

Spring `15

Database Systems: Theory and Programming

Dr. Hristescu

Term Project: Bookseller Database Systems**Timeline:** Assigned: Monday, March 30Wednesday, April 1: Declare working groups ($1 \leq \text{sizeof}(\text{group}) \leq 2$) **No sharing is allowed between groups.**

Wednesday, April 1: Finalize details in class

Monday, April 13: Hand in description of your project design (ER diagram, relational schema, description of solutions for required capabilities and reports)

Wednesday, April 15: Submit updated data in flat files to be shared by all groups

Monday, April 27 **5:15pm:** Hand in term project. **Hard deadline.**

Wednesday, April 29 and Monday, May 4: Project presentations in class

Specification

Bookseller AmazingBooks wishes to modernize the business by using computers to store important business information, and by offering on-line ordering. You have been hired to design the bookseller's database and system that manages it and optionally the interactive front-end that offers on-line ordering. AmazingBooks orders its books from publishers such as Addison Wesley. A 13-digit number known as its ISBN number uniquely identifies each book. AmazingBooks has many customers, several of whom return with new ordering requests. Information about customers and their order history should be stored. Your job also includes "mining" the database for information that would help the bookseller promote and improve their business (for instance finding books of "possible interest" to the customers). The bookseller also needs to keep track of best-selling books, books that don't sell well to be used in promotional offers, and active customers to be rewarded with special offers.

The bookseller stocks the inventory in a warehouse. As orders are shipped and the inventory depletes, the inventory must be restocked. Whenever a book's inventory reaches reorder levels, it must be reordered from its publisher. The database also keeps track of publishers. A customer can place an order even if not all the books are in stock. A customer order is shipped when all the books in the order are available.

Deliverables (front-end interactive system optional)**1. A system with the following capabilities:**

Through the Administrative component:

- a. Ability to view, add and modify customer information.
- b. Ability to view, add and modify publisher information.
- c. Ability to view, add and modify book information.
- d. Ability to view inventory.
- e. Ability to load information from flat files.

Through the Customer component:

- f. Ability to place an order.
- g. Ability to track an order.
- h. Ability to search for books using title or author or other criteria.

2. The following reports:

Through the Administrative component:

- i. List of books whose inventory is at reorder level.
- j. List of customers who have been "very active" (*) for whom special offers will be made.
- k. List of customers who have not been "active enough" (*) for who special offers will be made.
- l. List of books that are not selling "too well" (*), which might be offered as specials.
- m. List of books that may be priced "too high" (*) to be suggested for a price reduction.

Through the Customer component:

- a. A list of "bestselling" (*) books.
- b. A list of suggested books (based on customer's previous orders).
- c. Find the "most prolific" (*) authors.

Note: Only **non-trivial** solutions for the above reports will receive credit.

(*) Find a non-trivial measure for this.

3. After you are done with the required functionality consider doing the following for Extra Credit:

- d. Front end interactive system
 1. Find and generate interesting reports (other than the ones above) that would help AmazingBooks promote their

business. Explain why they are better and how they could help.