

ICS 132: Organizational Information Systems

Assignment #2: Database Queries and Design

This assignment will be due at the lecture on 02/04/02.

A. SQL Queries

At the URL <http://drzaius.ics.uci.edu/example/sql>, you'll find a web page which allows you to enter SQL queries to access a database with details of books. The database consists of three tables, as follows:

Table 1: "BOOKS"

ISBN	Title	Pages	Price
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Table 2: "AUTHORS"

ISBN	Name
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Table 3: "TOPICS"

ISBN	Topic
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Note that some books may have multiple authors, or be about multiple topics.

Write SQL queries to answer the following questions. (You should provide both the query and the result. The easiest way to do this is to print out the results page, which lists the query too.)

1. Which books cost over \$100?
2. Which authors have written books about cognitive science?
3. How many authors have written about each topic?
4. What are the average prices of books on each topic?
5. Which book has the best value, for number of pages?

B. Database Normalization

Consider a car rental database arranged as a single table, with the following fields:

Table 4: Car Rental Database

Car licence #	Car model	Car color	Customer #1 licence no	Customer #1 name	Customer #1 insurance?	Customer #2 licence no
Customer #2 name	Customer #2 insurance?	Customer #3 licence no	Customer #3 name?	Customer #3 insurance?	Dated rented	Date returned

(I know it looks like multiple rows, but that's meant to be a single table with 14 columns.) The "insurance?" fields are booleans to indicate whether the customer has taken insurance. Presume that any given car is rented out at most once per day.

Show how you would successively revise this table to be in first, second, and then third normal form. Indicate which are the key fields in each table.