

Lab week 7 (ISYS2120 sem2 2022)

Welcome to week 7's lab. This week we are going to focus on access control, views and check constraints. There is also time to work on Asst2 and show your group progress to the lab demonstrator, for feedback, and show and individual progress to gain marks.

A. Access control

Consider the following schema of relations, all of which are owned by John, and initially, no-one else has any rights to access these relations.

Book (isbn, title, publisher, publicationYear)

Author (aname, birthdate)

Publisher (pname, address)

Wrote (isbn, aname) // this book was (perhaps co-)written by this author

(a) What command is needed, if we want to permit Albert to find out about Books

(b) What command is needed, if we want to permit Bob to update the database by recording information about additional Books, but he can't change or inspect existing information. [Further discussion: what might be a difficulty arising from this policy, for Bob (eg if he wants to check what he has just done?)]

(c) What command is needed, if we want to permit Chenyi to correct mistakes among the author birthdates

(d) What command is needed, if we want to permit Dora to see the information for books whose publisher is "WH Smith" (but not other books) [Hint: create a view]

(e) What command is needed, if we want to permit Emily to see *how many* books each publisher has plans to issue in the future (ie books with publicationyear > 2022), but we don't want Dora to be able to see the specifics of the books themselves. [Hint: create a view]

B. Integrity Constraints

First, give some sample CREATE TABLE Statements to represent the schema outlined in A), in which all the primary key and foreign keys are represented as named constraints.

(a) Based on the above, show a CREATE TABLE, ALTER TABLE or CREATE ASSERTION statement enforce that every book you may have in the system is published from year 1997 to 2022,

(b) Now we discover that the publisher BrowseBooks ceased operations in 2015, so any book with this publisher must have a publication year no later than that. How can we enforce that?

(c) Suppose we had a dbms that supported subqueries in CHECK constraints. How would we indicate that the publicationyear of every book should be at least 10 years after the year of the birthdate of any author of the book.

C. Time to work on Assignment 2, get feedback from lab demonstrator, and show individual progress

Please bring to lab the combined group's latest version of the high-level ER diagram, showing the entity sets and relationship sets you propose to have. As well, each member should show one relationship diamond from the diagram, with how the edges are marked (for showing cardinality and participation), and also the relationship's attributes if any... Show these to the lab demonstrator, when they speak with your group. If some member can't attend the lab, they can upload a document with their part of a diagram in Canvas for the week 7 individual contribution task, and let the demonstrator know (via other members) to find it and award marks for it.

In the time when the demonstrator is with other groups, you should make plans for completing your combined submission, for example, by allocating responsibility for filling in details for the other entity sets and the relationships (not yet done), and deciding on the process you will follow to combine all the material, check it for internal consistency [both content and presentation] and then get it submitted before the due date.

Before the end of the week

Before Sunday September 18, you need to finish the assessments that are due: Assignment 2 (one member of the group should upload this file with the full E-R diagram, and other discussion as you feel worth including). As well, please make sure that you complete SQL Tasks 10, 11, 12 [delayed from last week], SQL Task 13, Quiz6 [delayed from last week] and Quiz 7.