

Abstract:

A common problem for university relational database courses is to construct effective databases for instructions and assignments. Highly simplified "toy" databases are easily available for teaching, learning, and practicing. However, they do not reflect the complexity and practical considerations that students encounter in real-world projects after their graduation. On the other hand, production databases may contain too much domain nuances and complexity to be effectively used as a learning tool. Sakila is a semi-realistic, high quality, open source, and highly available database provided by MySQL. This paper describes the use of Sakila as a unified platform to support instructions and multiple assignments of a graduate database course for five semesters. Based on seven surveys with 186 responses, the paper discusses our experience using Sakila. We find this approach promising, and students in general find it more useful and interesting than the highly simplified databases developed by the instructor, or obtained from textbooks. We constructed a collection of 124 problems with suggested solutions on the topics of database modeling and normalization, SQL query, view, stored function, stored procedure, trigger, database Web-driven application development with PHP/MySQL, Relational Algebra using an interpreter, Relational Calculus, XML generation, XPath, and XQuery. This collection is available to Information Systems (IS) educators for adoption or adaptation as assignments, examples, and examination questions to support different database courses.

Citation:

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