American International University-Bangladesh (AIUB)

Department of Computer Science and Engineering
Faculty of Science &Technology (FST)
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CSC 00191- Object Oriented Analysis and Design (OOAD)

Section: P

Project Title:
University Resource Management System (URMS)

Submitted by:

Name	ID
Niloy Paul	23-50400-1
Saumyadip Das	23-50404-1
Nusrat Jahan Raina	23-50416-1

Submitted to:

MD. ANWARUL KABIR

Associate Professor

Department of Computer Science

1. Project Title:
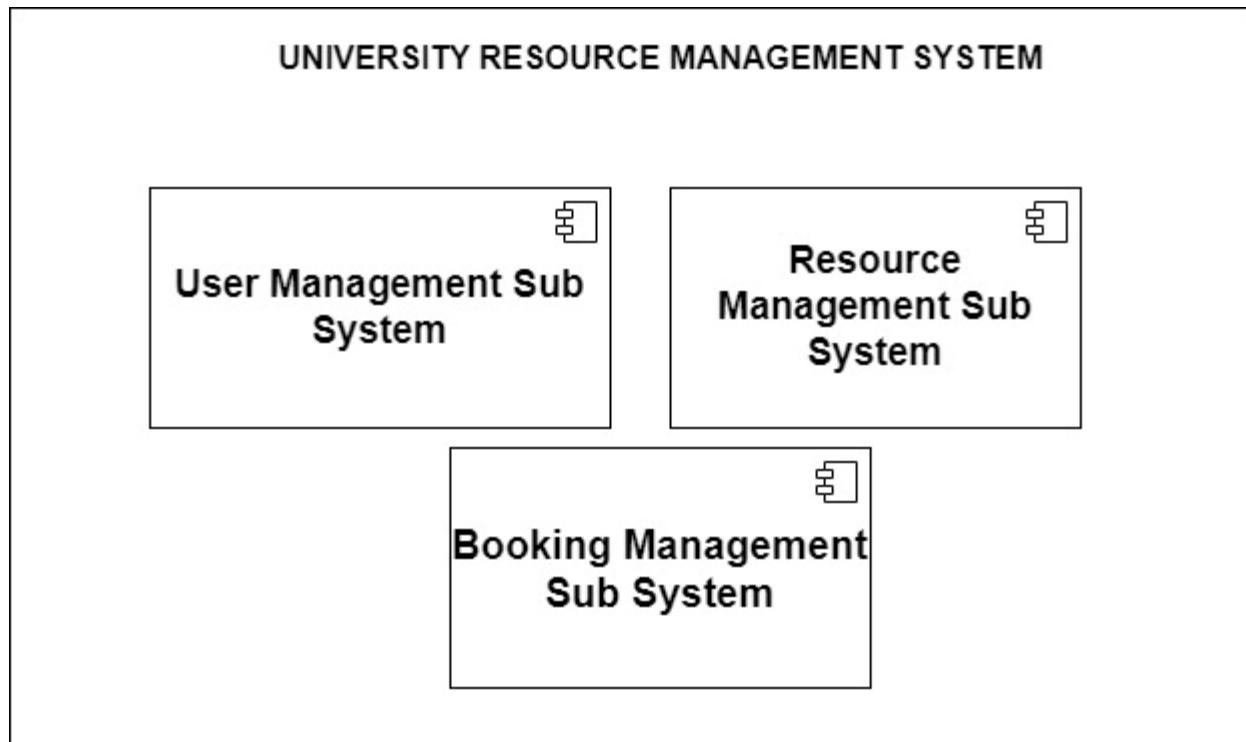
University Resource Management System (URMS)

2. Project Overview:

In the University Resource Management System (URMS), users such as teachers, students, and office staff can book various resources like classrooms, playgrounds, and auditoriums based on their needs. The process begins with the user logging into the system, where their