

UML Design for Library Reservation System

ABCDE

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Introduction

This document provides the UML (Unified Modeling Language) diagrams for a Library Reservation System designed for university students. The system allows students to reserve library spaces, ensuring an organized and efficient reservation process.

Use Case Diagram

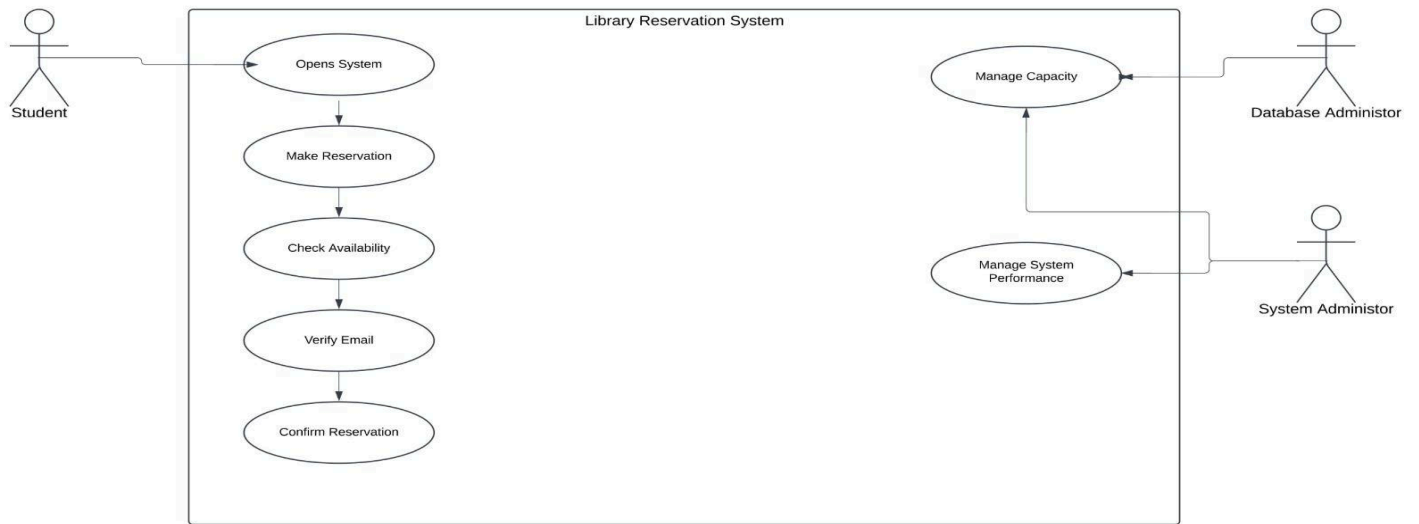


Figure 1: Use Case Diagram

Use Case Descriptions

Actors:

1. Student:
 - Primary user of the system who interacts to make reservations.
2. Database Administrator:
 - Responsible for managing the capacity of the library resources.
3. System Administrator:
 - Ensures the system's overall performance and reliability.

Use Cases and Descriptions:

1. Open System

- Actor: Student
- Description: The student accesses the Library Reservation System to begin the reservation process.

2. Make Reservation

- Actor: Student
- Description: The student selects a study area and chooses a date and time for the reservation.

3. Check Availability

- Actor: Student
- Description: The system verifies if the selected study area is available for the chosen time.

4. Verify Email

- Actor: Student
- Description: The system sends an email to the student for verification to ensure the reservation details are correct.

5. Confirm Reservation

- Actor: Student
- Description: The student confirms the reservation, completing the process.

6. Manage Capacity

- Actor: Database Administrator
- Description: The database administrator adjusts the number of available resources based on library capacity or policy updates.

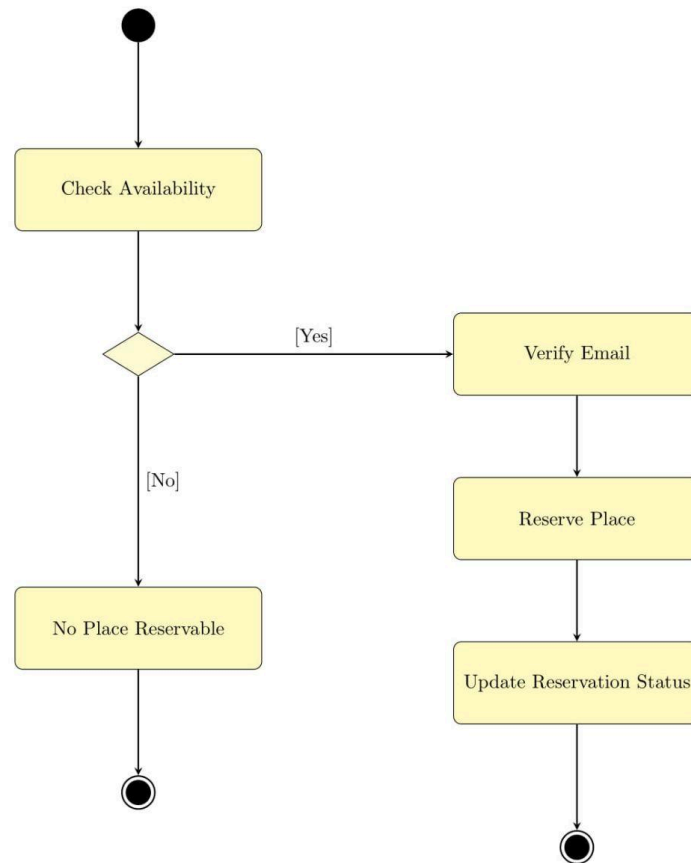
7. Manage System Performance

- Actor: System Administrator
- Description: The system administrator monitors and optimizes the system to ensure smooth operation and handle technical issues.

Relationships:

- The Student interacts with the core reservation functionalities (making and confirming reservations).
- The Database Administrator and System Administrator handle backend operations to maintain system functionality and resource availability.

Library Reservation System Activity Diagram



1

Figure 2: Activity Diagram

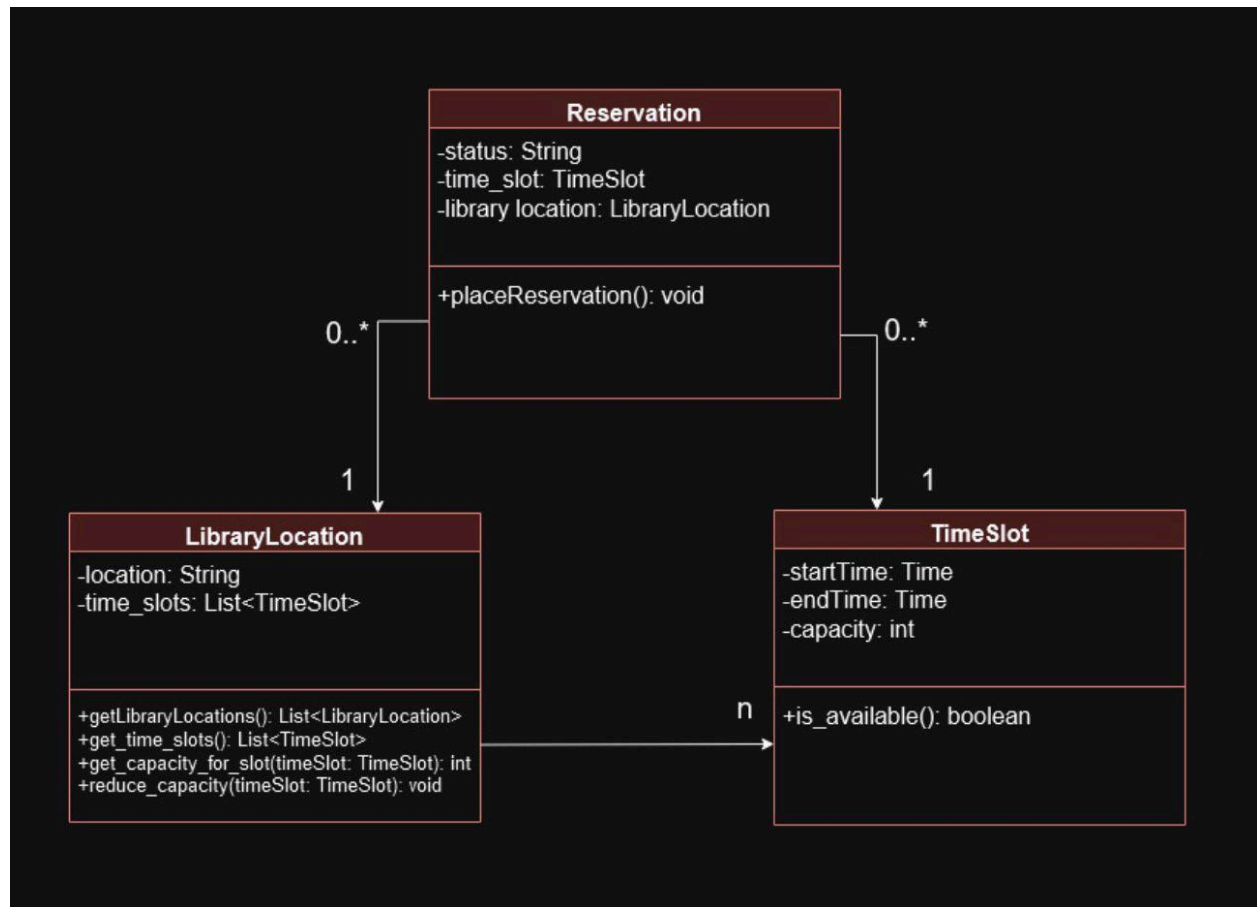


Figure 3: Class Diagram

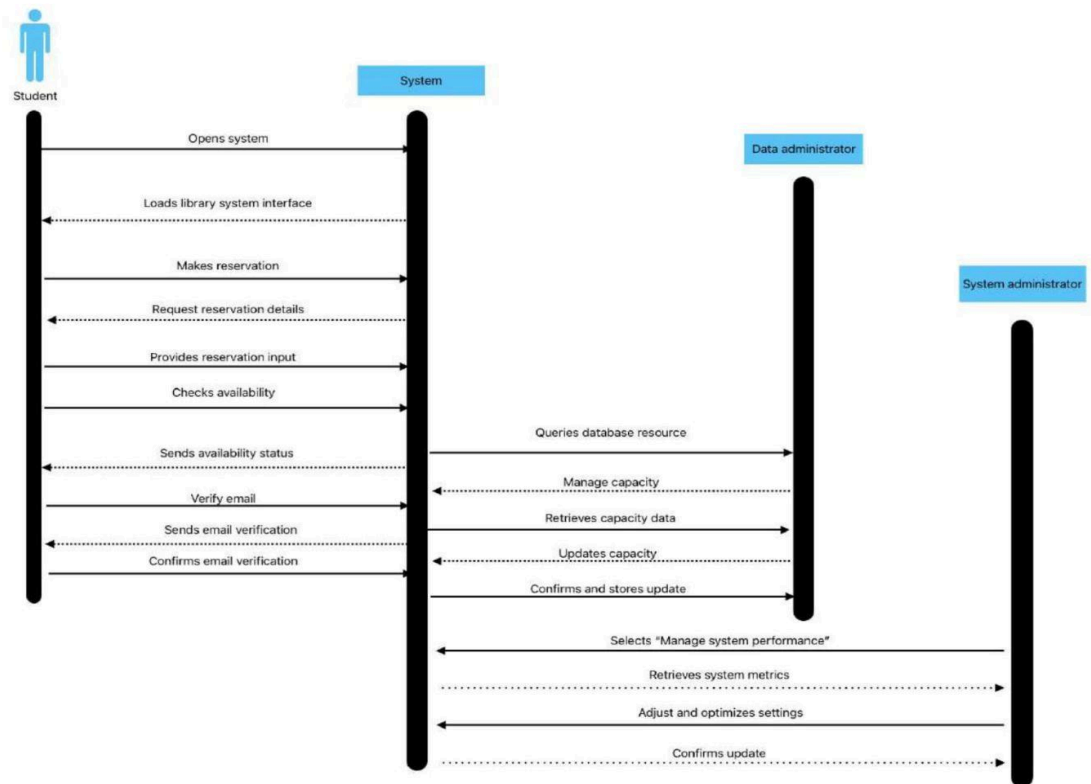


Figure 4: Sequence Diagram