

Introduction to Databases, Study group assignment 1

Design a database for the system described below. Figure out some test queries to test your database. The description below is not complete. Use your imagination to add details.

Library database

A library has a collection of 120000 items. Most of them, but not all, may be borrowed. There are about 80000 different titles. Thus some title has multiple copies. Each title has an identifier, a name and a type. There may be a lot of descriptive information attached to each title. These may include information about the authors, the publisher and the number of pages. Each descriptive piece of data has a name. For example, the name of the publisher information is 'PUBL'. What descriptive data may be used in describing a title depends on the type of the title. The descriptive data used for books may not be the same than the ones used for movies. Some of the elements are mandatory, some are optional. Introduction of new descriptive data elements should be made possible without changing the structure of the database.

There are also item specific information that do not depend on the type of the item. They include where the item is located (department, compartment, shelf) and how, when and with what price it has been purchased. Each item has a unique number.

The library has about 20000 customers. Standard customer information like name and address should be registered of all customers. Each customer has been assigned a unique customer identifier. Customers may borrow items from the library. They may also make reservations for the titles. When an item is returned the system should inform the first customer in reservation queue of the return. When an item is borrowed the date of borrowing and also the latest date of return is registered. If the item is damaged a marking is made in the borrowing record. Records of the borrowing are never deleted.