

# Project Title

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<https://github.com/foxzhang1224/OOPLibrary>

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# Table of Work

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

	Student-1 Povilas	Student-2 Fox	Student-3 Daniel
Project Description		X	
Uses Cases Diagram(s)		X	X
Sequence Diagrams	X		
Class diagram(s)	X	X	X
Implementation	X	X	X
Conclusion	X	X	X

# Table of Contents

- Terminology Glossary (If needed)
- System Analysis
  - Project Description (One Page)
    - General Description, Goals and Benefits
    - System input(s) and output(s)
    - Special requirements (Performance, Interfaces, Constraints, Reliability, if any)
  - Uses Cases Diagram(s) and use cases description.
- System Design
  - Sequence Diagrams
  - Class diagram(s)
- Conclusion
- Appendix (any related reports, questionnaires, docs.. If any).

## **System Analysis:**

### **General Description, Goals, and Benefits**

The library management project is designed to serve users, allowing them to donate books, borrow and return books, modify book information, browse books, and view their account information. It strives to ensure an efficient system to manage all books in the library and record detailed information about the books and borrowing activity by users. Due to this, users can access the services offered by the library without the help of a librarian. Users can also complete multiple actions within the library system quickly by interacting with the simple graphic user interfaces. This system takes user information as input to create accounts, book information to create the book collection, and outputs the formatted collection of books for users to interact with. Through the addition of new books and the management of existing ones, users can personalize this system to their needs.

#### **-Functionality:**

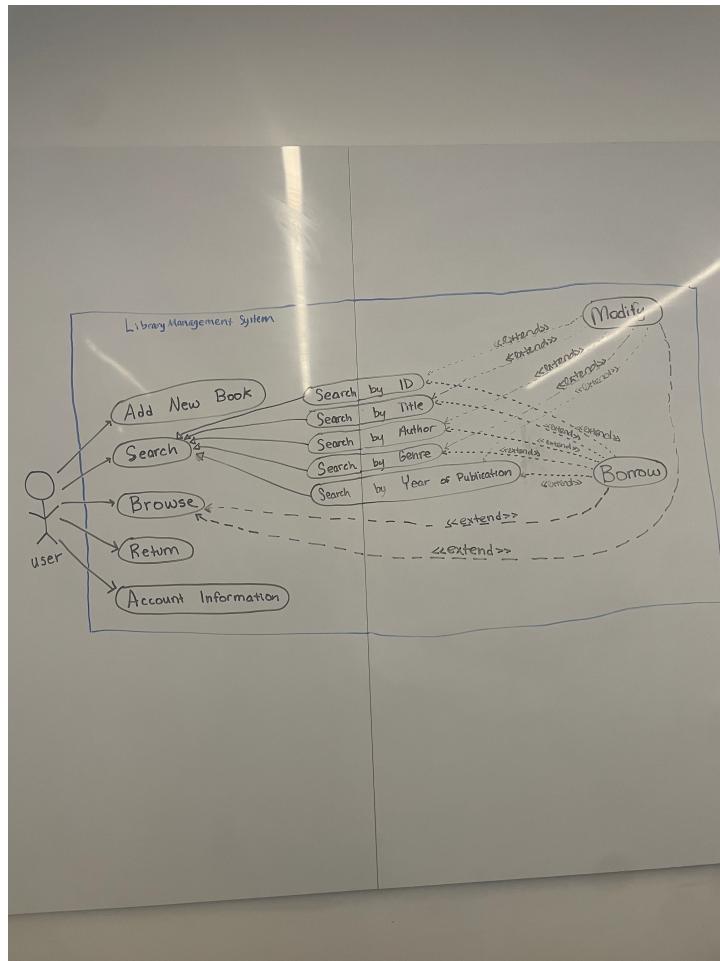
##### **1. Book Management:**

- Add New Books:
  - ID
  - Title
  - Year of publication
  - Genre
  - Author
- Modify existing book information
  - Title
  - Year of Publication
  - Genre
  - Author
- Borrow and Return Books
  - Search for book to borrow -> check availability -> Borrow
  - Return Books

#### **Special Requirements:**

Please make sure to save and exit using the button on the MainGUI when finished using the application.

## Use Case Diagram:

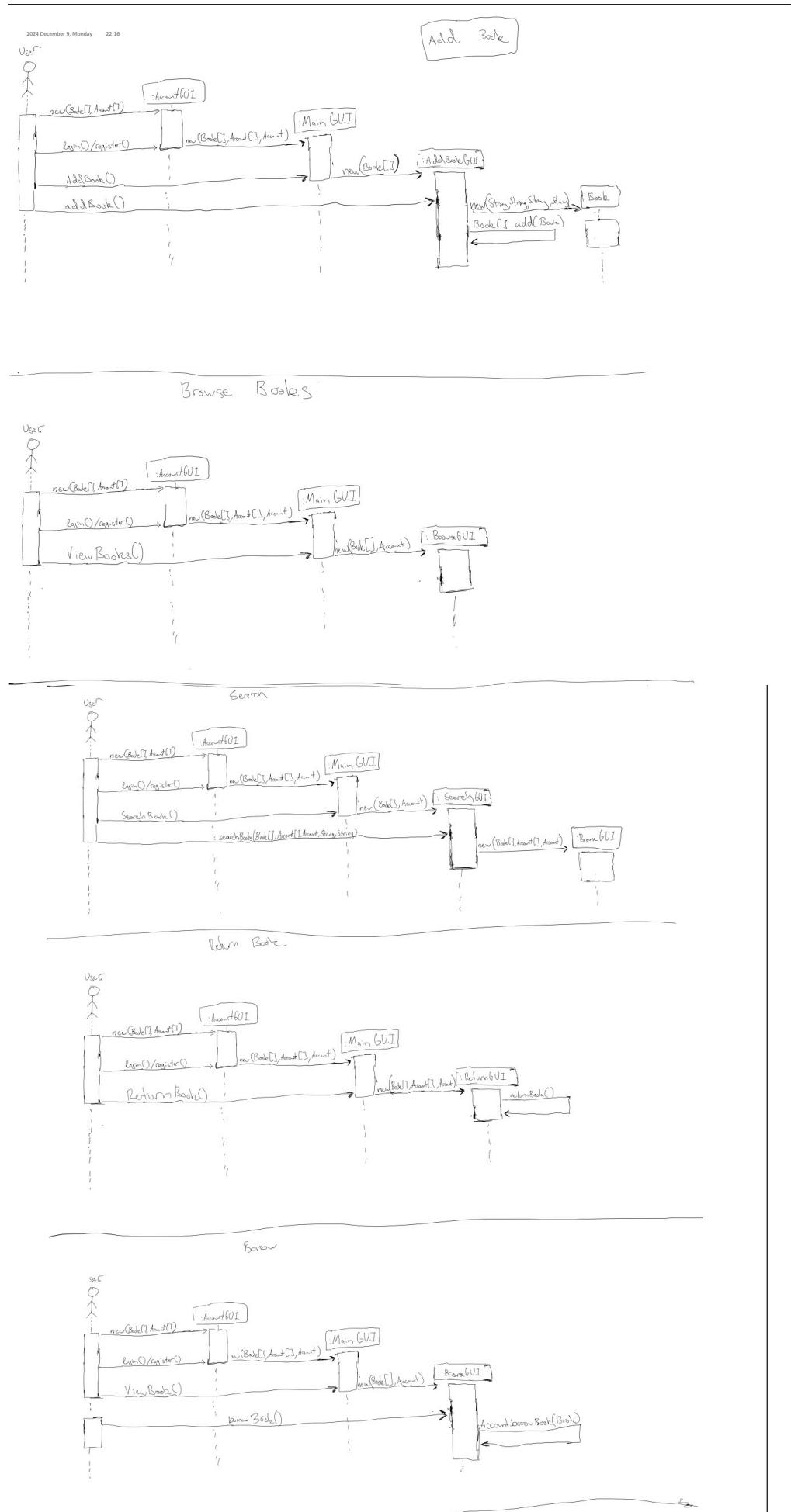


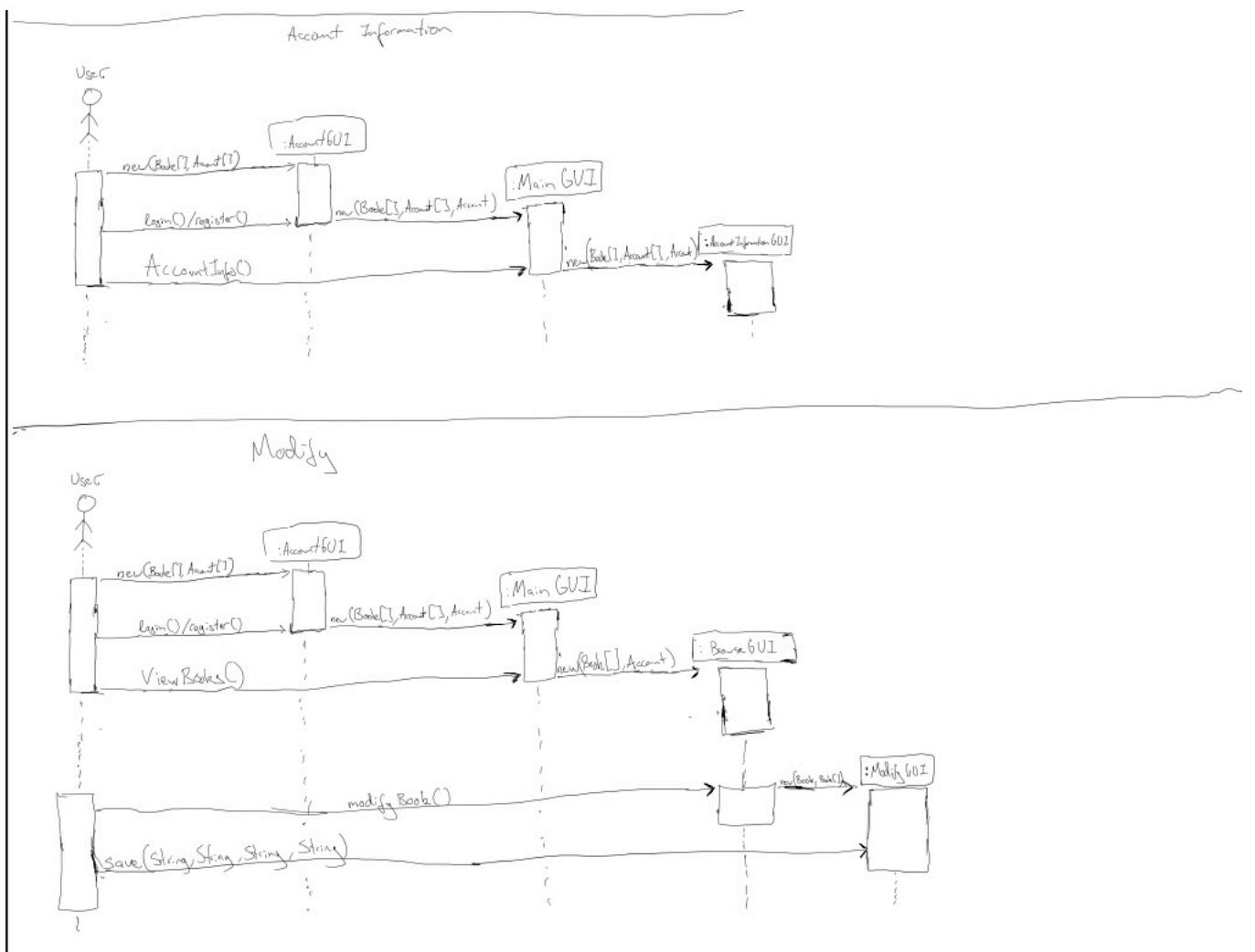
## Use Case Description Table:

Use Case Reference Number	Use Case Name	Overview	Related Use Cases	Actors
UC1	Add New Book	Allows users to add a new book to the library's collection.		User
UC2	Search	Allows users to search for a book by ID, title, author, year of publication, or genre.	UC8, UC9, UC10, UC11, UC12	User
UC3	Return	Allows user to return a previously borrowed book.		User
UC4	Browse	Allows user to view books in the library.	UC5, UC6	User
UC5	Modify	Allows user to change the information of a book in the library's collection.	UC4, UC7, UC8, UC9, UC10	User
UC6	Borrow	Allows user to borrow the available books	UC4, UC7, UC8, UC9, UC10	User
UC7	Search by Title	Allows user to search for a book by title.	UC2, UC5, UC6	User
UC8	Search by ID	Allows user to search for a book by ID.	UC2, UC5, UC6	User
UC9	Search by Author	Allows user to search for a book by author	UC2, UC5, UC6	User
UC10	Search by Year of Publication	Allows user to search for a book by year of publication.	UC2, UC5, UC6	User
UC11	Search by Genre	Allows user to search for a book by genre.	UC2, UC5, UC6	User
UC12	Account Information	Allows user to view their account information, including name, number of books borrowed, and borrowed book information.		User

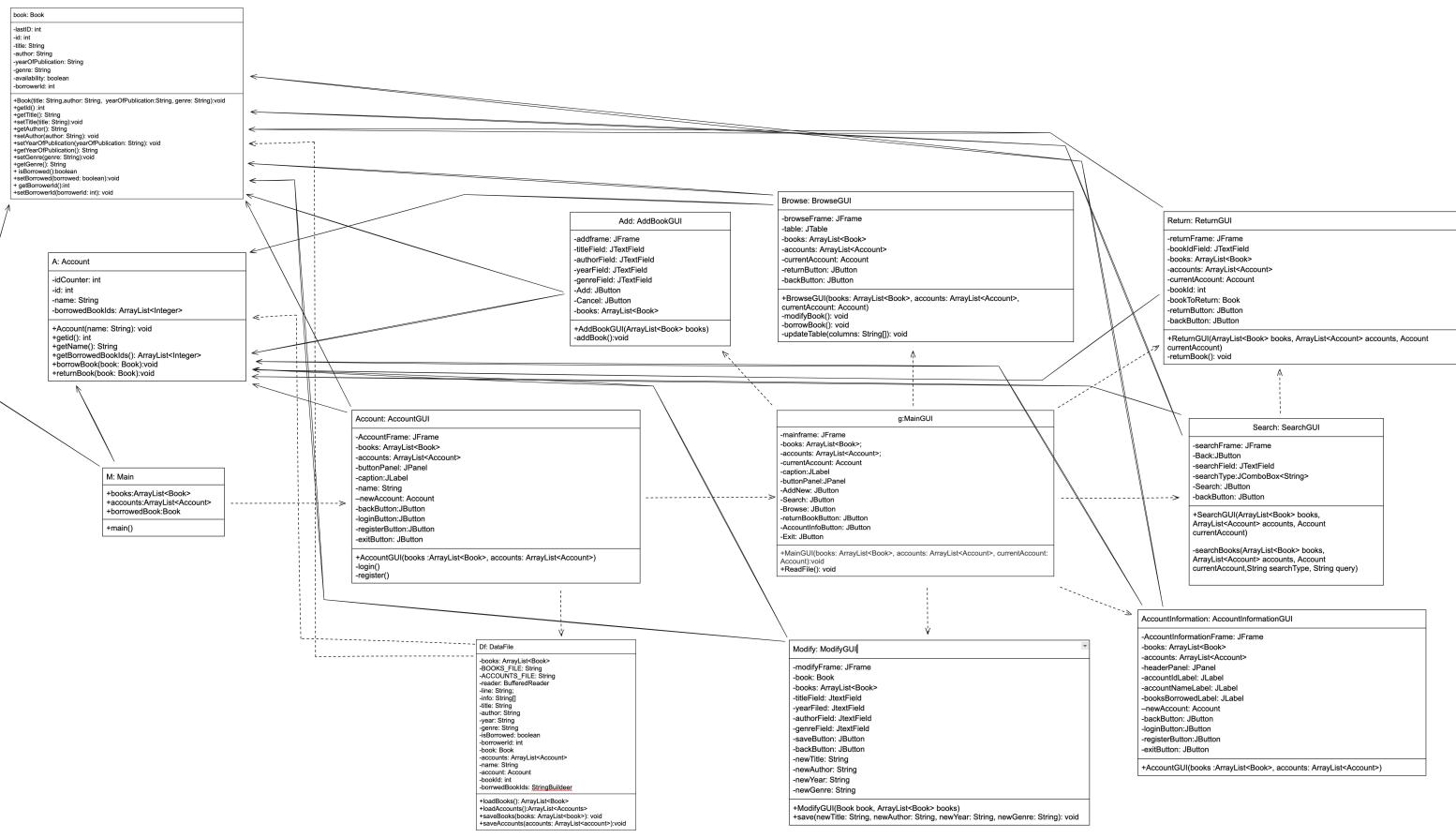
## System Design:

### Sequence Diagrams:





## Class Diagram:



### **Conclusion:**

Overall, the project successfully implemented the desired functionalities in a simple and effective way. Through cooperating, the team was able to overcome all challenges and develop this project. As a result, this project demonstrates a fully functional library management system equipped with GUIs to allow the user to directly interact with the system to add books, manage books, borrow and return books, and create accounts.

