

# Database Management Systems

## Trigger exercises

The following relations are given (primary keys are underlined, optional attributes are denoted with \*).

```
BOOK_PURCHASE_REQUEST(PRCode, CustomerCode, Date, ISBN, RequestedCopies)
BOOK_CATALOG(ISBN, Title, Author, Price)
WAREHOUSE_AVAILABILITY(ISBN, AvailableCopies)
PURCHASE_NOTIFICATION(NCode, Date, Message, Title, Author, Price)
AUTHOR_INFORMATION_REQUEST(ARCode, CustomerCode, Date, Author)
BOOK_SALES(ISBN, SoldCopies)
INFORMATION_NOTIFICATION(ARCode, CustomerCode, Title, Author, ISBN)
```

Write the triggers managing the following activities in an on-line (web) bookstore: (1) Book purchase request and (2) Author information request. The books sold in the website are listed in a bookstore catalog (table `BOOK_CATALOG`).

For the first activity, a customer requests to buy a book in the bookstore catalog (insert in the `BOOK_PURCHASE_REQUEST`). In the purchase request the customer specifies the book and the number of requested copies. If the number of requested copies is available in the warehouse, the purchase request can be completed. In this case, the book availability in the warehouse should be updated, and the customer should be notified for the operation (Notification message “Purchase request completed”). If there are not enough available copies, the purchase cannot be completed and a negative answer is notified to the customer. (Notification message “Purchase not possible. Insufficient copies available”). Note that the `WAREHOUSE_AVAILABILITY` table only contains tuples for catalog books (i.e., books in the `BOOK_CATALOG` table) for which at least one copy is available in the warehouse. Catalog books for which no copy is currently available are not stored in the `WAREHOUSE_AVAILABILITY` table. The `NCode` attribute in the `PURCHASE_NOTIFICATION` table is a counter, which should be incremented each time a new notification in the same day is performed.

When a customer requests information on an author (insert in the `AUTHOR_INFORMATION_REQUEST` table) some information on the bestseller book by the same author is provided, to support customers in their book selection. In particular, the bestseller book (the book which sold more copies) among all books written by the specified author which are currently available in the warehouse is selected. Assume that there is at most one book satisfying the above constraints. Information on the selected book is notified to the customer (insert in the `INFORMATION_NOTIFICATION` table).