

Library Inventory System

[Isomorphismss/CSCI-UA-470-Final-Project](https://github.com/Isomorphismss/CSCI-UA-470-Final-Project)
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Group#

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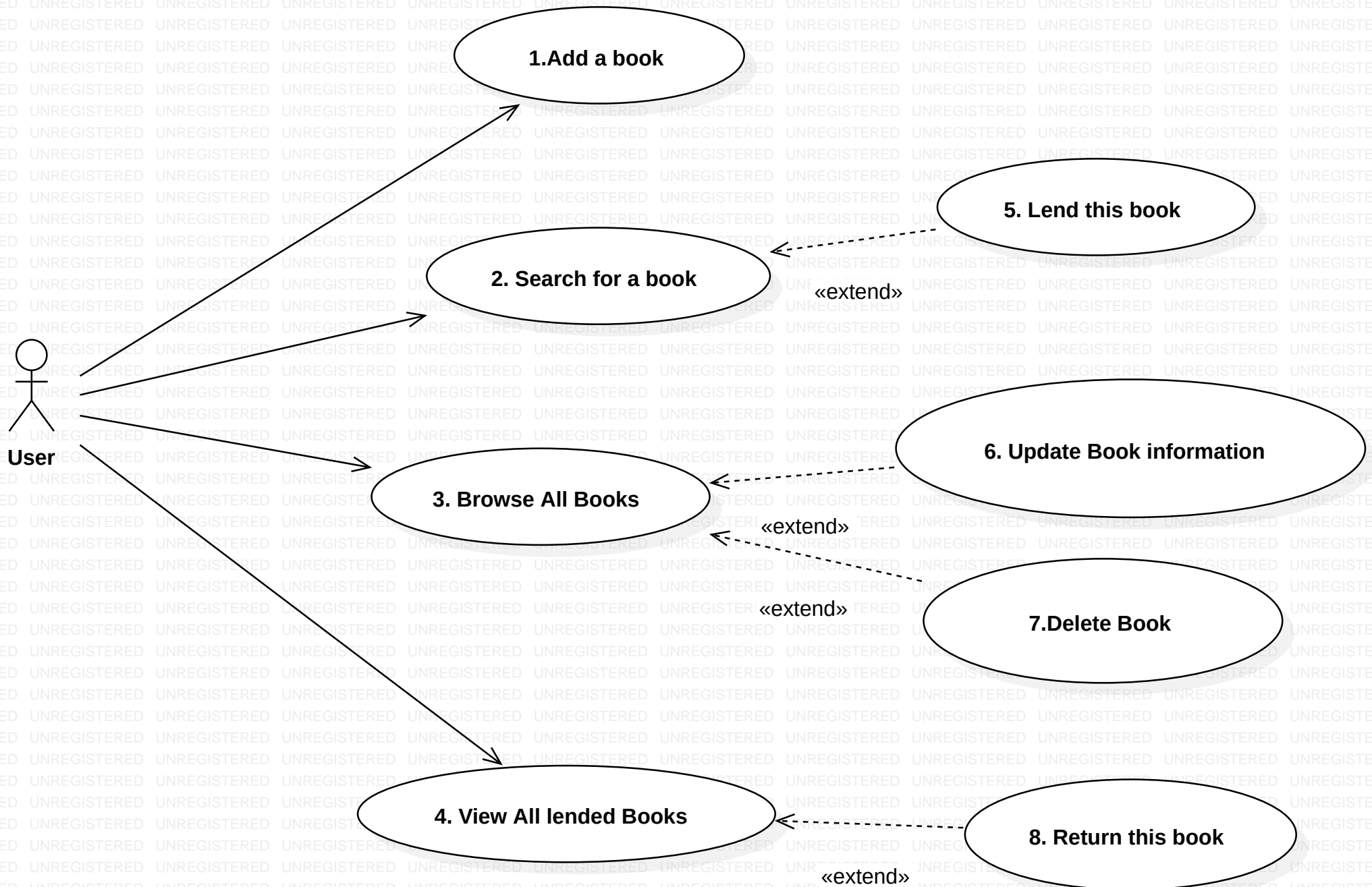
Project Description:

1.General Description, Goals, and Benefits: Our Library Inventory System is designed to allow users to add a book, search for a book, lend a book, browse all books, update book information, delete a book, view all lent books, and return a book. The goals and benefits of our system are to provide a convenient platform for users to manage books, a service that is relatively scarce in the market. When users utilize our system, they will enjoy a comfortable experience, free from frustration caused by tedious steps. This is due to our system's clear structure and user-friendly interface.

