

AMAZOM

Amazom exclusively sells books through the Internet. Business is great and Roger Oman, Amazom's CEO, would like to redesign its database in order to have better management information available. Roger asks you, Enterprise System Designers (ESD), to help him redesign Amazom's database. You are allowed to interview any employee in his company. You ask Betty Bonka, one of your employees, to do the interviews for you. Here is the information Betty gathered for you regarding Amazom's "Product/Book Information Management" business process.

Betty. Let's start with books. What information would you like to know about your books?

Amazom. Well, we definitely would like to know a book's author(s) and publisher. We record at least one author for each book. Some books have more than ten authors; this is especially the case for computer books. We only consider authors that have published at least one book. We sell all seven Harry Potter books by J.K. Rowling (author). We categorize books into 25 categories – children, history, fiction, business, cardinalities, IT (Information Technology), etc. We record between one and three categories for each book (at least one; at most three). We currently sell more than 500 books of category "children." It is possible to have a category for which there are currently no books. We also record a book's publisher (publishing company). We would like to record information about as many publishers as possible. Stated differently, we might include a publisher even when we don't sell books from that publisher. We currently have more than 1000 titles (books) from Addison-Wesley (a publisher) for sale. There is exactly one publisher for each book. Communication with the publishing companies is very important – knowing what new books are available, when they will ship them to us, how many they will ship to us, etc. To get all the information we need, we work with representatives from each publisher. We ask each publisher for one main representative and a number of assisting representatives. Currently, we have a main representative and three assistant representatives for Irwin (a publisher) but we don't have any representatives for Microsoft Press (a publisher) yet. Each representative works for (is associated with) only one publisher. A representative is either a main representative or an assistant representative.

Betty. What other information would you like to record for books?

Amazom. We need to record additional information that helps us sell books. **First**, when customers (visitors of our web site) select a book, we provide them with a list of other books they might be interested in (customers who bought this book also bought ...). The table below shows all recommendations for the following four books: "Database for mere mortals"; "SQL for mere mortals"; "Microsoft Access Inside Out"; "The Complete Reference to Microsoft Access."

Recommendation List	
Book 1	Book 2
Databases for mere mortals	SQL for mere mortals
Databases for mere mortals	Microsoft Access Inside Out
The Complete Reference to Microsoft Access	Microsoft Access Inside Out

We would like to record this recommendation list in our database. Notice that the "Databases for mere mortals" book can be used as recommendation for the "SQL for mere mortals" book and that the "SQL for mere mortals" book can be used as recommendation for the "Databases for

mere mortals” book. We record that information only once, i.e. we **don’t** have to make the following entry:

Book 1	Book 2
SQL for mere mortals	Databases for mere mortals

A **second** tool that helps us selling more books is the publication of reviews. We record an (internal) ID, a text (the actual review), and a rating (1 to 5) for each review. Not all books have reviews but most books have many reviews. There is exactly one book per review. Most reviews are anonymous. However, reviewers are able to reveal their identity by creating a reviewer account. It is possible for a reviewer to create an account without submitting reviews. However, most reviewers submit many reviews after they have created an account. There is at most one reviewer per review.

We actually have some expert reviewers; i.e., we hire them and we pay them. Expert reviewers are asked to create a reviewer account and we assign them status “expert.” Non-expert reviewers (the ones discussed above) are assigned status “public.” Expert reviewers are asked to write reviews for specific books (and we record that information in the database). Each expert reviewer is asked to review at least one book. We have asked Jimmy Buffet, an expert reviewer, to review each of the Harry Potter books (i.e., seven books). No expert reviewer has been assigned to “What Not How. The Business Rules Approach to Application Development,” the latest book by C.J. Date (an author). We never assign more than one expert reviewer to the same book. We need to record areas of expertise for each expert reviewer. We use book categories as areas of expertise; i.e., we consider “area of expertise” and “book category” as the same thing. So, we have 25 areas of expertise – children, history, fiction, business, cardinalities, IT (Information Technology), etc. Each expert reviewer has at least one area of expertise. We don’t have an expert reviewer for the (book) category “cardinalities” yet. We have more than twenty expert reviewers for the “children” (book) category (area of expertise). Expert reviewers are paid per review but we’ll ignore payments for now. Also, we don’t ask expert reviewers to write favorable reviews.

A **third** tool to sell more books is the publication of “ranking lists” on our website. We currently publish more than 20 different ranking lists – “Top Sellers”, “Kids Favorites”, etc. We record a name and a description for each list. We further record the ranking per book per list. We like to keep a history for each list, so we also record the period to which the ranking applies. The period is defined by a start date and an end date. For example “the Historian” (a book) was ranked number 2 (ranking) on the “Top Sellers” list (a list) in March (the period between 3/1/2009 and 3/31/2009). Not all books appear on a list. Actually most don’t. There is at least one book for each list.

ASSIGNMENT

- **DRAW AN E-R DIAGRAM**
- **Note: Draw the relationship attributes**
Do NOT draw the entity attributes

List of attributes.

Book-price
Author-id
Publisher-address
Reviewer-status
RankingList-name
Representative-name
Book-RankingList-ranking
Representative-code
Book-RankingList-bdate
Book-isbn#
RankingList-description
Review-id
BookCategory-name
BookCategory-description

Publisher-code
Reviewer-id
Reviewer-email
Reviewer-name
Author-name
Review-text
Reviewer-nickname
Publisher-name
Review-rating
Book-RankingList-edate
Representative-phone-number
Author-email
Reviewer-location