

ALISHBA RASHID QURESHI

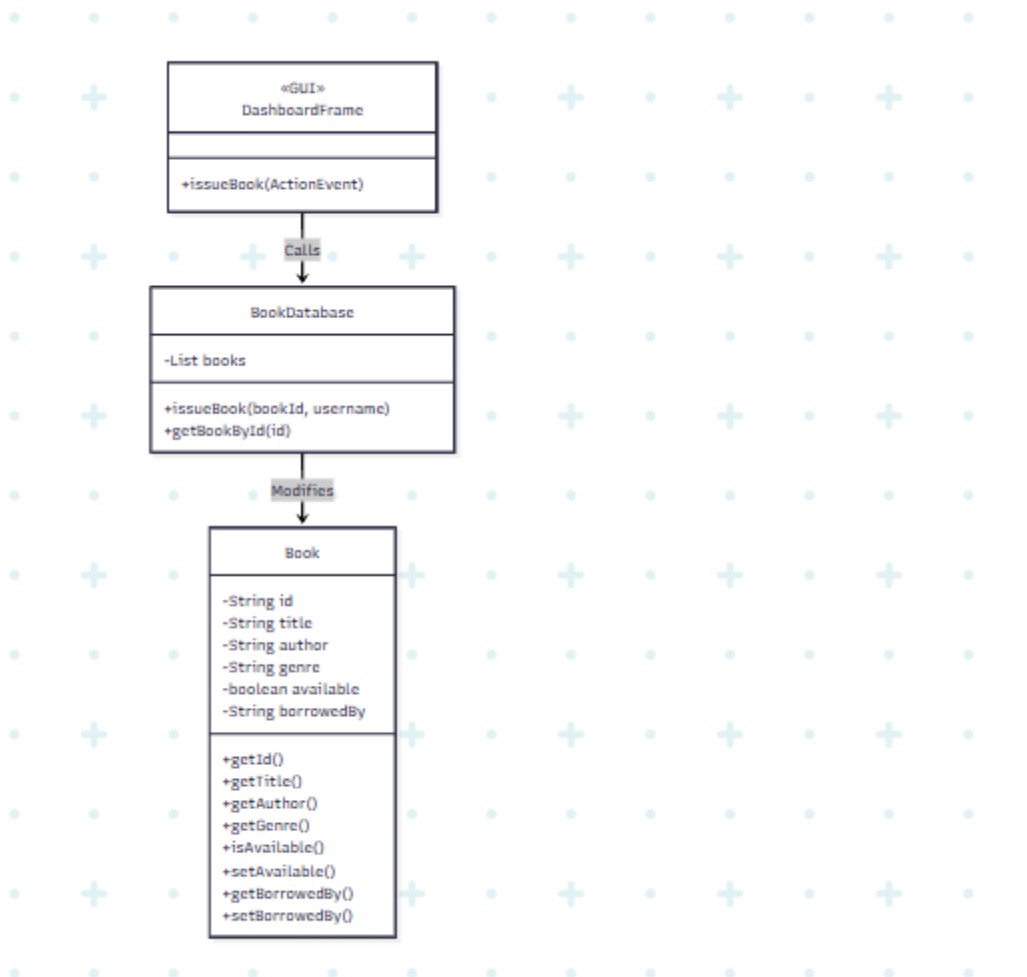
SP23-BSE-022

SYSTEM: LIBRARY