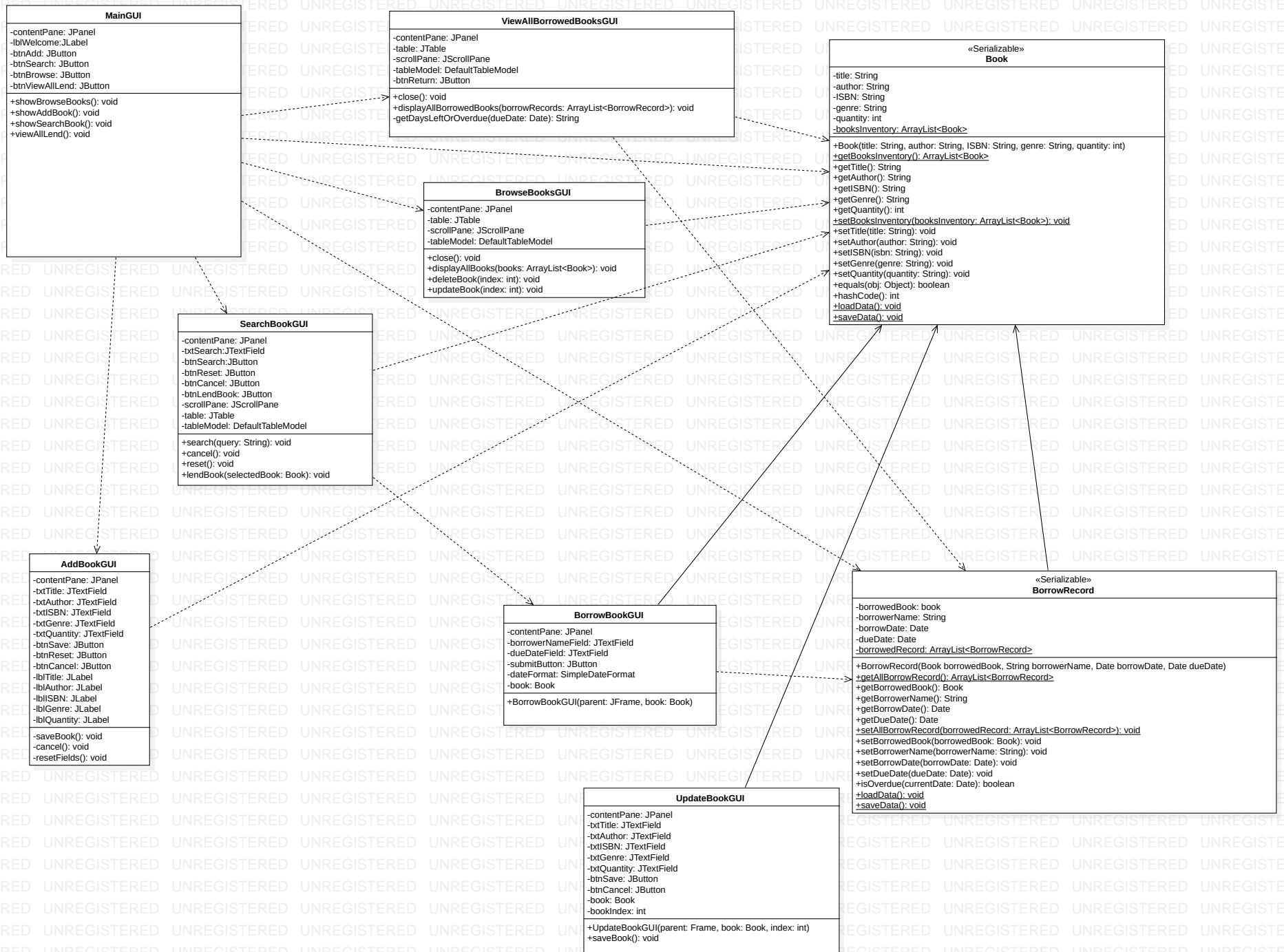
2.System input(s) and output(s): When users want to add a book, the input will be title, author, isbn, genre, and quantity. When users search for a book, the input will be the search queries(title, author, isbn, and genre.) and the output will be a list of books that match the search criteria. When users want to lend a book, the input will be the borrower's name and due date. When users want to browse all books, the output will be a complete list of books available in the library. When users want to update book information, the input will be the new information of the selected book, and the output will be a complete list of books available in the library after changing the information. When users want to delete a book, the output will be a complete list of books available in the library after deletion. When users want to view all lended books, the output will be all the books information that are lended. When users want to return a book, the output will be all the book's information that is lended after returning.

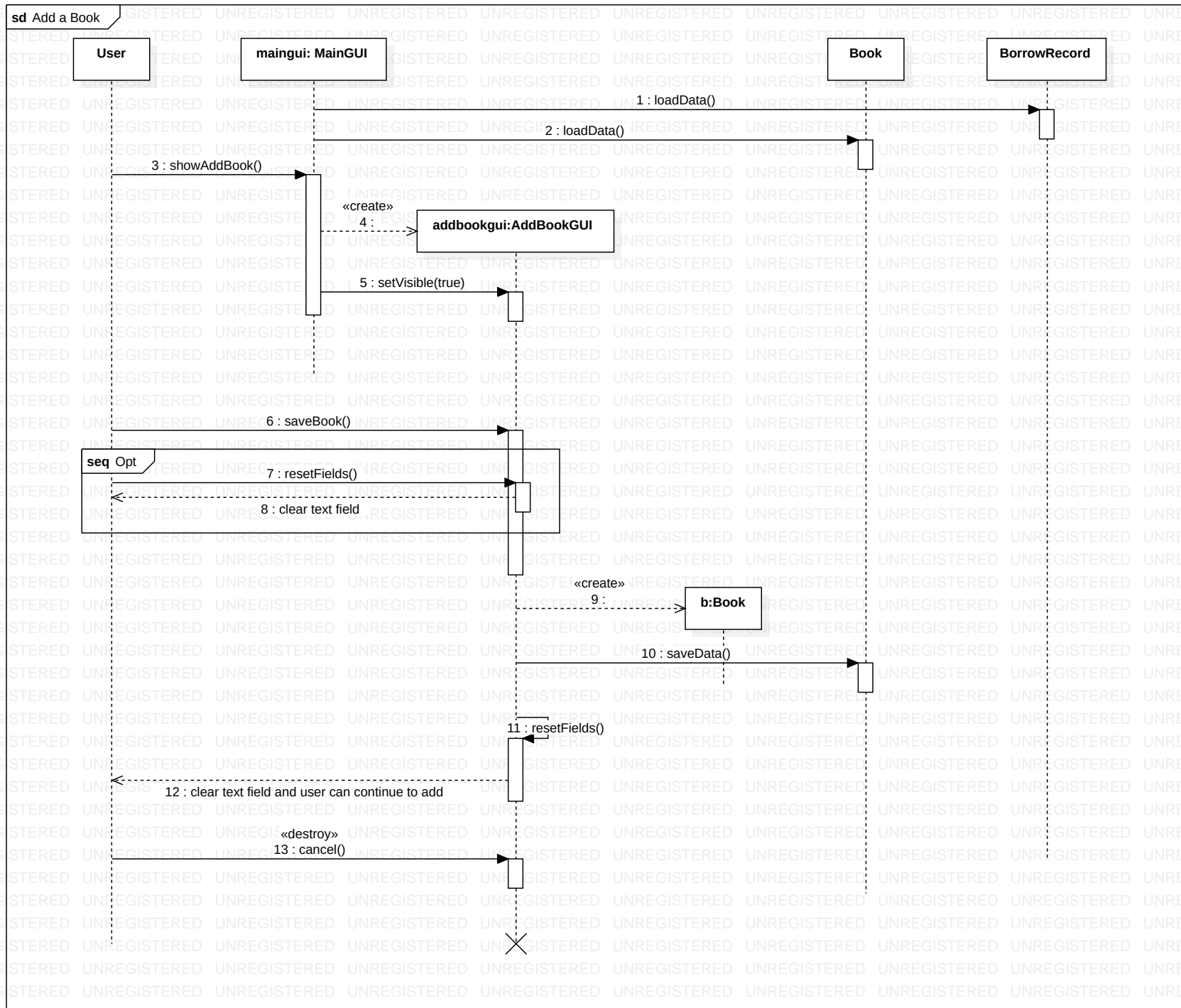
Conclusion: This is our Library inventory system for now. Although it has many functions and is very user friendly, our system is still very simple and doesn't have enough functionalities. In the future, we will keep working on it and complete a large Library Inventory system that combines different kinds of functionalities.

Model1::UseCaseDiagram1



Model1::ClassDiagram1





Model1::Collaboration2::Interaction1::Search for a book

sd Search for a book

User

maingui:MainGui

Book

BorrowRecord

searchbookgui:SearchBookGUI

seq Opt

1 : loadData()

2 : loadData()

3 : showSearchBook()

«create»

4 :

5 : setVisible(true)

6 : reset()

7 : clear text field

8 : search(query:String)

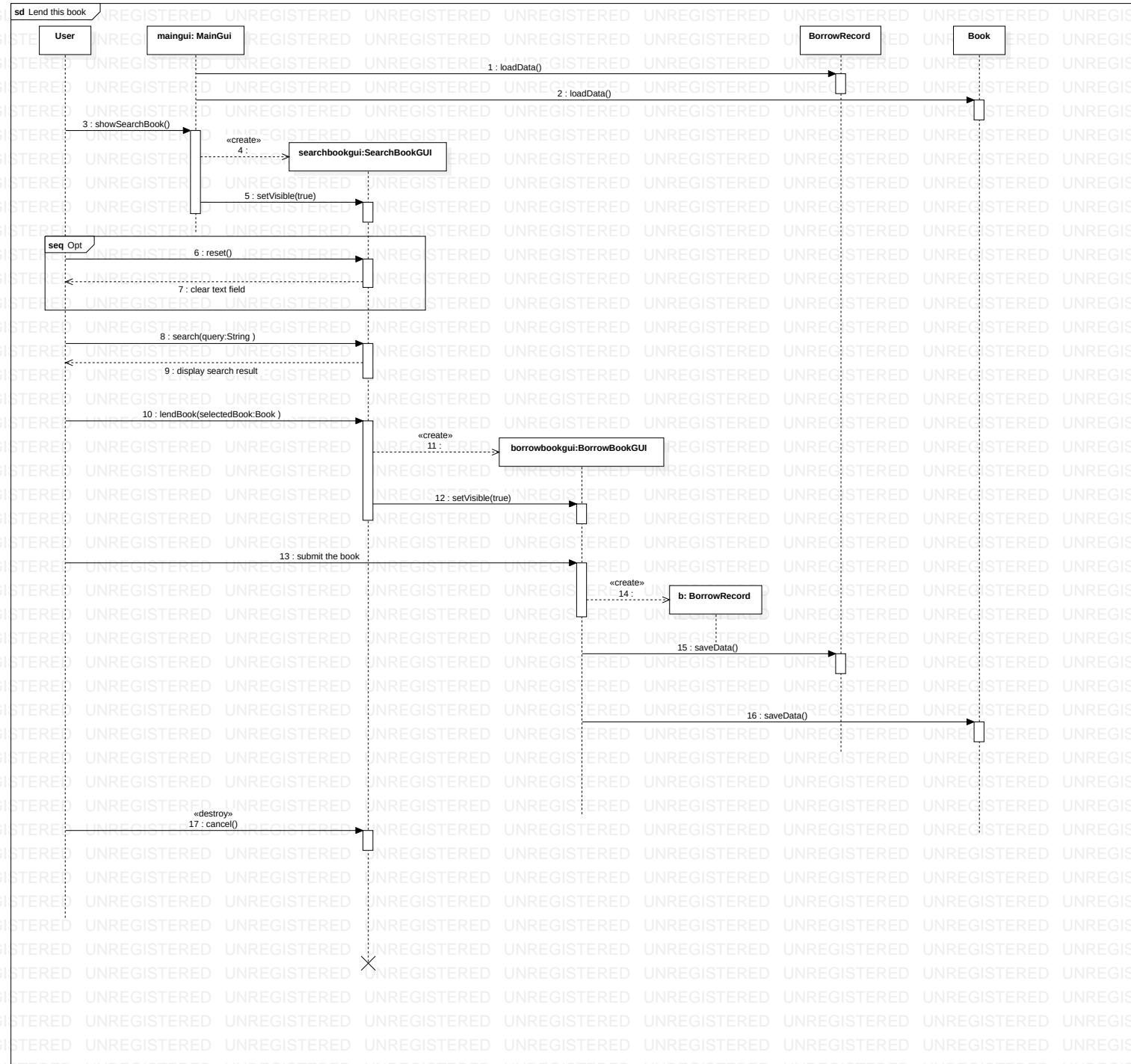
9 : display search result

«destroy»

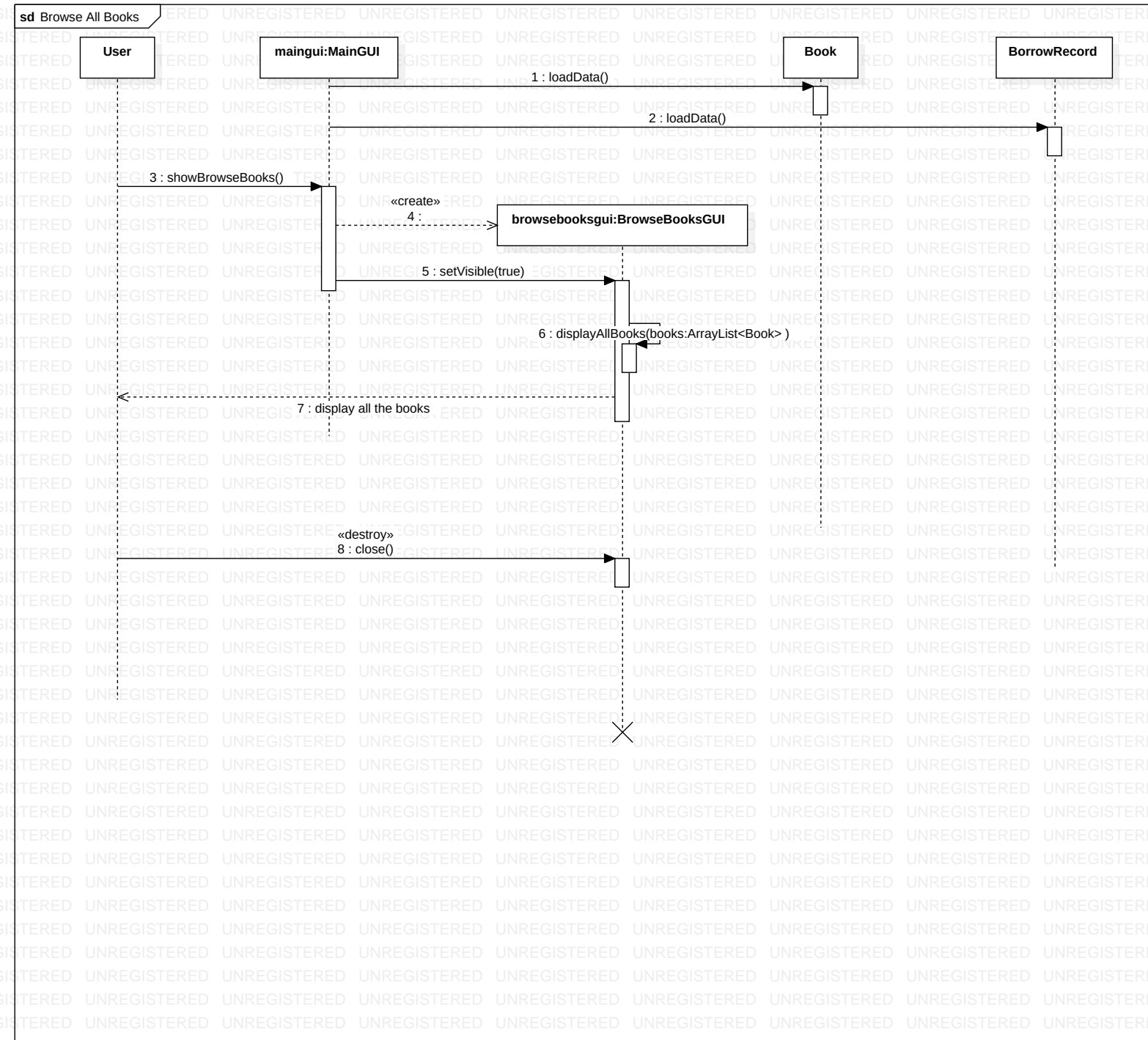
10 : cancel()

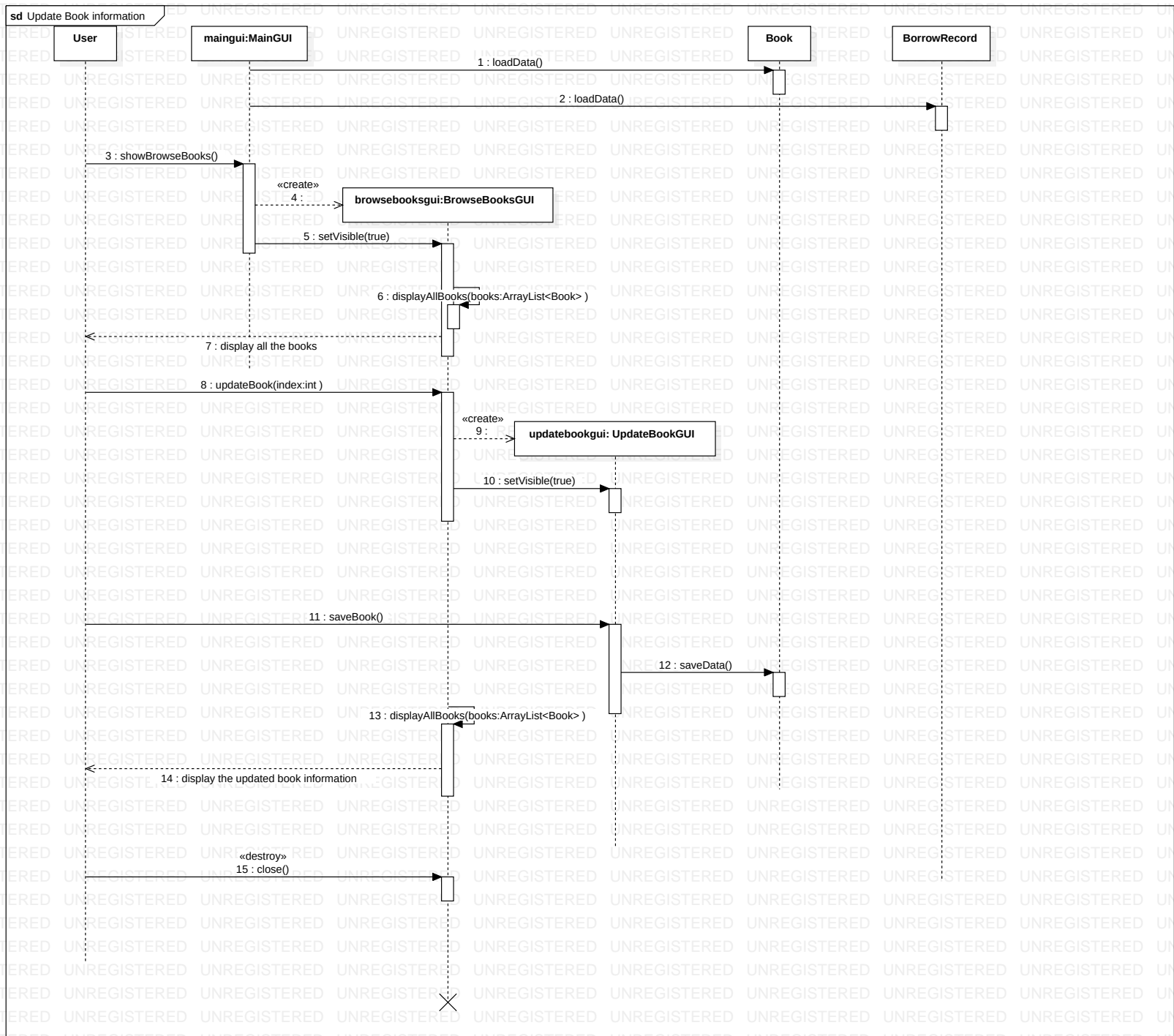
X

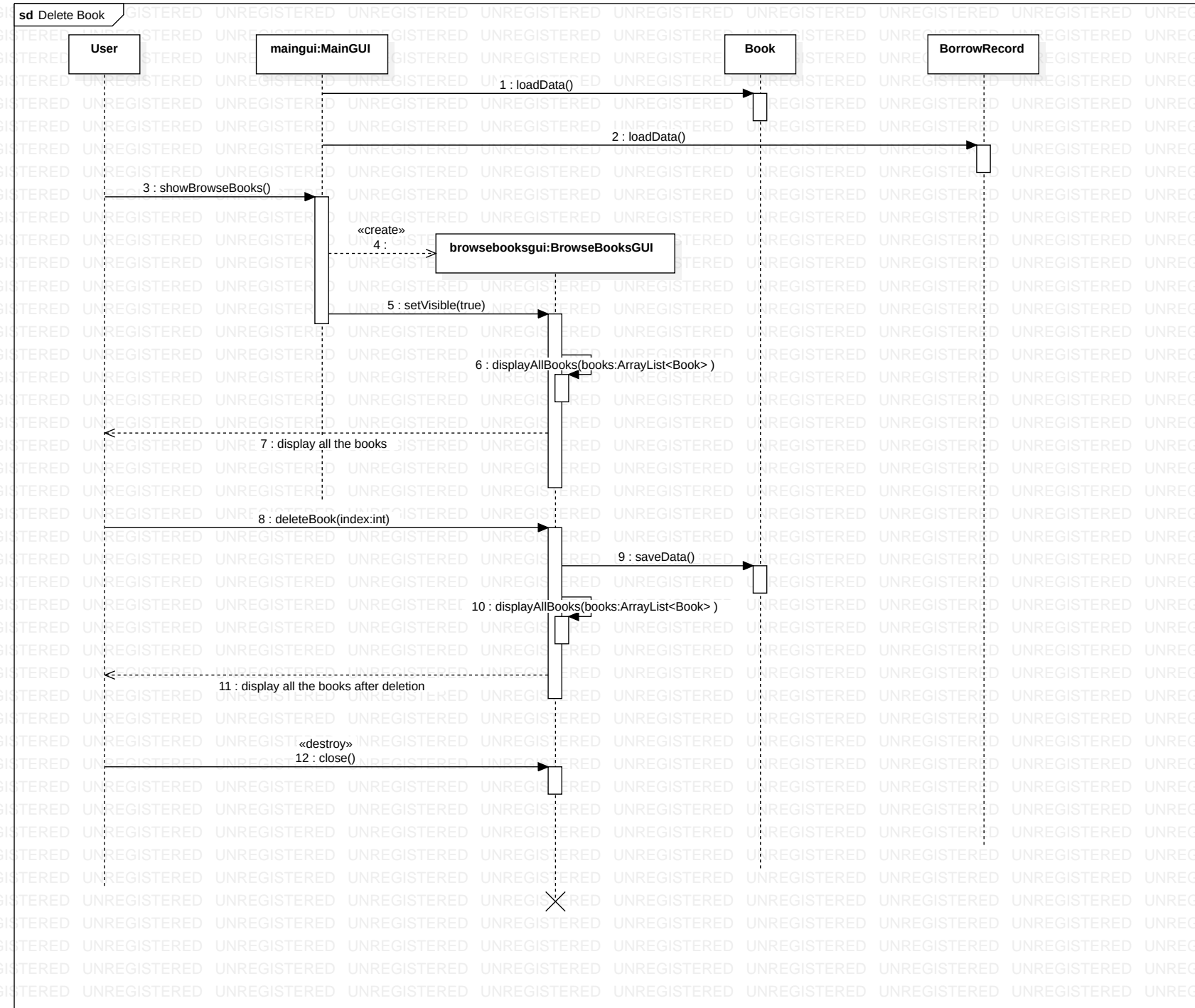
Model1::Collaboration3::Interaction1::Lend this book



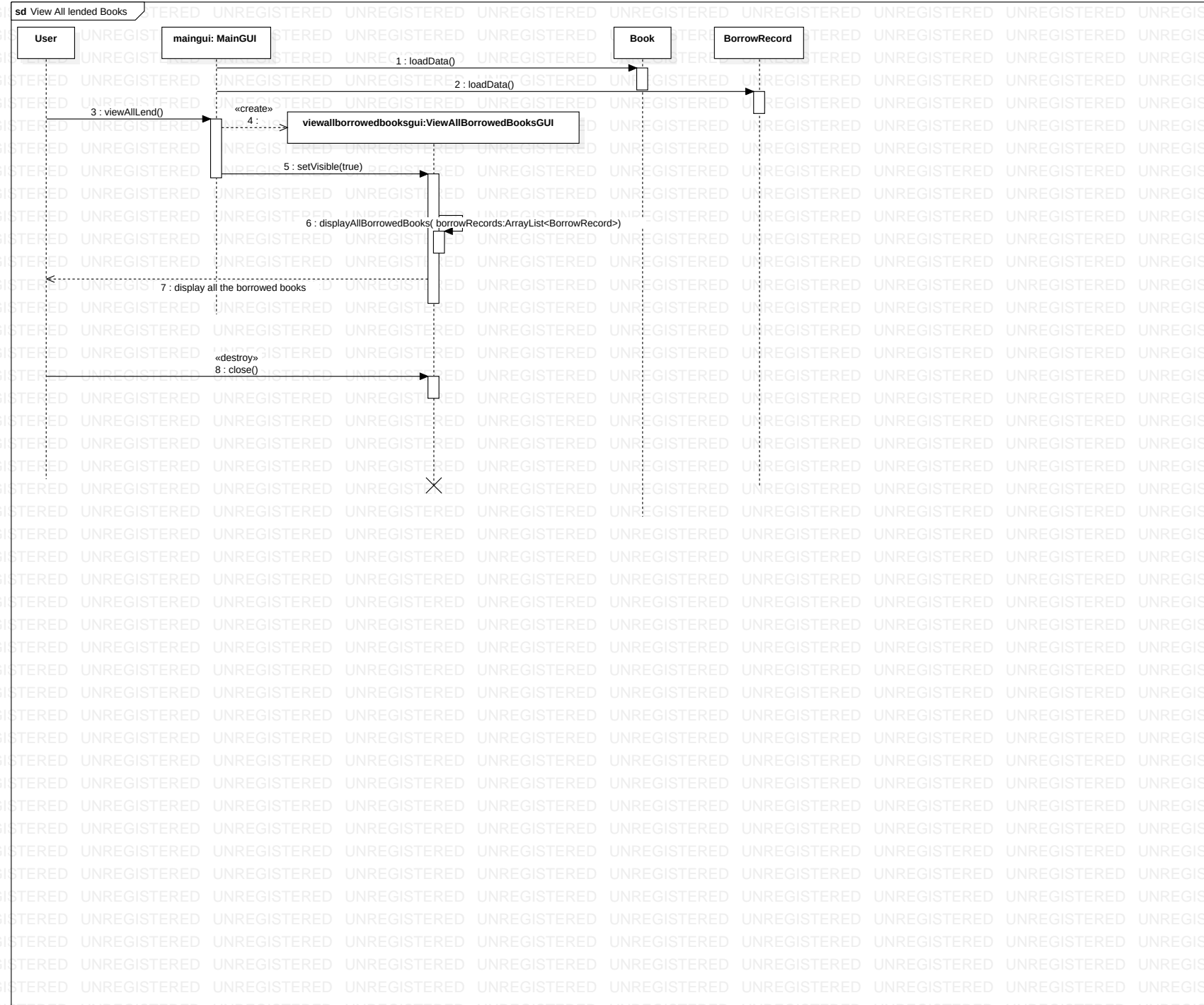
Model1::Collaboration4::Interaction1::Browse All Books







Model1::Collaboration7::Interaction1::View All lended Books



Model1: Collaboration8: Interaction1: Return this book
sd Return this book

User

maingui: MainGUI

Book

BorrowRecord

viewallborrowedbooksgui: ViewAllBorrowedBooksGUI

6 : displayAllBorrowedBooks(borrowRecords:ArrayList<BorrowRecord>)(true)

7 : display all the borrowed books

8 : return the selected book

9 : saveData()

10 : saveData()

11 : displayAllBorrowedBooks(borrowRecords:ArrayList<BorrowRecord>)

12 : display all the borrowed books after return

13 : close()

1 : loadData()

2 : loadData()

3 : viewAllLend()

«create»
4 :

5 : setVisible(true)

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UC Reference Name/Number	Add a book(UC1)
Overview	Users can add a new book to the library inventory system, including information about title, author, isbn, genre, and quantity.
Related use cases	N/A
Actors	User

UC Reference Name/Number	Search for a book(UC2)
Overview	The user can search the book in the library inventory system by title, author, isbn, and genre.
Related use cases	Lend this book(UC5)
Actors	User

UC Reference Name/Number	Browse All Books(UC3)
Overview	Users can view all their added books' details stored in the library inventory system.
Related use cases	Update Book information(UC6), Delete Books(UC7)
Actors	User

UC Reference Name/Number	View All lended Books(UC4)
Overview	Users can view all the lended books' details stored in the library inventory system
Related use cases	Return this book(UC8)
Actors	User

UC Reference Name/Number	Lend this book(UC5)
Overview	Users can lend a book from the library inventory system
Related use cases	Search for a book(UC2)
Actors	User

UC Reference Name/Number	Update Book information(UC6)
Overview	Users can update the information(title, author, isbn, genre, and quantity.) of the selected book
Related use cases	Browse All Books(UC3)
Actors	User

UC Reference Name/Number	Delete Book(UC7)
Overview	Users can delete a book from the library inventory system
Related use cases	Browse All Books(UC3)
Actors	User

UC Reference Name/Number	Return this book(UC8)
Overview	Users can return a book to the library inventory system, and then this book are able to be borrowed again
Related use cases	View All lended Books(UC4)
Actors	User