

Library Inventory System

<https://github.com/Isomorphismss/CSCI-UA-470-Final-Project>

Group# OOP_Project 1

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Table of Work

(Please write x in the boxes to mention what each student achieved in this project)

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System Analysis

Project Description

- **General Description:** Our Library Inventory System is an intuitive and efficient platform designed to enhance book management and accessibility. It offers a range of functions, including the ability to add, search, lend, and browse books, as well as update book information, delete entries, view all lent books, and return books. The system is crafted with the goal of providing a user-friendly and convenient service for book management, a feature relatively rare in the current market. It has a well-organized structure and an easy-to-navigate interface, ensuring a comfortable experience for users.
- **System input(s) and output(s):**
 - ◆ Add a Book: Users input details such as the title, author, ISBN, genre, and quantity.
 - ◆ Search For a Book: Inputs include search queries like title, author, ISBN, and genre, with the output being a list of books matching these criteria.
 - ◆ Lend This Book: The input required is the borrower's name and the due date.
 - ◆ Show All Lending Records of This Book: The output is a list of lending records including borrower's name and due date of this book.
 - ◆ Browsing All Books: The output is a comprehensive list of all books available in the library.
 - ◆ Updating Book Information: Users input the updated details of a selected book, with the output being an updated list of books.
 - ◆ Deleting a Book: The output is the updated list of available books post-deletion.
 - ◆ Viewing Lent Books: The output includes information on all currently lent books.
 - ◆ Returning This Book: The output is the updated list of lent books after the return.

Use case diagrams and descriptions



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), show lending record of this book (UC6)
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 (UC7), Delete Books (UC8)
Actors	User

UC Reference Name/Number	View All Lent Books (UC4)
Overview	Users can view all the lent books' details stored in the library inventory system
Related use cases	Return this book (UC9)
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

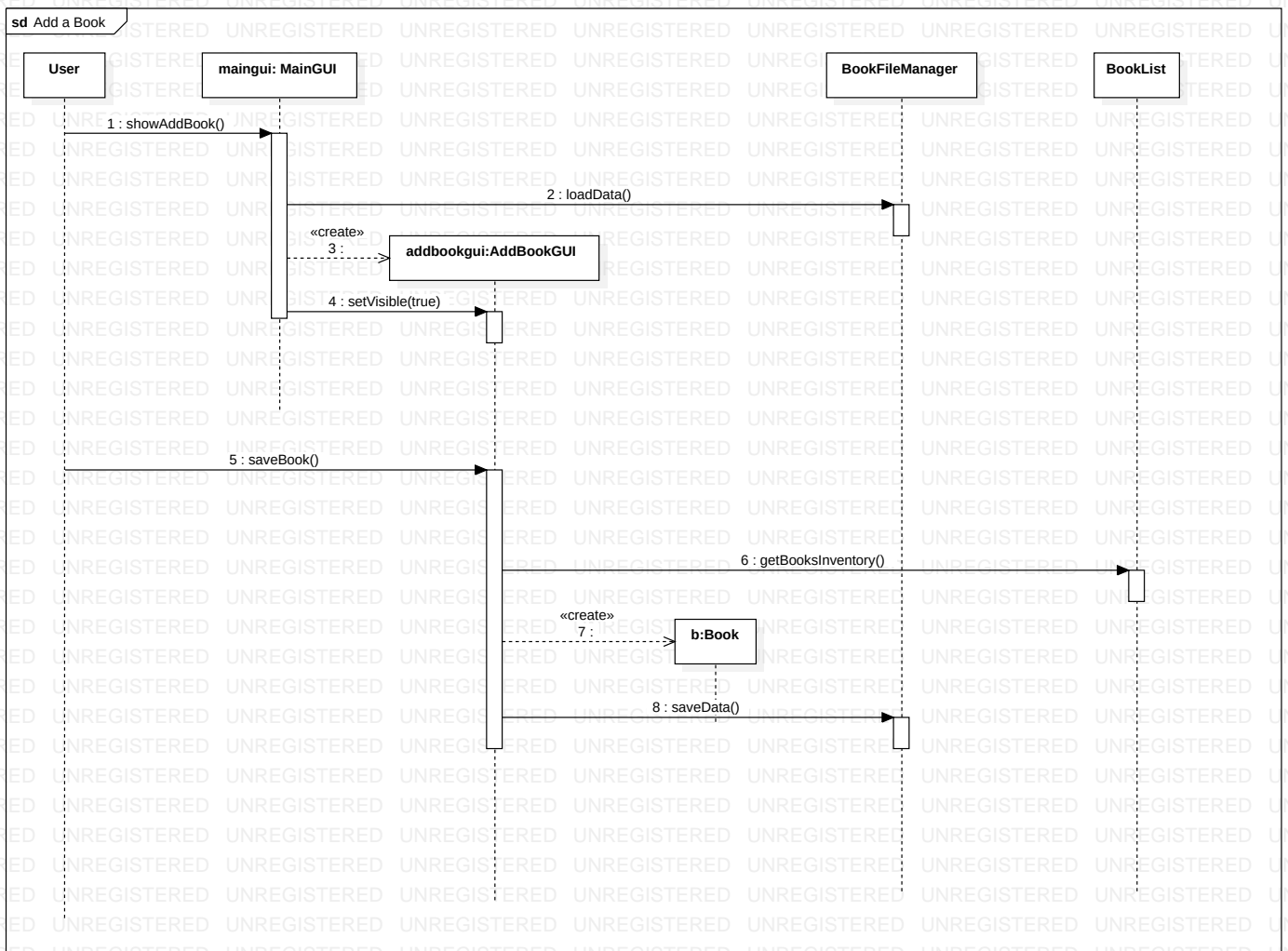
UC Reference Name/Number	Show Lending Record of This Book (UC6)
Overview	Users can show the lending record of a specific book from the library inventory system
Related use cases	Search For a Book (UC2)
Actors	User

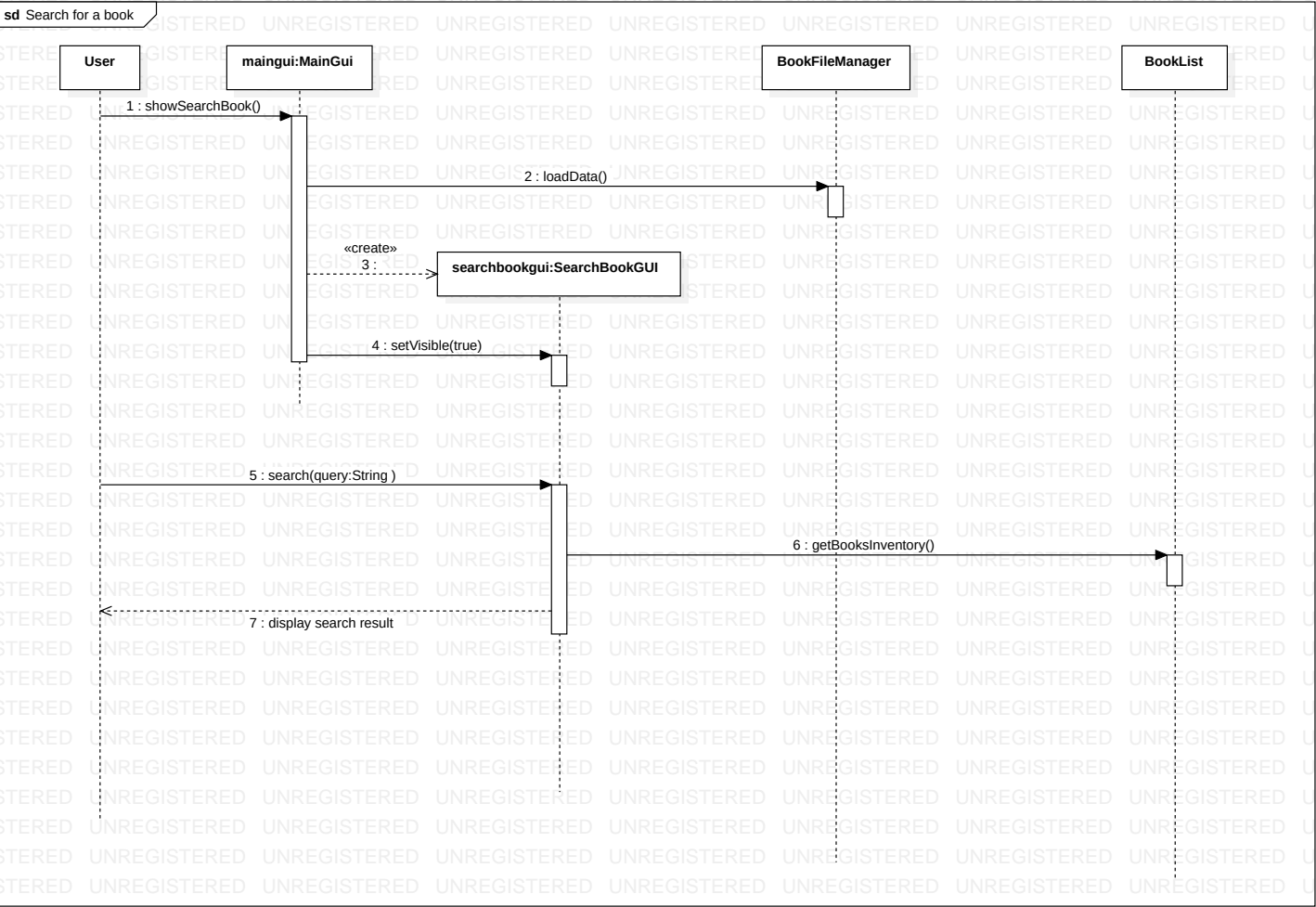
UC Reference Name/Number	Update Book information (UC7)
Overview	Users can update the information (title, author, ISBN, genre, and quantity) of the selected book
Related use cases	Browse All Books (UC3)
Actors	User

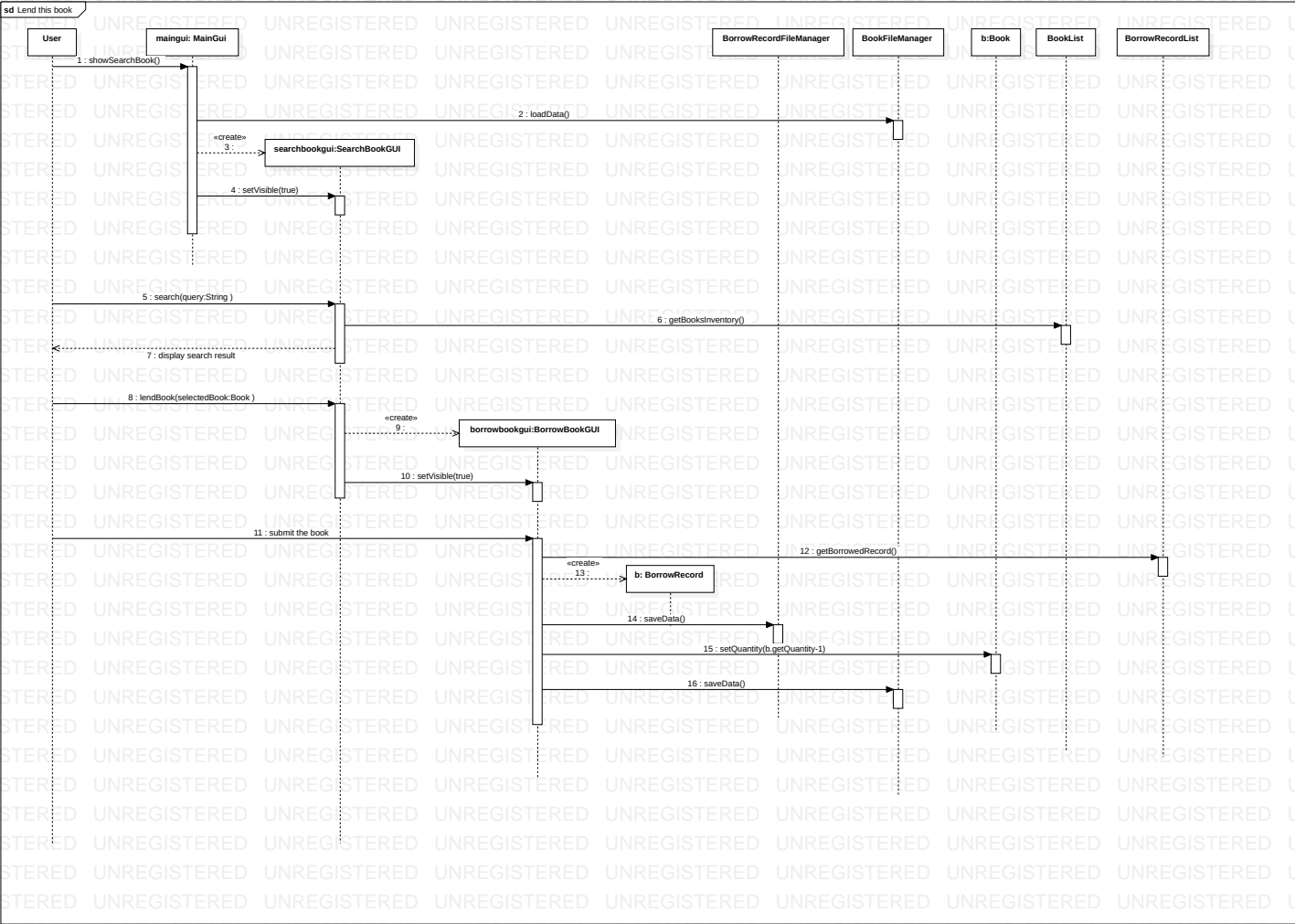
UC Reference Name/Number	Delete a Book (UC8)
Overview	Users can delete a book from the library inventory system
Related use cases	Browse All Books (UC3)
Actors	User

UC Reference Name/Number	Return This Book (UC9)
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 Lent Books (UC4)
Actors	User

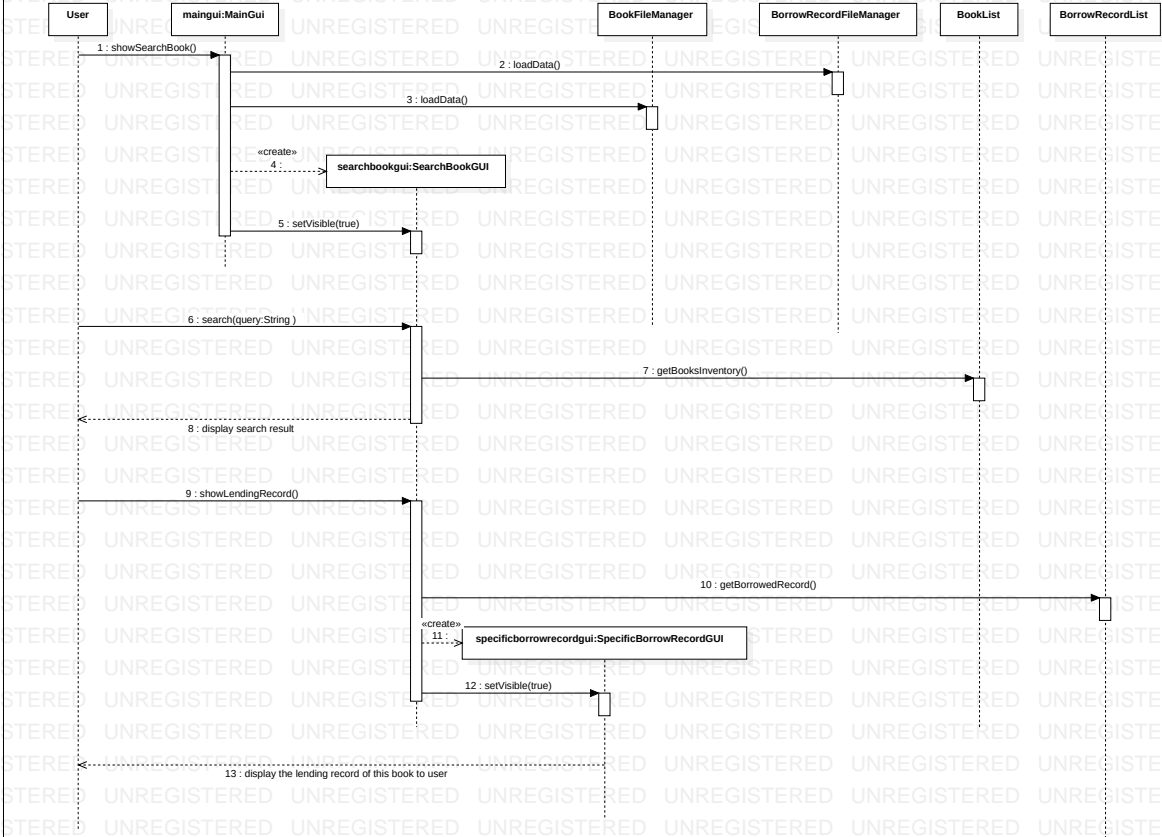
Sequence Diagrams



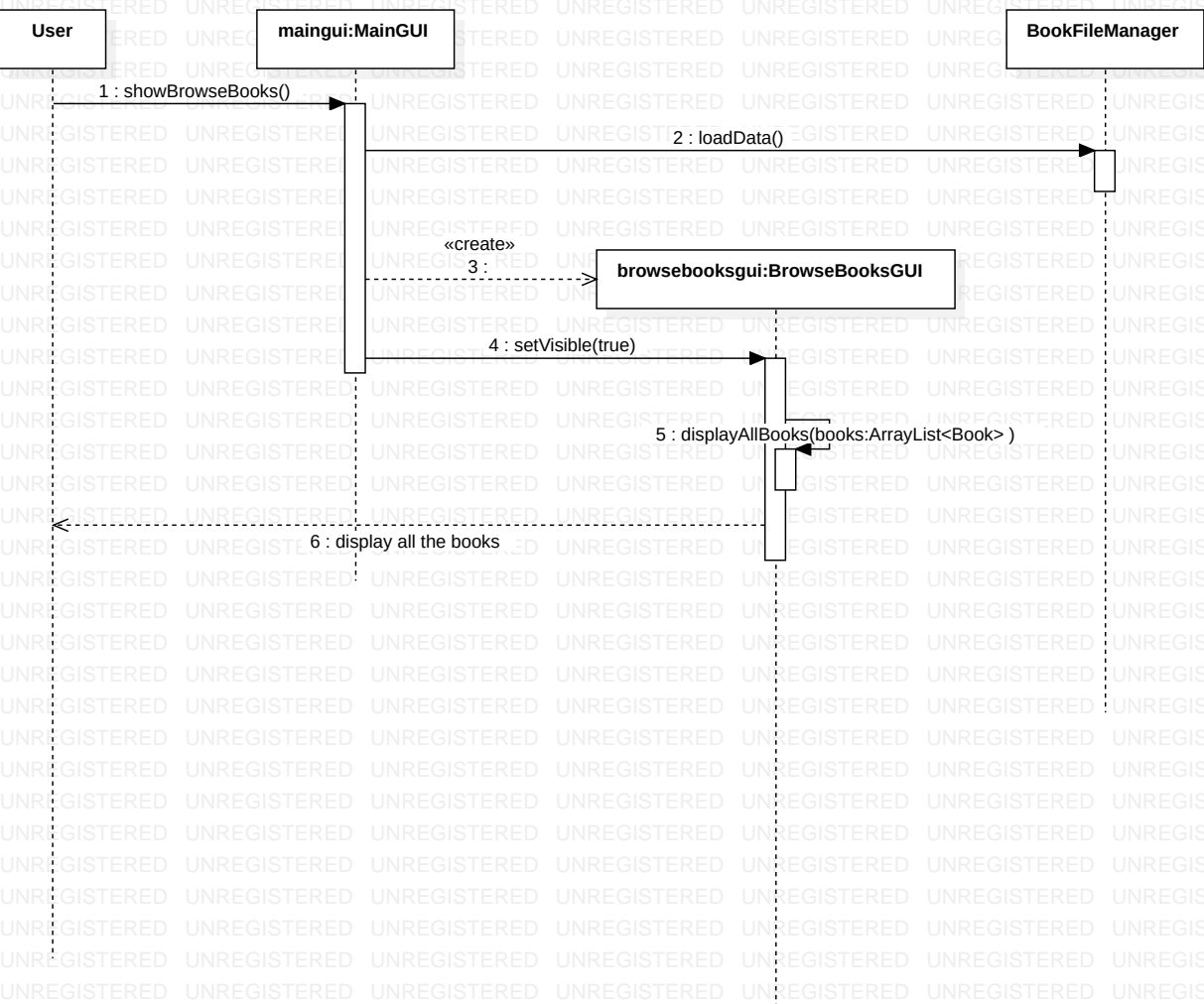


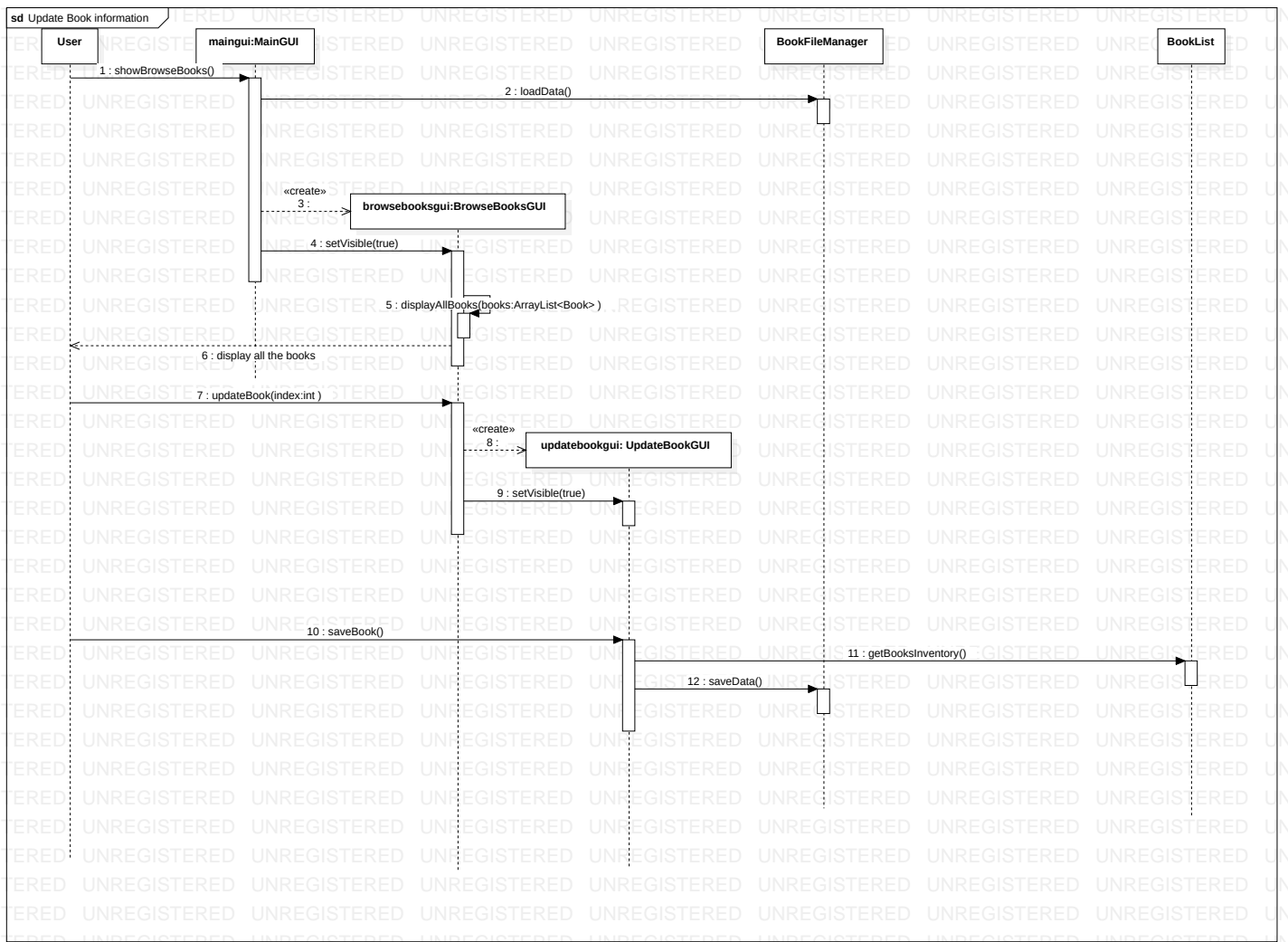


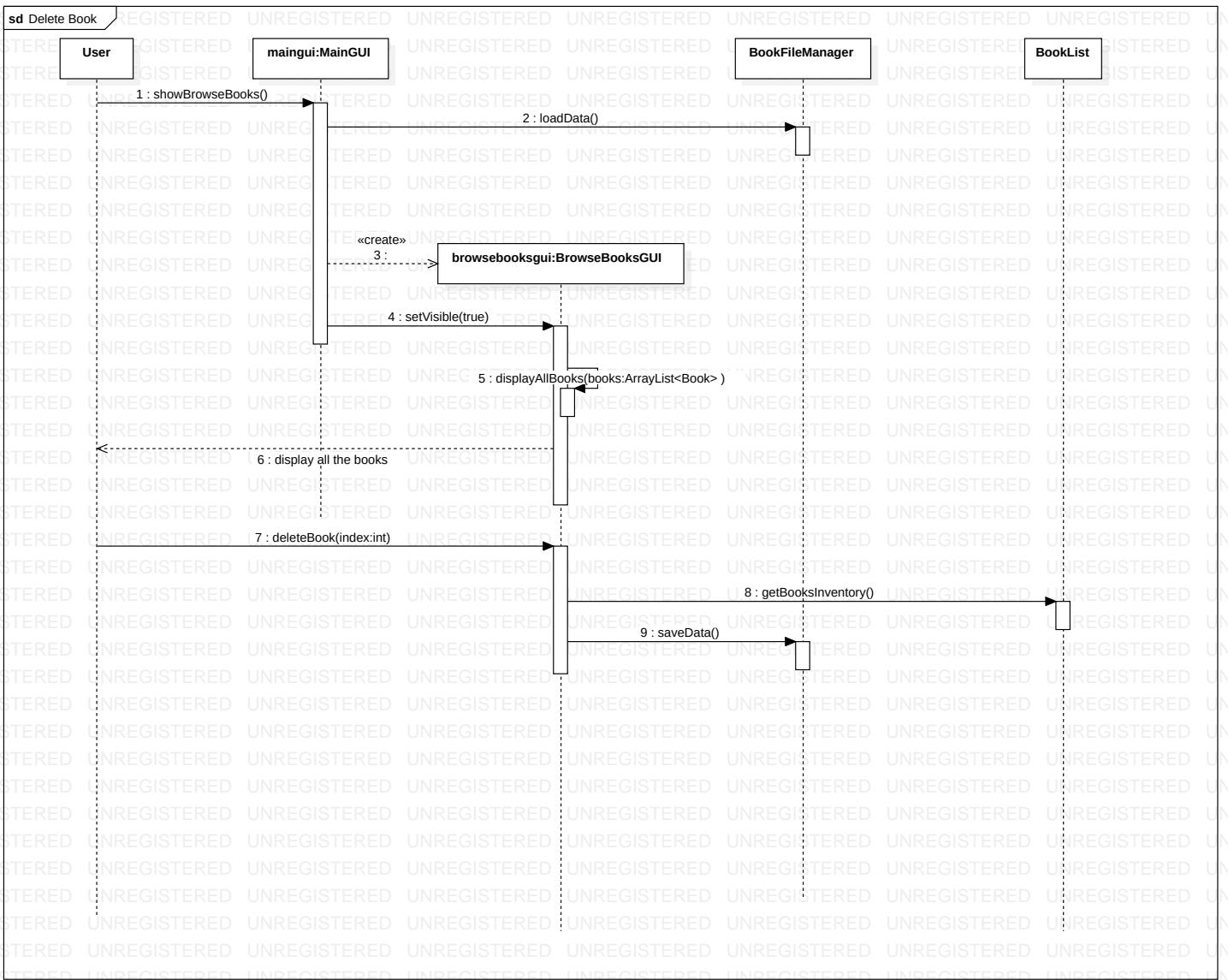
sd Show lending record of this book



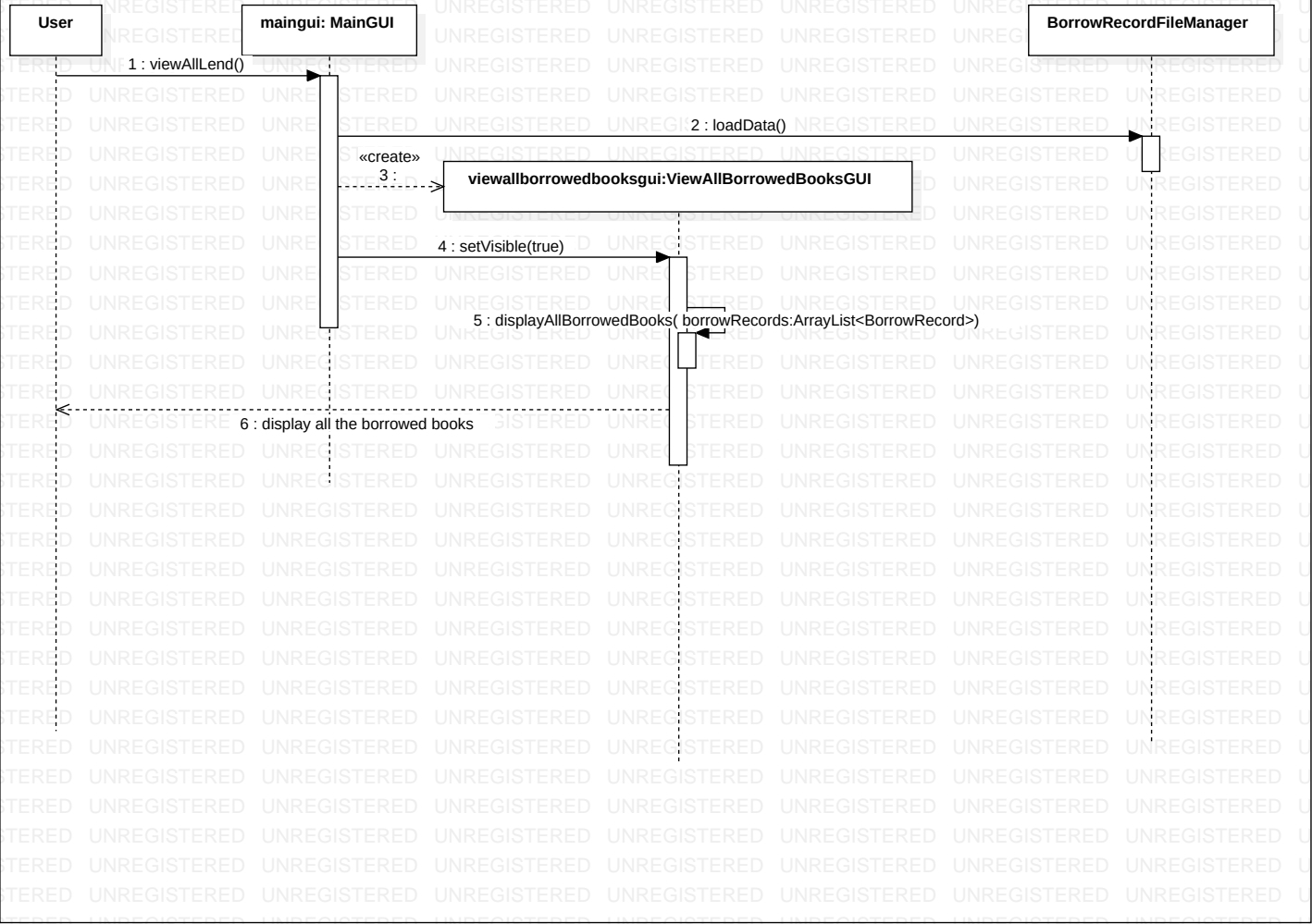
sd Browse All Books

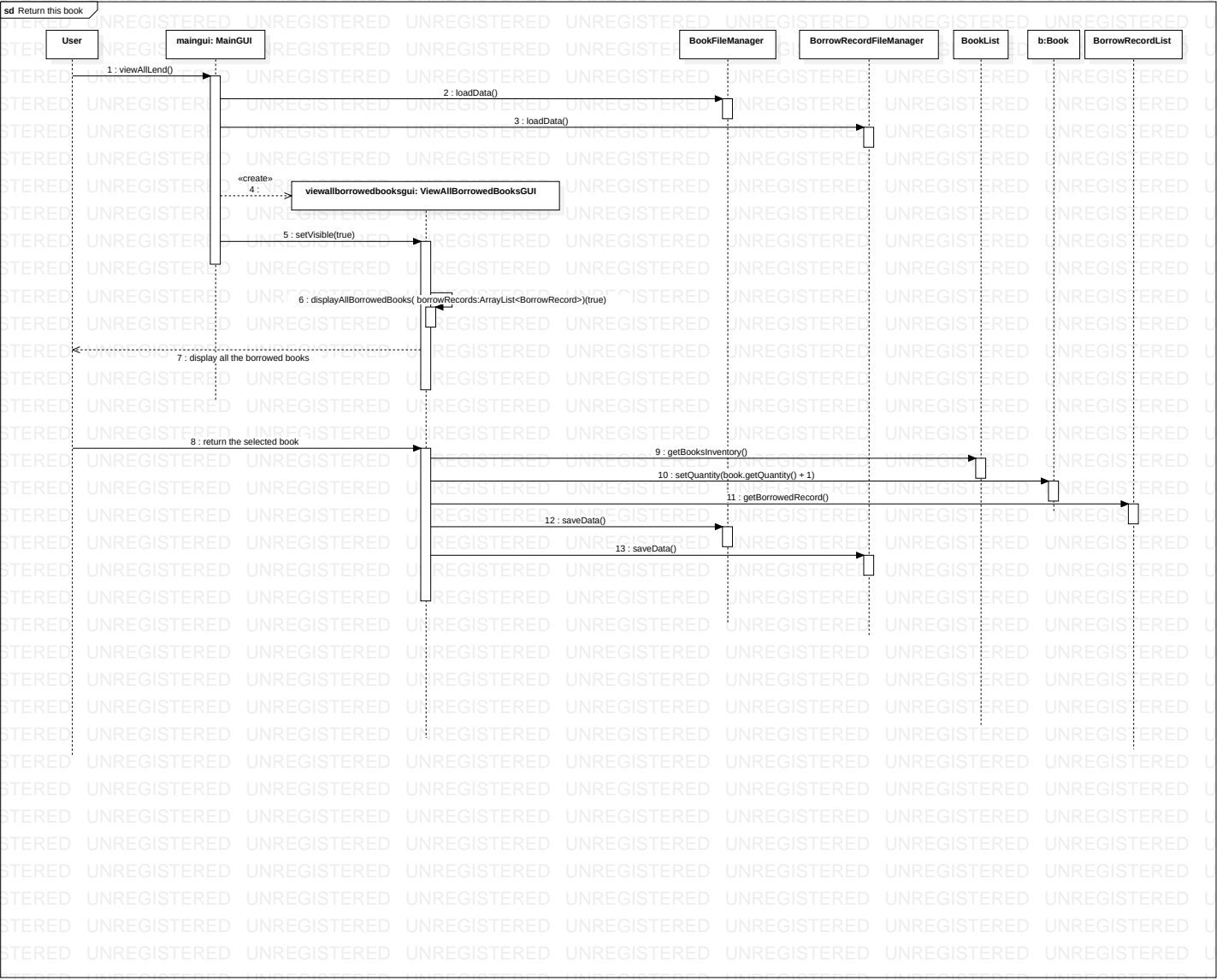




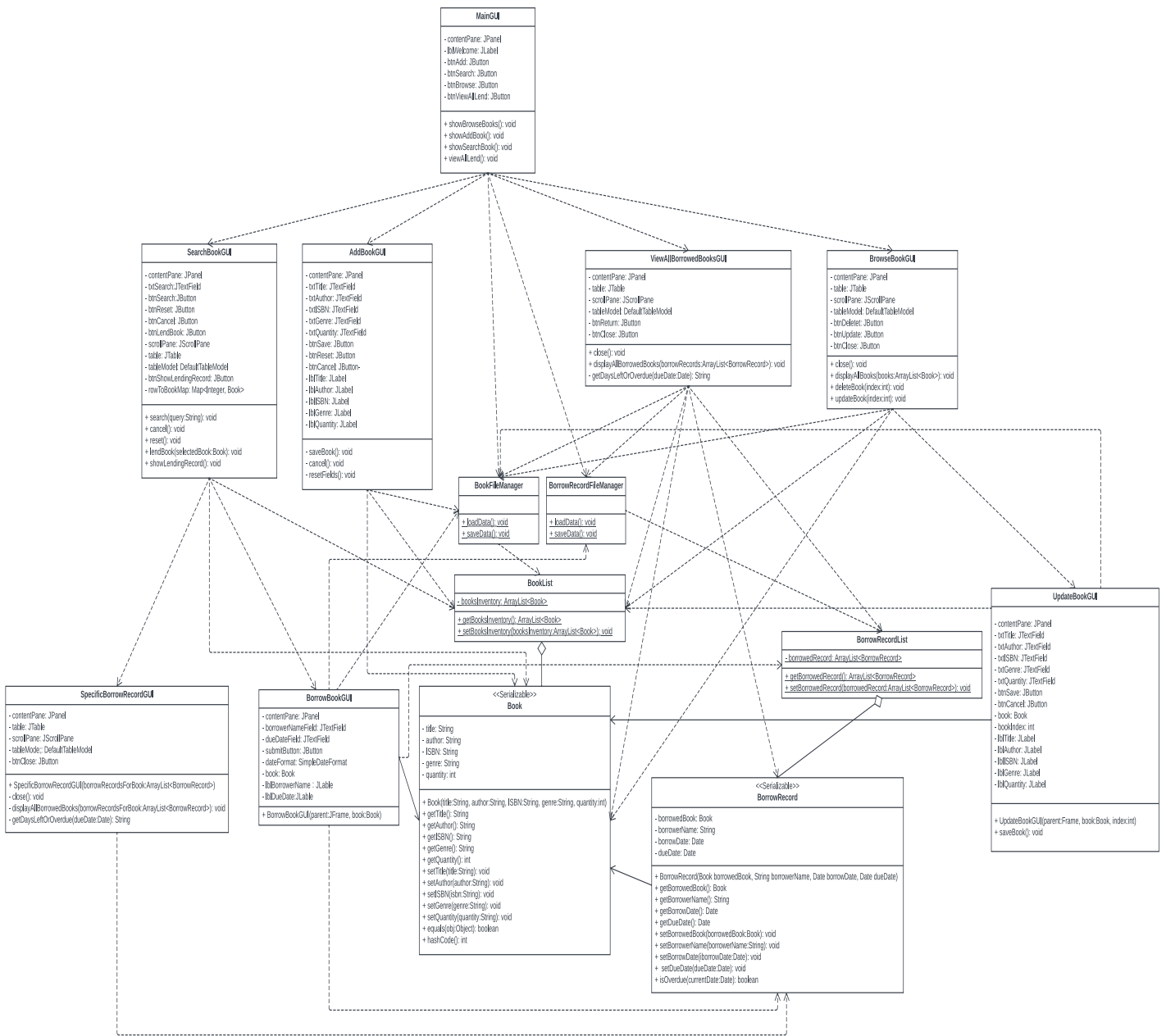


sd View All Lent Books





Class Diagram



Conclusion: Our Library Inventory System is a simple yet effective solution for basic library management needs. Moving forward, we are committed to enhancing its capabilities, aiming to develop a comprehensive Library Inventory System that incorporates a variety of advanced functionalities.