UML Report – Exercise 4

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1 Exercise 4: Library Management System

This exercise models two use cases of a library management system:
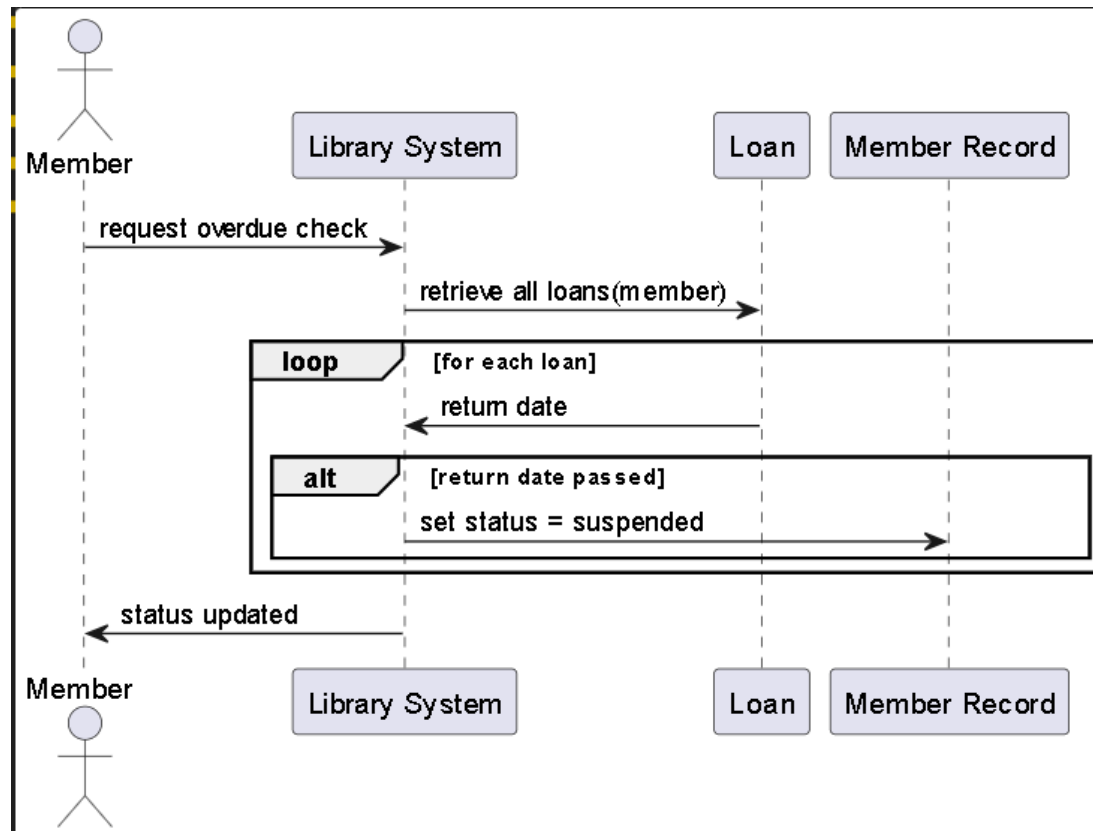
- Check Overdue

- Borrow a Book

1.1 1. Use Case: Check Overdue

Scenario:

1. The system retrieves all the member's loans.

2. For each loan, it checks if the return date has passed.

3. If yes, the member's status is set to **suspended**.

Sequence Diagram:

1.2 2. Use Case: Borrow a Book

Scenario:

1. The member requests to borrow a book.

2. The librarian selects the borrow functionality.

3. The system checks if the member is allowed to borrow.

4. It checks overdue books and updates status if needed.

5. It verifies that the book is available.

6. If all checks pass, a new loan is created and associated.

7. The book is marked unavailable.

8. The number of borrowed books is incremented.

Sequence Diagram: