th floor (3 conference rooms)
Ricky	Sales	Admin	Pavilion	NULL
Fred	IT	Manager	Chrysler, Pavilion	Chrysler: 17th floor (5 conference rooms), Chrysler: 18th floor (3 conference rooms)
Ethel	HR	Admin	Chrysler	Chrysler: 17th floor (5 conference rooms), Chrysler: 18th floor (3 conference rooms)