**Library case study**

Indhold

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## Domain model



## Use case model

### Actor description

**Primary actor:** Borrower

**Goal:** Borrow, re-borrow and return copies, make reservations for books

**Responsibility:** return copies in time

**Supporting actor:** staff

Responsibility: Provide information about books, copies and borrowers

Off stage actors: Author/illustrator

Interest: For their books to registered whenever borrowed

### Use case diagram



### Brief use case descriptions

Borrow copy: A borrower can borrow up to 10 copies by providing his social security number and pin code. The system registers the loan.

Return copy: A borrower can return borrowed copies. It is the borrower’s responsibility to do so before the return date.

Re-borrow copy: Before the return date a borrower can re-borrow already borrowed copies, if they are not reserved to other borrowers.

Reserve book: If no copies are available a borrower can make a reservation for the book. The borrower is given a queue number.

Register book information: The staff must register, edit and delete information about the books and copies.

Register borrower information: The staff must register, edit and delete information about the borrowers

Send recall: If a copy is not return before the return date the system will send a recall to the borrower.

### Fully dressed use case description:

UC1: Borrow copy

Primary actor: Borrower

Preconditions: The borrower has chosen one or more copies to borrow, the borrower must be registered, the copies must be registered

Post conditions: One or more copies is registered as borrowed by the borrower, the return date is calculated

Main success scenario:

1. The borrower arrives at the system with copies to borrow
2. The borrower indicates he wants to borrow copies
3. The borrower enters social security number and pin code
4. The system validates the borrower’s security number and pin code
5. The system checks if the borrower has copies with overrun return date
6. The system checks if the borrower has already borrowed the maximum number of copies
7. The borrower enters the copy’s copy number
8. The system validates the copy number
9. The system registers the copy as being borrowed by the borrower and increases the number of copies borrowed by the borrower
10. The system calculates the return date

*The borrower repeats step 6 – 10 until indicates done or the maximum number of copies has been reached*

1. The system creates a receipt with the borrower’s name, the current date, and for each copy: Author, title, copy number and return date
2. The system logs out the borrower

Extensions:

4a. Wrong social security number and/or pin code

1. The system asks the borrower to reenter security number and pin code
2. The system validates the borrower’s security number and pin code

*Repeat step 1 until validation succeeds or number of tries exceeds three times. If third try is reached the system refers you the library staff*

1. Continue at step 6

5a. The borrower has copies with overrun return date

1. The system informs the borrower that he has exceeded the return day and can’t borrow until copies are returned
2. The system generates a list over the copies that are late with the borrower’s name, the current date, and for each copy: Author, title, copy number and return date
3. The system gives the borrower the opportunity to print the list

*Go to step 12*

6a. The borrower has reached the maximum number of copies to borrow

1. The system informs the borrower that the maximum number has been reached
2. The system gives the borrower the opportunity to return copies
   1. Go to use case return copies

*Go to step 11*

8a. The copy number does not exist in the system

1. The system informs the borrower that the copy does not exist
2. The system asks the borrower to reenter the copy number
3. The borrower enters the copy number
4. The system validates the copy number

*Repeat step 1 – 4 until validation succeeds or number of tries exceeds three times. If third try is reached the system refers you the library staff*

1. The system asks the borrower to contact staff
2. The system gives the borrower the opportunity to print out message
   1. The borrower prints out the message

*Go to step 7 for a new copy*

## Design class diagram

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