credentials are authenticated. Once logged in, the user browses available resources, selects a resource, and submits a booking request. The system then notifies the administrator of the request. The admin reviews the booking, and based on availability and priority, either approves or rejects the request. Afterward, the system updates the booking status and sends a notification to the user about the decision. If the booking is approved, the system asks the user if there are any issues with the resource. If an issue is reported, the user submits a report, which is then sent to the admin. The admin resolves the issue and updates the system, ensuring the booking status reflects any changes. This process involves various components like user authentication, resource management, booking approval, issue reporting, and status updates.
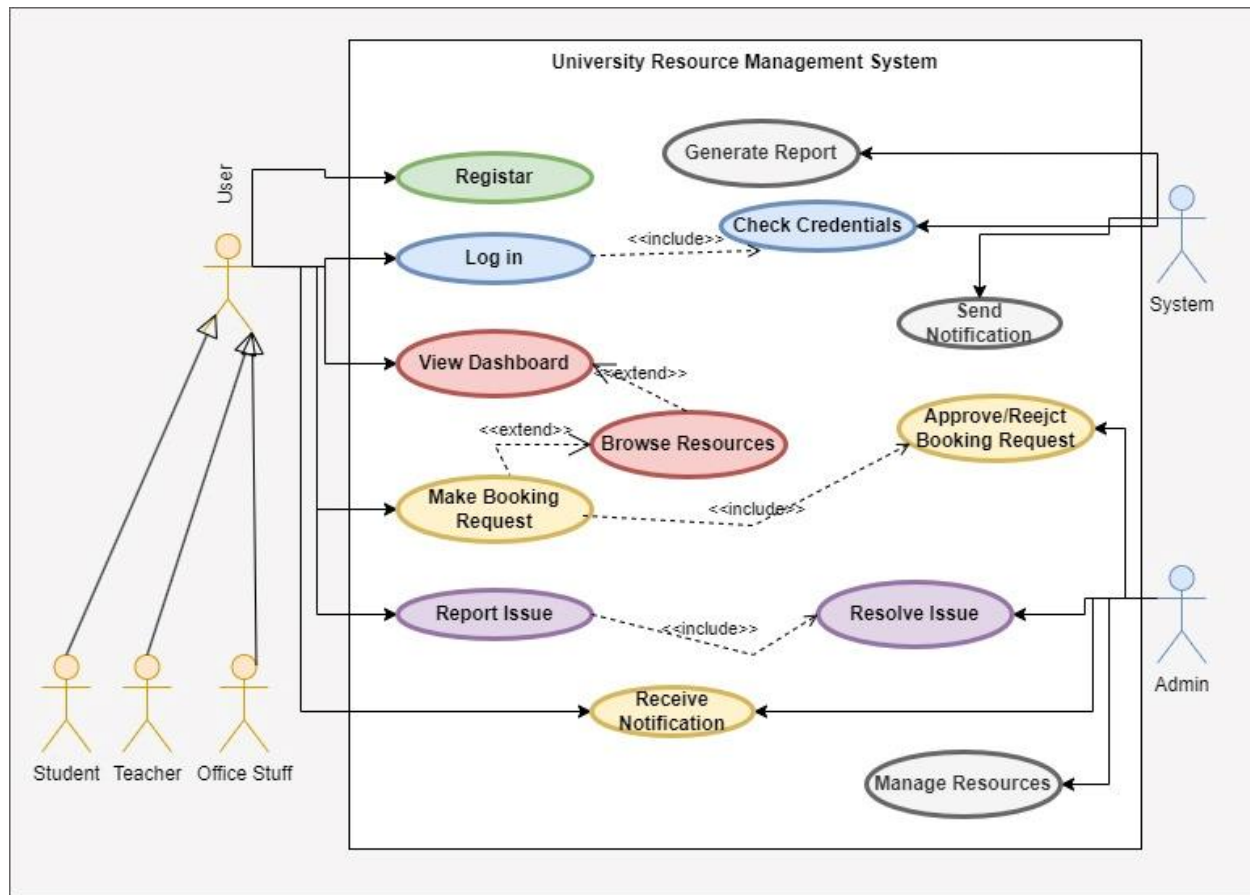
3. Justification:

