

## **Exercise10**

**Draw a use case diagram for Library Management System is an automation system used to manage a library and the different resource management required in it like cataloguing of books, allowing check out and return of books, invoicing, user management, etc. The user can search for books details using few book properties (Book ID, Title, Author, and Publisher). Searching should return details about all the book copies that match the search query.**

### **Aim**

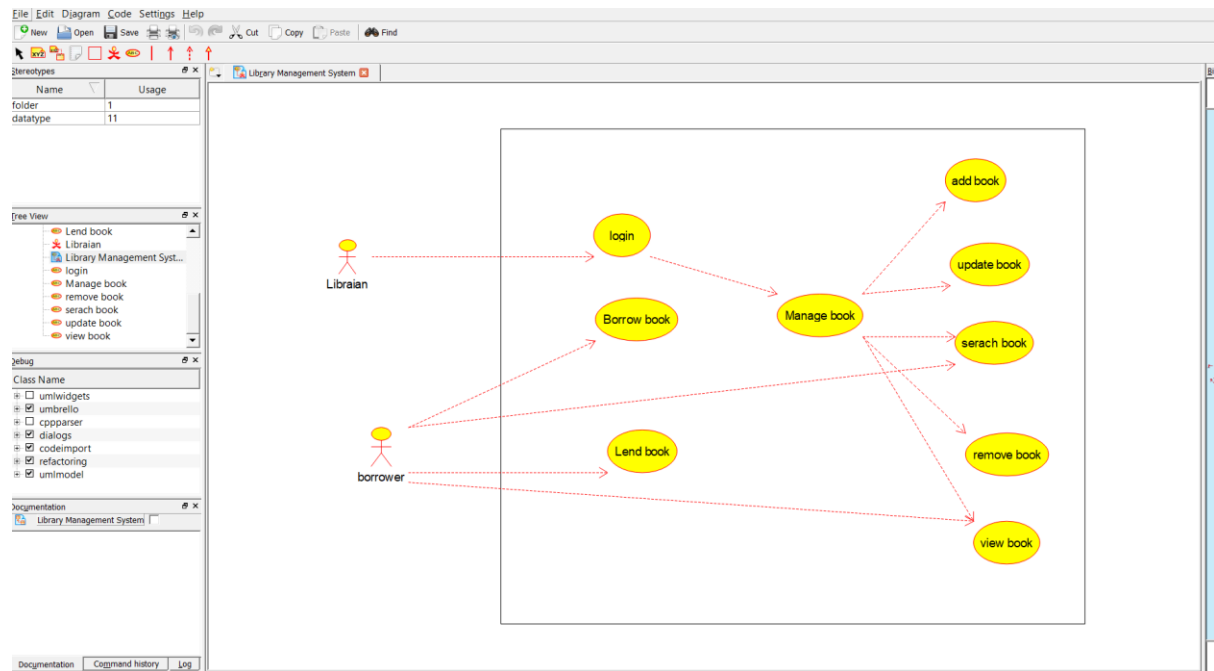
To design a Use Case Diagram for a Library Management System (LMS) that automates library operations such as cataloging, book checkouts and returns, invoicing, and user management, ensuring efficient resource handling.

### **Procedure**

1. Identify Key Actors – Define primary actors like User (Library Member), Librarian, and Administrator.
2. Define Use Cases for Users – Actions include Search Books (by Book ID, Title, Author, Publisher), Check Out Books, Return Books, View Book Details.
3. Define Use Cases for Librarians – Actions include Catalog Books, Issue Books, Receive Returned Books, Maintain Inventory, Manage Reservations.
4. Define Use Cases for Administrators – Actions include Manage User Accounts, Manage Book Inventory, Manage Book Requests, Generate Reports.
5. Draw the Use Case Diagram – Represent actors and use cases, linking them with appropriate relationships (e.g., User to Search Books, Librarian to Issue Books).
6. Include System Processes – Add Book Search, Book Checkout, Book Return, Book Cataloging, Inventory Management as system operations.
7. Validate and Optimize – Ensure clarity in relationships, ensure all actors' actions are covered, and refine the diagram for completeness.

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## Output



## Result

Thus the UML diagram for the Library Management System has been implemented successfully.

