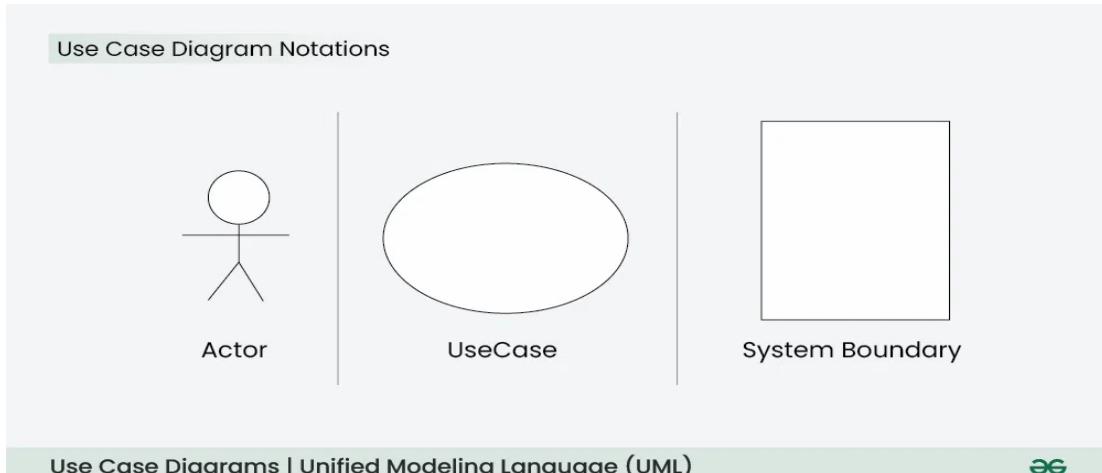


## Practical No 04

**Aim:** Prepare use cases and draw use case diagram using modeling tools

### 1. What is a Use Case Diagram in UML?

A Use Case Diagram is a type of Unified Modeling Language (UML) diagram that represents the interaction between actors (users or external systems) and a system under consideration to accomplish specific goals. It provides a high-level view of the system's functionality by illustrating the various ways users can interact with it.



### Use Case Diagram for Library Management System

Let's visually map out the relationships and interactions. Below is the textual description of what the diagram would look like:

#### 1. Actors:

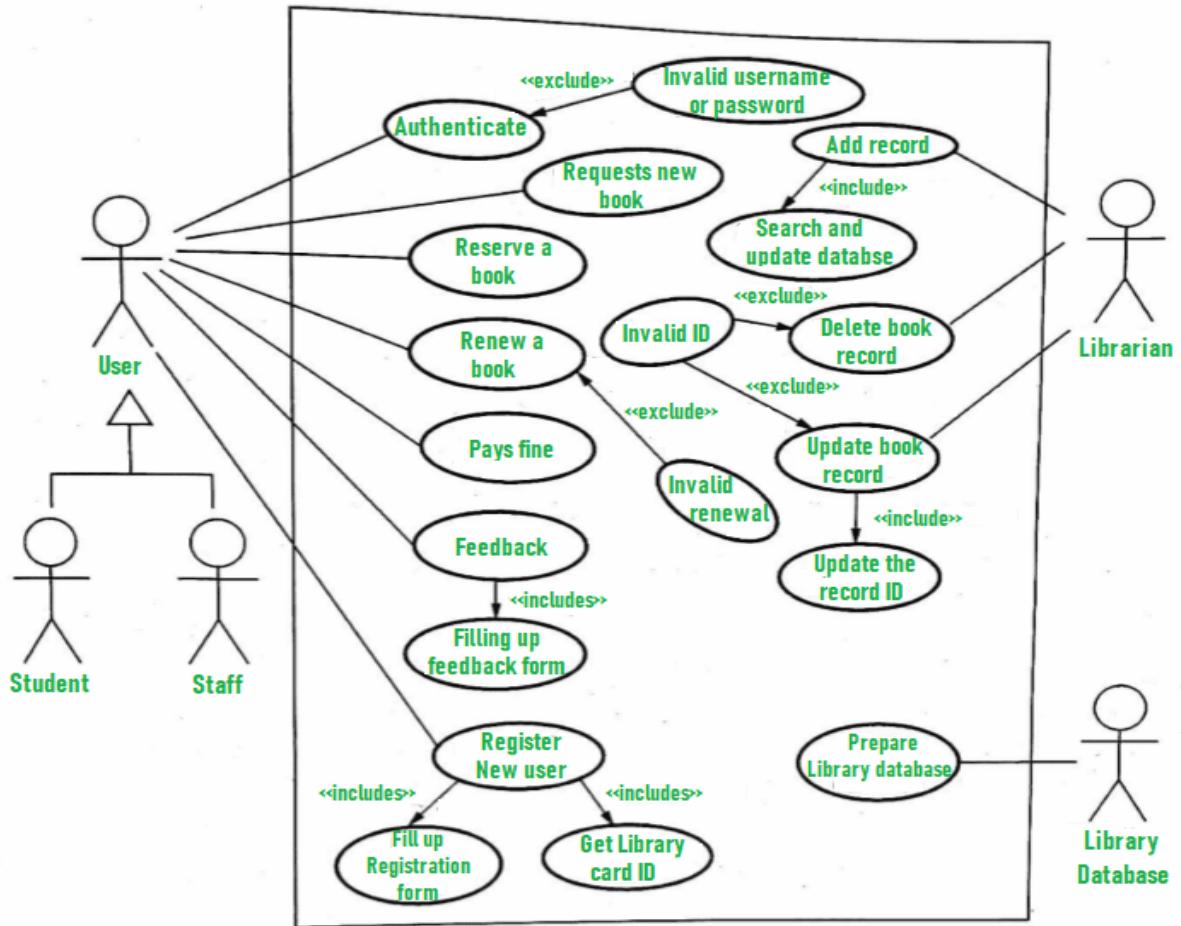
- User (Staff or Student)
- Librarian

#### 1. Use Cases:

- Register New User
- Issue Library Card
- Request New Book
- Reserve Book
- Renew Book
- Pay Fine
- Fill Feedback Form
- Manage Records
- Delete Records
- Update Database

## 1. System Boundary:

- The system boundary will encompass all the use cases mentioned above.



*Use Case Diagram For Library Management System*

## Explanation of Use Case Diagram of a Library Management System

Here, we will understand the designing use case diagram for the library management system. Some scenarios of the system are as follows

1. User who registers himself as a new user initially is regarded as staff or student for the library system.
  - For the user to get registered as a new user, registration forms are available that is needed to be fulfilled by the user.
  - After registration, a library card is issued to the user by the librarian. On the library card, an ID is assigned to cardholder or user.
1. After getting the library card, a new book is requested by the user as per there requirement.

1. After, requesting, the desired book or the requested book is reserved by the user that means no other user can request for that book.
1. Now, the user can renew a book that means the user can get a new due date for the desired book if the user has renewed them.
1. If the user somehow forgets to return the book before the due date, then the user pays fine. Or if the user forgets to renew the book till the due date, then the book will be overdue and the user pays fine.
1. User can fill the feedback form available if they want to.
1. Librarian has a key role in this system. Librarian adds the records in the library database about each student or user every time issuing the book or returning the book, or paying fine.
1. Librarian also deletes the record of a particular student if the student leaves the college or passed out from the college. If the book no longer exists in the library, then the record of the particular book is also deleted.
1. Updating database is the important role of Librarian.

**Conclusion:** use cases and their diagrams play a pivotal role in requirement gathering and system design, bridging the gap between users' needs and the system's functional implementation.