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## Use Case Diagram

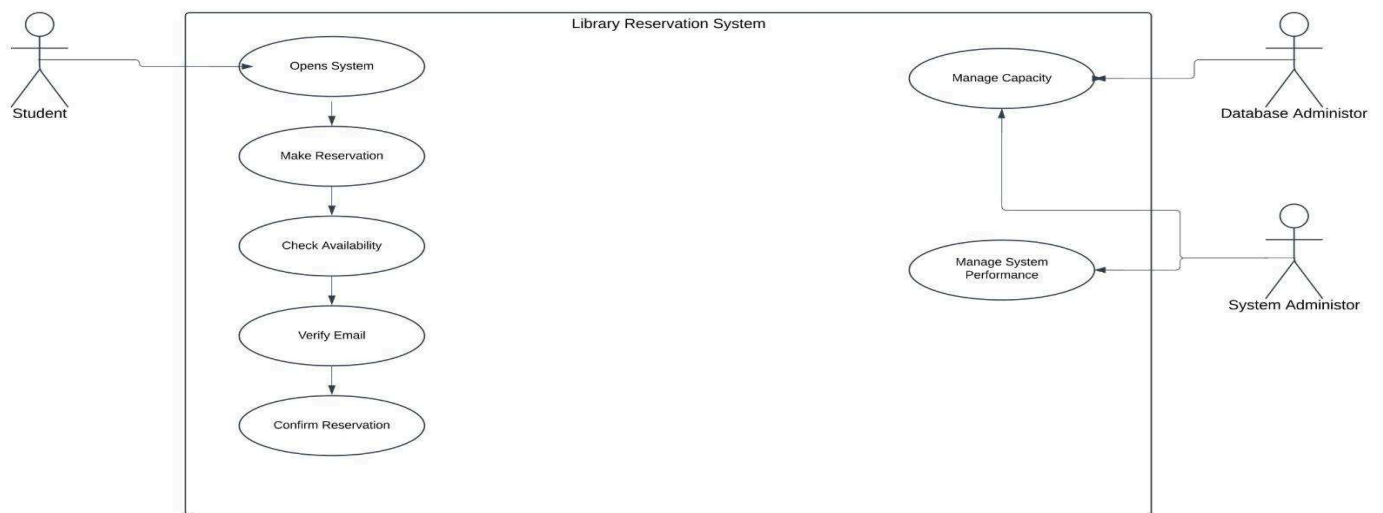


Figure 1: Use Case Diagram

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## 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.

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#### 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.

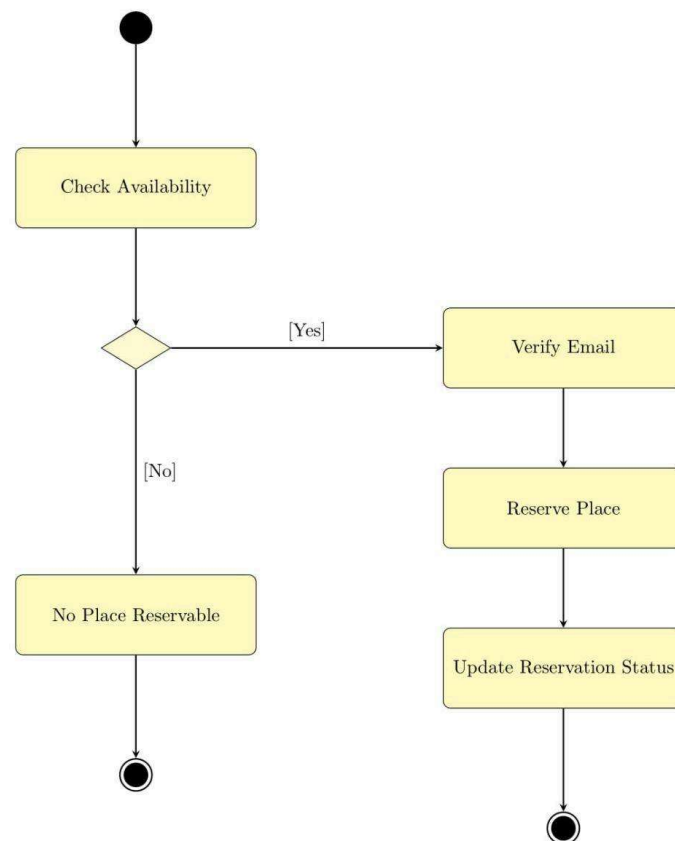
#### 7. Manage System Performance

- 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



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Figure 2: Activity Diagram

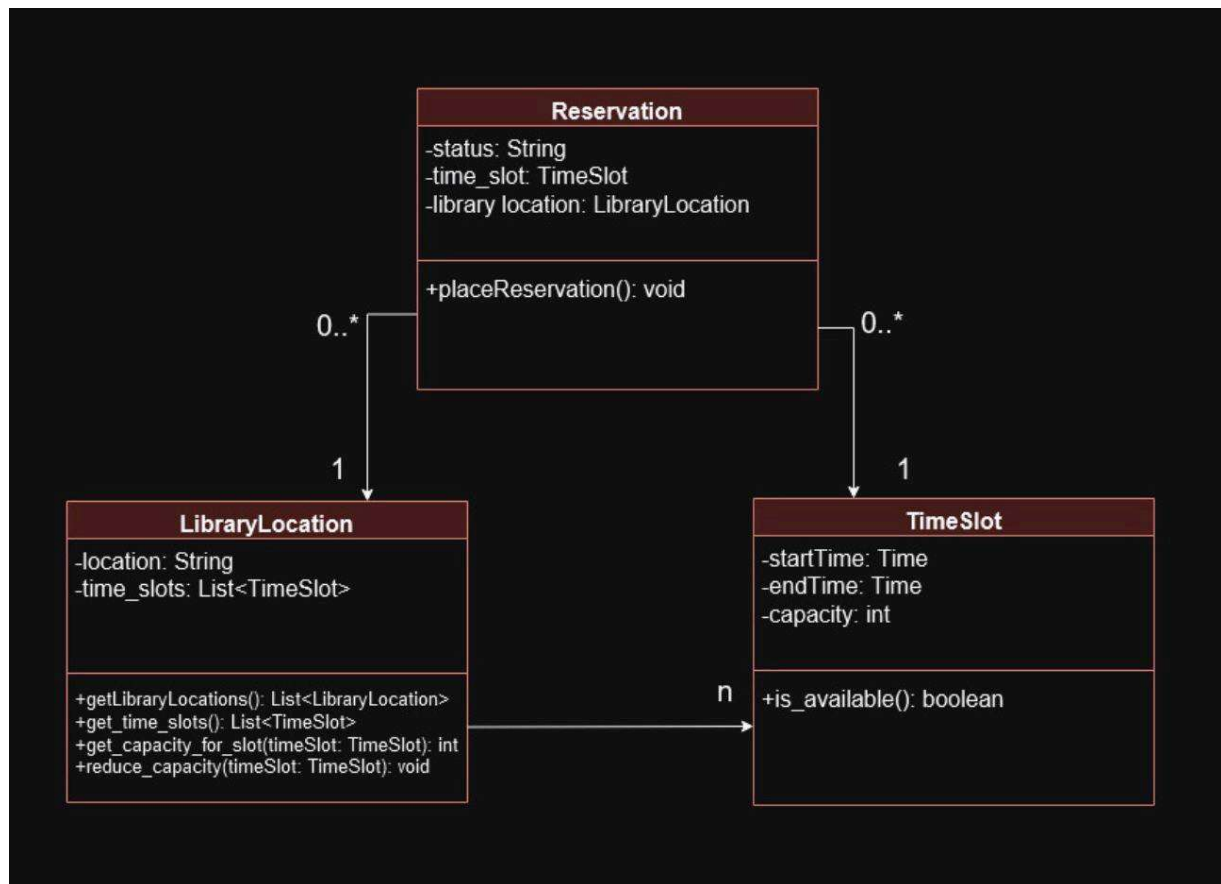


Figure 3: Class Diagram