MANAGEMENT SYSTEM

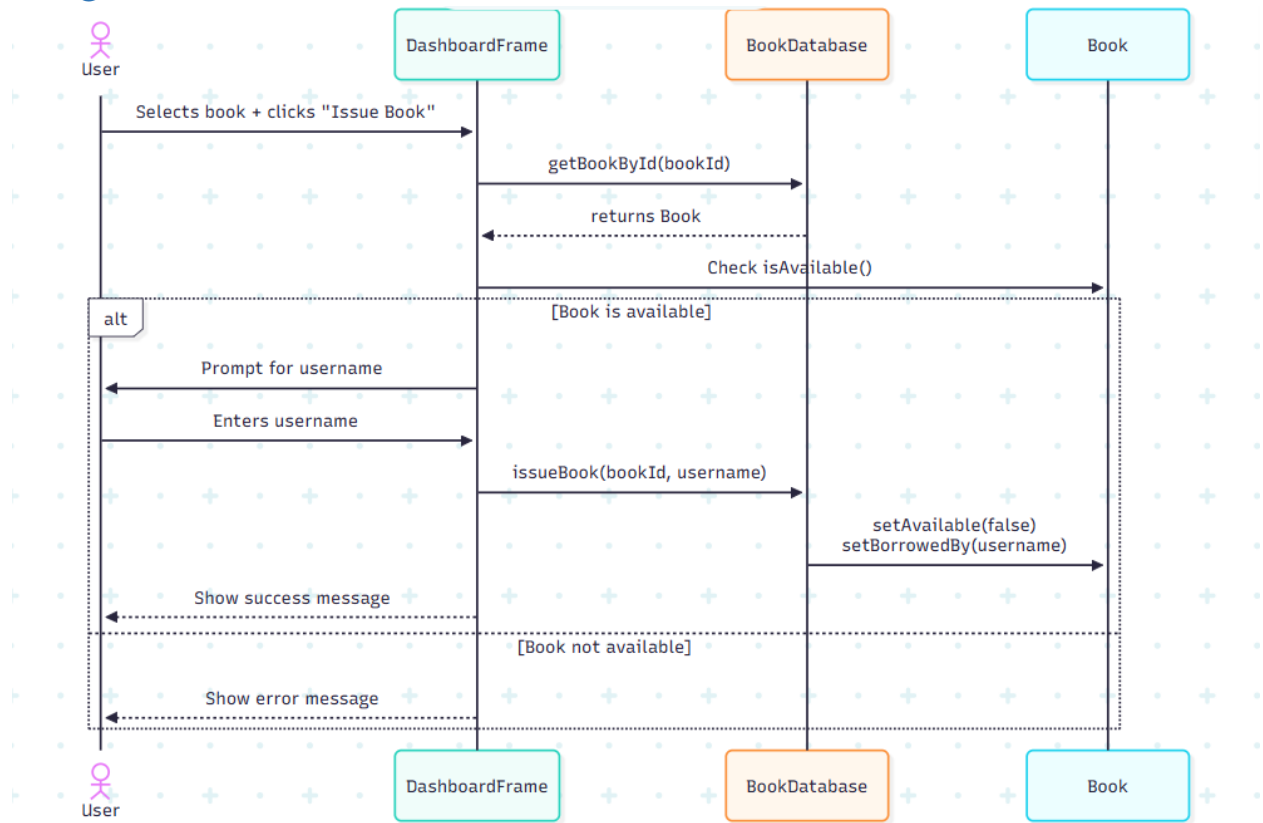
USE CASE 1:

ISSUE BOOK

CLASS DIAGRAM:



## SEQUENCE DIAGRAM:

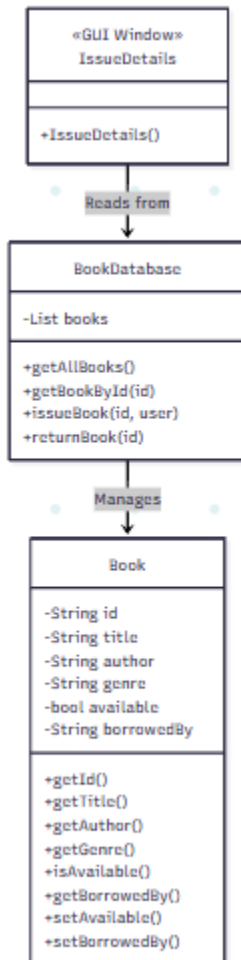


## FULLY DRESSED USE CASE:

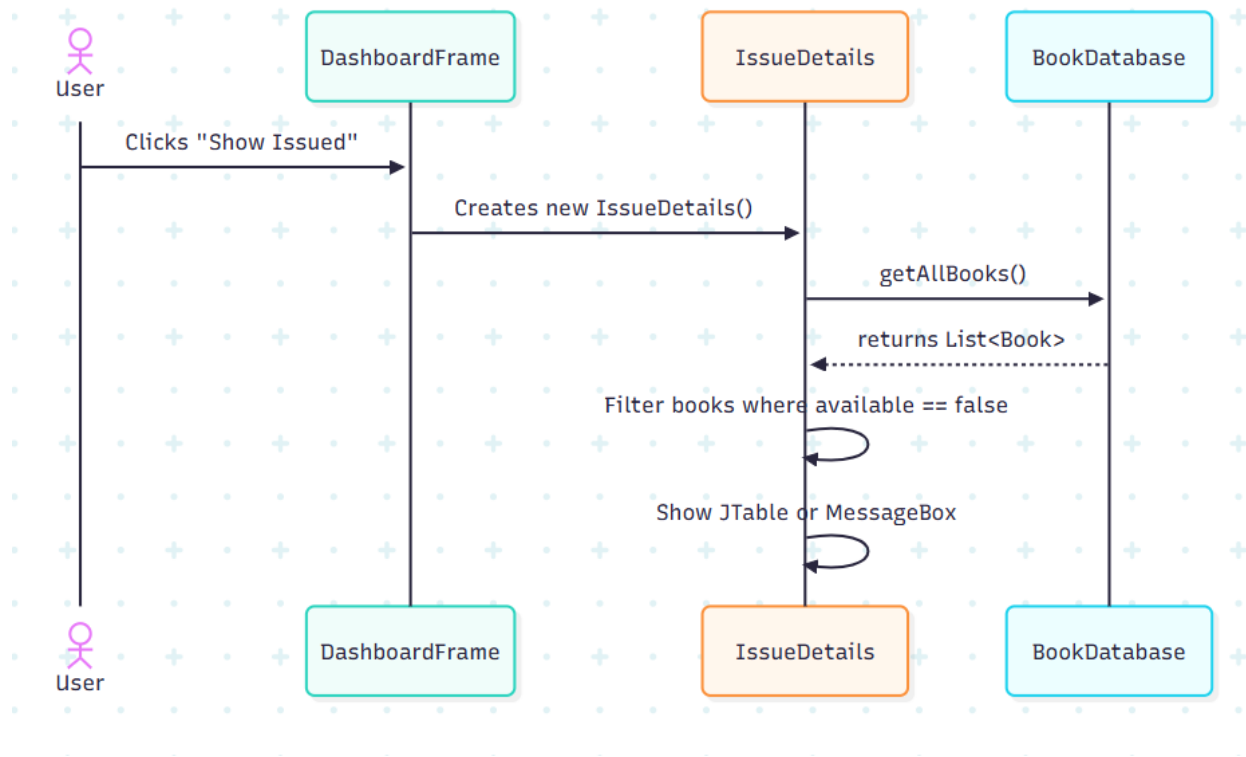
| Use Case Element         | Details  |
|--------------------------|--|
| <b>Use Case Name</b>     | Show Issued Books  |
| <b>Use Case ID</b>       | UC-01  |
| <b>Primary Actor</b>     | System User  |
| <b>Secondary Actors</b>  | None   |
| <b>Brief Description</b> | This use case allows the librarian to view a list of all books that are currently issued to members. If no books are issued, an appropriate message is shown.                              |
| <b>Pre-conditions</b>    | <ul style="list-style-type: none"> <li>- System is running</li> <li>- Librarian is logged in</li> <li>- Book records exist in the system</li> </ul>  |
| <b>Post-conditions</b>   | <ul style="list-style-type: none"> <li>- Table of issued books is displayed (if any)</li> <li>- If no issued books, a dialog with "No books issued" is shown</li> </ul>                    |
| <b>Trigger</b>           | Librarian clicks the "Show Issued Books" button on the main dashboard  |
| <b>Main Flow</b>         | <ol style="list-style-type: none"> <li>1. Librarian clicks "Show Issued Books"</li> <li>2. System opens <code>IssueDetails</code> window</li> <li>3. System retrieves all books</li> </ol> |

|                            |   |
|----------------------------|---|
|                            | 4. System filters issued books ( <code>available == false</code> )<br>5. If books exist, they are shown in a table<br>6. If no books are issued, a message is displayed |
| <b>Alternative Flow A1</b> | <b>Condition:</b> No books are issued<br><b>System Response:</b> Show dialog "No books issued" and close IssueDetails window  |
| <b>Business Rules</b>      | - Only books with <code>available == false</code> are considered issued<br>- Issued book table shows: ID, Title, Author, Genre, Borrowed By                             |
| <b>Exceptions</b>          | - If <code>BookDatabase</code> is empty, show "No books issued"<br>- If book fields are null, table may show blank cells (but system will not crash)                    |

## USE CASE 2: ISSUE BOOK DETAILS CLASS DIAGRAM:



## SEQUENCE DIAGRAM:



## FULLY DRESSED USE CASE:

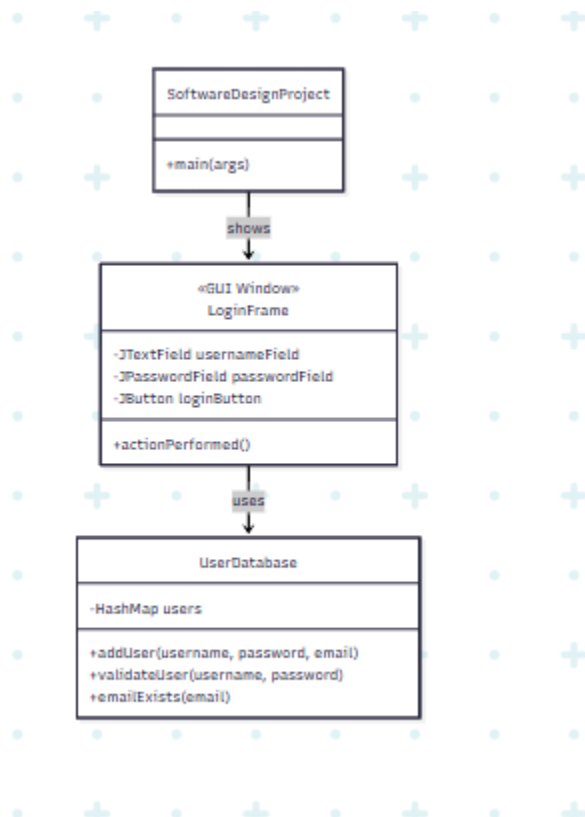
| Use Case Element         | Details  |
|--------------------------|--|
| <b>Use Case Name</b>     | Show Issued Books  |
| <b>Use Case ID</b>       | UC-02  |
| <b>Primary Actor</b>     | User   |
| <b>Secondary Actors</b>  | None   |
| <b>Brief Description</b> | This use case allows the librarian to view a list of all books that are currently issued to members. If no books are issued, an appropriate message is shown.  |
| <b>Pre-conditions</b>    | <ul style="list-style-type: none"> <li>- System is running</li> <li>- Librarian is logged in</li> <li>- Book records exist in the system</li> </ul>  |
| <b>Post-conditions</b>   | <ul style="list-style-type: none"> <li>- Table of issued books is displayed (if any)</li> <li>- If no issued books, a dialog with "No books issued" is shown</li> </ul>  |
| <b>Trigger</b>           | Librarian clicks the <b>"Show Issued Books"</b> button on the main dashboard   |
| <b>Main Flow</b>         | <ol style="list-style-type: none"> <li>1. Librarian clicks "Show Issued Books"</li> <li>2. System opens <code>IssueDetails</code> window</li> <li>3. System retrieves all books</li> <li>4. System filters issued books (<code>available == false</code>)</li> </ol> |

|                            |   |
|----------------------------|---|
|                            | 5. If books exist, they are shown in a table<br>6. If no books are issued, a message is displayed   |
| <b>Alternative Flow A1</b> | <b>Condition:</b> No books are issued<br><b>System Response:</b> Show dialog "No books issued" and close IssueDetails window                |
| <b>Business Rules</b>      | - Only books with <code>available == false</code> are considered issued<br>- Issued book table shows: ID, Title, Author, Genre, Borrowed By |
| <b>Exceptions</b>          | - If BookDatabase is empty, show "No books issued"<br>- If book fields are null, table may show blank cells (but system will not crash)     |

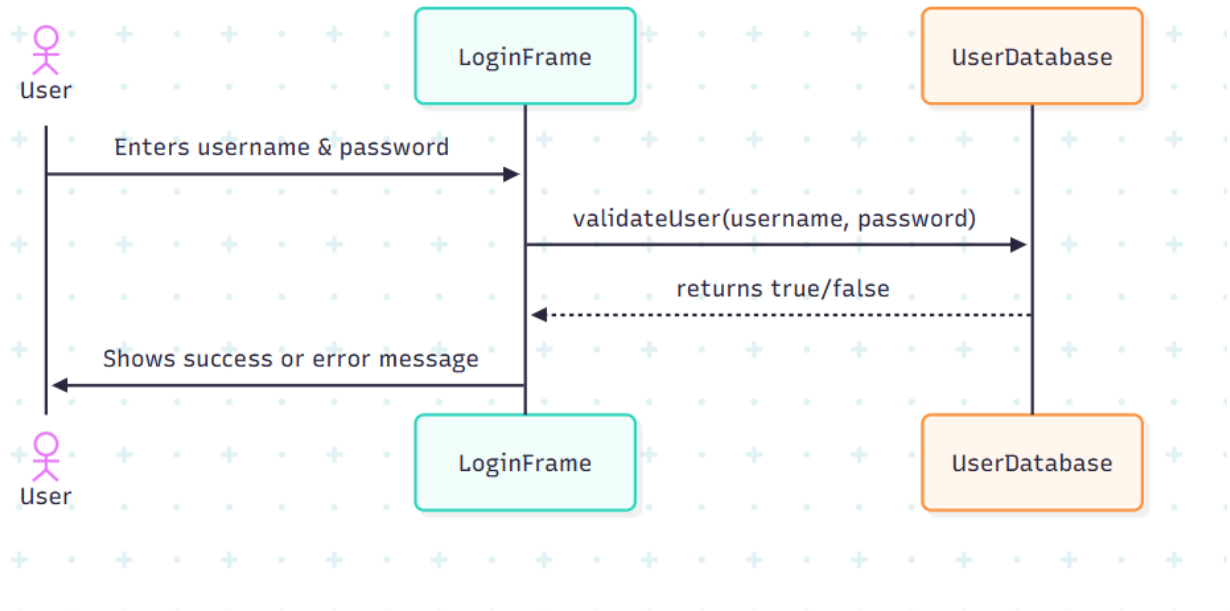
## USE CASE 3:

LOGIN:

CLASS DIAGRAM:



SEQUENCE DIAGRAM:



### FULLY DRESSED USE CASE:

| Use Case Element    | Details   |
|---------------------|---|
| Use Case Name       | Login User  |
| Use Case ID         | UC-03   |
| Primary Actor       | User (Librarian or Member)  |
| Secondary Actors    | None  |
| Brief Description   | This use case allows a registered user to log in to the system using valid credentials. If credentials are invalid, an error message is shown.                                |
| Pre-conditions      | - System is running- User is already registered in the system   |
| Post-conditions     | - User is either logged in and directed to the dashboard- Or shown an error and remains on the login screen   |
| Trigger             | User enters username and password, then clicks the "Login" button   |
| Main Flow           | 1. User opens Login screen (LoginFrame)2. Enters username and password3. Clicks Login4. System calls <code>UserDatabase.validateUser()</code> 5. If valid, dashboard is shown |
| Alternative Flow A1 | <b>Condition:</b> Invalid credentials<br><b>System Response:</b> Show dialog "Invalid username or password" and stay on Login screen  |
| Business Rules      | - Only registered users can log in- Username and password must match exactly as stored  |
| Exceptions          | - Empty username or password → Show dialog "All fields required"- If user record is corrupted or missing, login will fail silently or with generic error                      |

