

# Online library management application - Requirements

## 1. Users

User role	Description
<b>Member</b>	Person who rents books from the library.
<b>Supplier</b>	Person who delivers books from the library to the members address.
<b>Librarian</b>	Person who closes active loans after book is returned in the library and is responsible for delivering new samples/books in the library.

## 2. Description (after the meeting with the representatives)

1. Librarian(s) and supplier(s) are already added as users in the system. Provide Save/Load data mechanism in the context of IO operations and files management.
2. Members should register in the system using their email address. The email address is unique, so two different users cannot have identical email addresses. The password that the user will choose, must to satisfy specific security rules. The policy should be defined in separate logic and updated as needed. Initially, the password should be strong meaning that it must contain small/capital letters, special characters (\*, !, #, &) and numbers. The length of the password must be at least 8 characters.
3. Number of books in the library is fixed in the beginning. Every book has specific number of copies. Librarian can add new books in the system and increase the number of copies for a specific book (if an existing book is delivered). Additionally, librarian has an ability to decrease the number of copies for a specific book for some reason (for example the book has been damaged or should not be available for rent because of some internal procedures). Books are also stored in separate file (json format is required). The system should support importing additional books from excel file.
4. Every member can rent maximum 3 books in the same time. Every rent period lasts 30 days starting from the day of delivering the book. For every late returning of the book, member will

pay a penalty (10 euros = 50 days). The penalty should be configurable field/property according current legal regulations.

5. When a member loans a specific book, the book is being reserved and is waiting for the supplier to pick it up. The system should track all statuses about the rents.

6. Supplier is delivering rented books every single day (this is a rule that can be changed ad hoc, for example it may happen that the supplier can make a delivery only after 3 days, etc.). When the supplier delivers the book(s), they log in to the system and mark the book(s) as delivered to the member. And from that moment starts the rental period (that lasts 30 days).

7. Member needs to return the book to the library by themselves and then librarian marks the rent as closed. When closing the rent, librarian checks if the member is returning the book within the expected time frame (30 days from the rent). If there is a delay, calculation is being made on how much the member will be charged because of their delay. Member must be notified for the penalty and amount as well.

8. For every book there are details like Title, Genre, Author, Description, PublishedYear, ISBN number, number of pages, number of rents.

9. Members can search for a specific book by title, genre, year, number of pages (under/over or correct number of pages).

10. Every time books are shown on the screen, regardless of filtering, they should be ordered by the number of rents (the most rented books are showed on the top). Additional sorting implementation should be supported if needed.

11. The system should log all user activities and prevent potential crashes due to IO or other type of errors/exceptions.