Informatik og Matematisk Modellering
DTU

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02161 Software Engineering 1
Exercise 1

1 Problem Description

The customer, a public library, is in need for a software supporting the management of the public library. The library contains books, DVDs and CDs, and journals. Books, DVDs and CDs can be borrowed from any user registered with the library. Books can be borrowed for a period of at most 4 weeks; DVDs and CDs only for a period of one week; and journals can't be borrowed at all. Everyone with a CPR number can register as a user of the library.

Everyone can search/browse the electronic library catalogue and search/browse for books, DVDs, CDs, journals, and journal articles by title, author, and topic. However, only a person who is registered can borrow books and DVDs/CDs. A user can at most borrow 10 books, DVDs or CDs. He can't borrow anything if he has an overdue book, DVD or CD. He can only borrow something again after he has payed a fine and returned the overdue media. It can also happen that a user looses or damages a book or DVD/CD. In this case he has to pay to the library the price of the lost media so that the library can buy it again. A user of the library can be blocked from borrowing books. This blocking can be undone.

The librarian can register users and add or delete books, DVDs, CDs, or journals. He can also block and unblock users. He can mark books as missing. The librarian has to be able to register journal copies when they arrive from the publisher and make their articles accessible for searching.

The librarian can generate reports on the status of the library: what is the current number of overdue books; what is the current number of missing books; how often has a certain media been borrowed; how often has a certain media been borrowed that belongs to a certain topic. e.t.c..

The system is to be implemented in Java as a stand alone application and should be running on computer terminals in the library. There are no special terminals for the librarians.

2 Task

Gather and document the requirements of the public library system

- Determine the functional requirements of the library application by creating one or more use case diagrams showing actors and use cases
- Select 3 use cases and create detailed use case descriptions for them; make sure that you think about alternative scenarios (including possible failure scenarios)
- Document the non-functional requirements of the library application as an itemised list
- Create a glossary of the problem domain