CS 6360.002/003 - Assignment 2

Due Date: October 3, 2017, 11:59 PM

Part-1

1. Create tables of LIBRARY database by using below schema. Define required constraints on given tables. Define triggered actions that will be attached to each foreign key constraint.

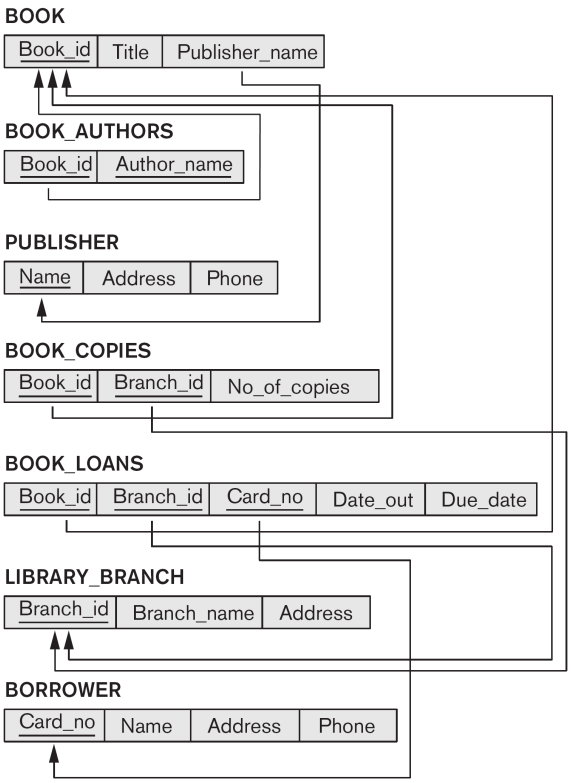

Figure 4.6
A relational database schema for a LIBRARY database.

* Add one additional attribute to BOOK_LOANS table with name “Return_date”. When a book is borrowed, Return_date should take initial value of NULL. When the book is returned, Return_date will be updated with the date the book is returned. You can add the attribute to table while creating the table.

Part-2

1. Write following queries in SQL by using COMPANY database.

a. For each department whose average employee salary is more than $30,000, retrieve the department name and the number of employees working for that department.

b. Same as a, except output the number of male employees instead of the number of employees.

c. Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees.

d. Retrieve the names of employees who make at least $10,000 more than the employee who is paid the least in the company.

e. Retrieve the names of employees who is making least in their departments and have more than one dependent. (solve using correlated nested queries)

2. Write following queries in SQL by using LIBRARY database.

a. Find all books (book titles) that are borrowed from ‘Richardson’ library branch.

b. Find all books (book titles) that are overdue. (Books become overdue if the Due_date is a date in the past and Return_date is null)

c. For each library branch (branch name), find total number of books that are overdue.

d. How many copies of the book titled “Fundamentals of Database Design” are owned by each library branch?

e. Retrieve the names of all borrowers who do not have any books checked out.

3. Specify following views in SQL by using COMPANY database. Solve questions using correlated nested queries (except a).

a. A view that has the department name, manager name and manager salary for every department.

b. A view that has the department name, its manager's name, number of employees working in that department, and the number of projects controlled by that department (for each department).

c. A view that has the project name, controlling department name, number of employees working on the project, and the total hours per week they work on the project (for each project).

d. A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.

e. A view that has the employee name, employee salary, department that the employee works in, department manager name, manager salary, and average salary for the department.

How to connect to Oracle server?

Connect to the Oracle Database server using “SQL Developer” program with following parameters:

User Name: yournetid
Password: yournetid
Host Name: onecore.myds.me
Port: 1521
SID: xe

You can download SQL Developer from below link.
http://www.oracle.com/technetwork/developer-tools/sql-developer/downloads/index.html

Deliverables:

1. .sql or .pdf file that includes all SQL statements for Part-1 and Part-2.

2. SQL statements for Part-1 should be executed on Oracle database. Thus, you will have LIBRARY database tables created on your account.