Developing the University Resource Management System (URMS) is essential for addressing the inefficiencies and challenges associated with manual resource booking and management in universities. Currently, the lack of a centralized system often leads to scheduling conflicts, underutilization of resources, and administrative burdens. By implementing URMS, universities can streamline the booking process, ensuring that resources such as classrooms, laboratories, and playgrounds are utilized optimally. The system reduces administrative overhead by automating approval workflows and providing real-time visibility into resource availability. Furthermore, it enhances transparency and accountability, as both users and administrators have clear insights into bookings and resource usage. Overall, URMS fosters a more organized, efficient, and user-friendly environment, significantly improving the management of university resources and supporting the institution's operational needs.
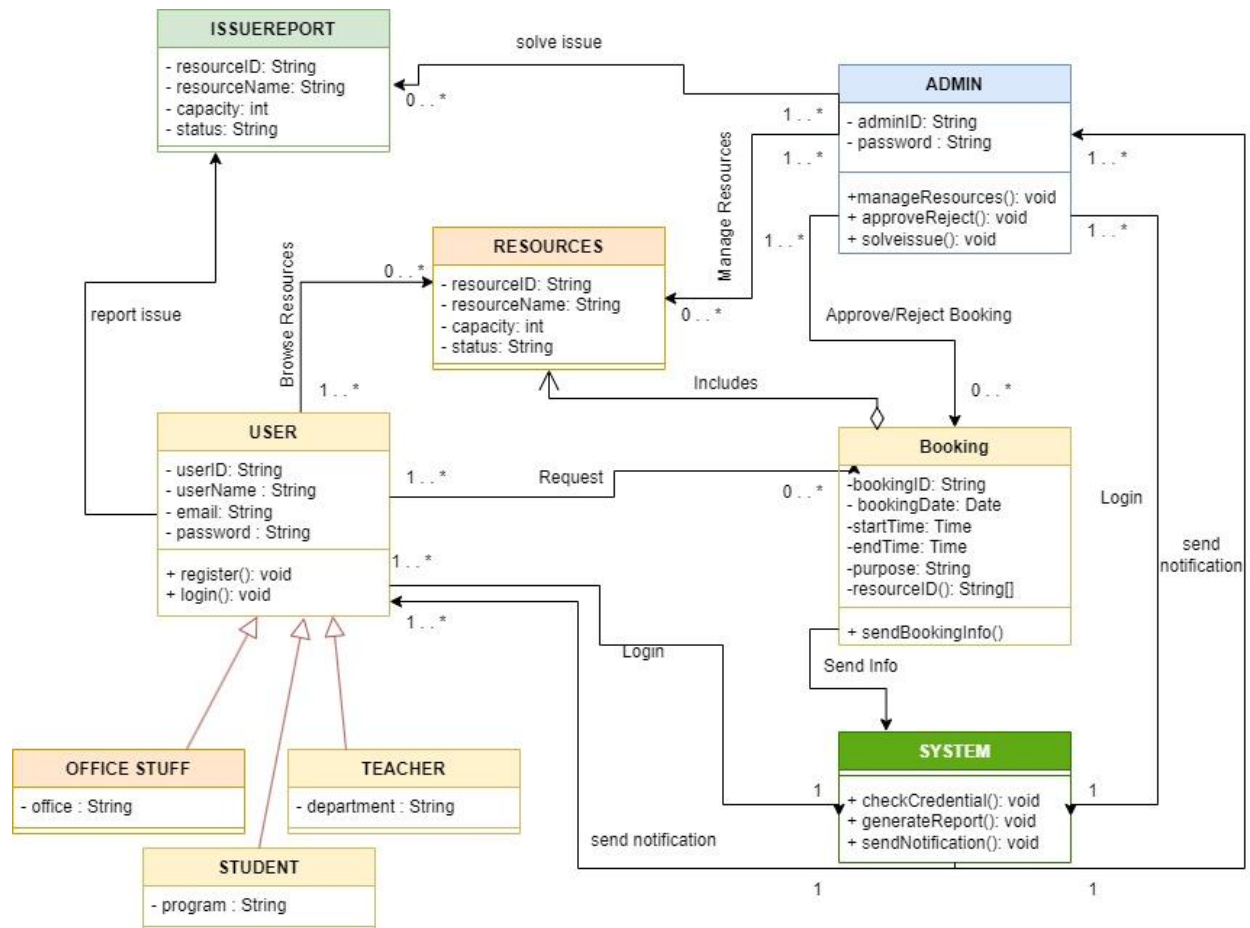
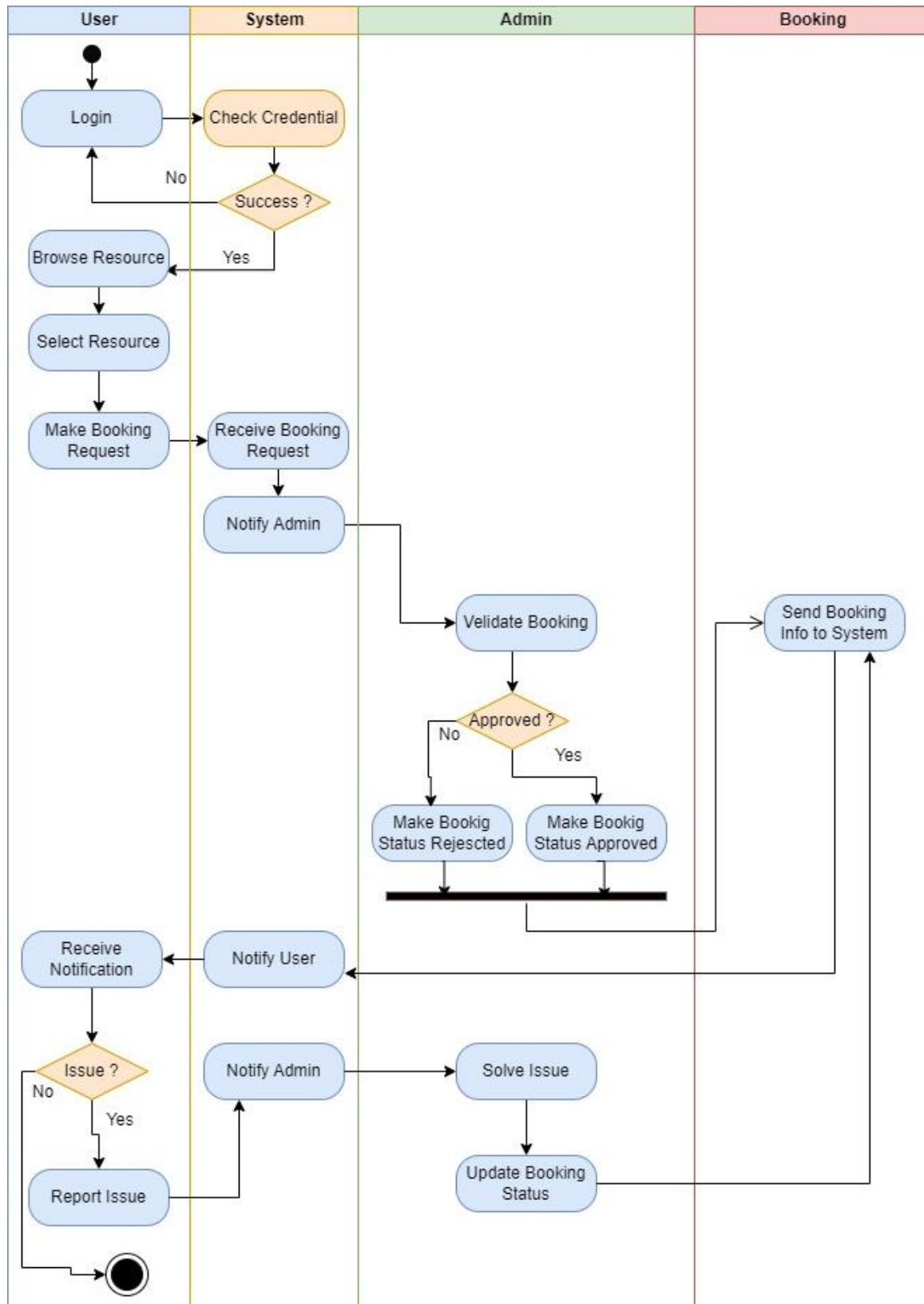# 4. Overall Component Diagram of the project:

UNIVERSITY RESOURCE MANAGEMENT SYSTEM

User Management Sub System

Resource Management Sub System

Booking Management Sub System

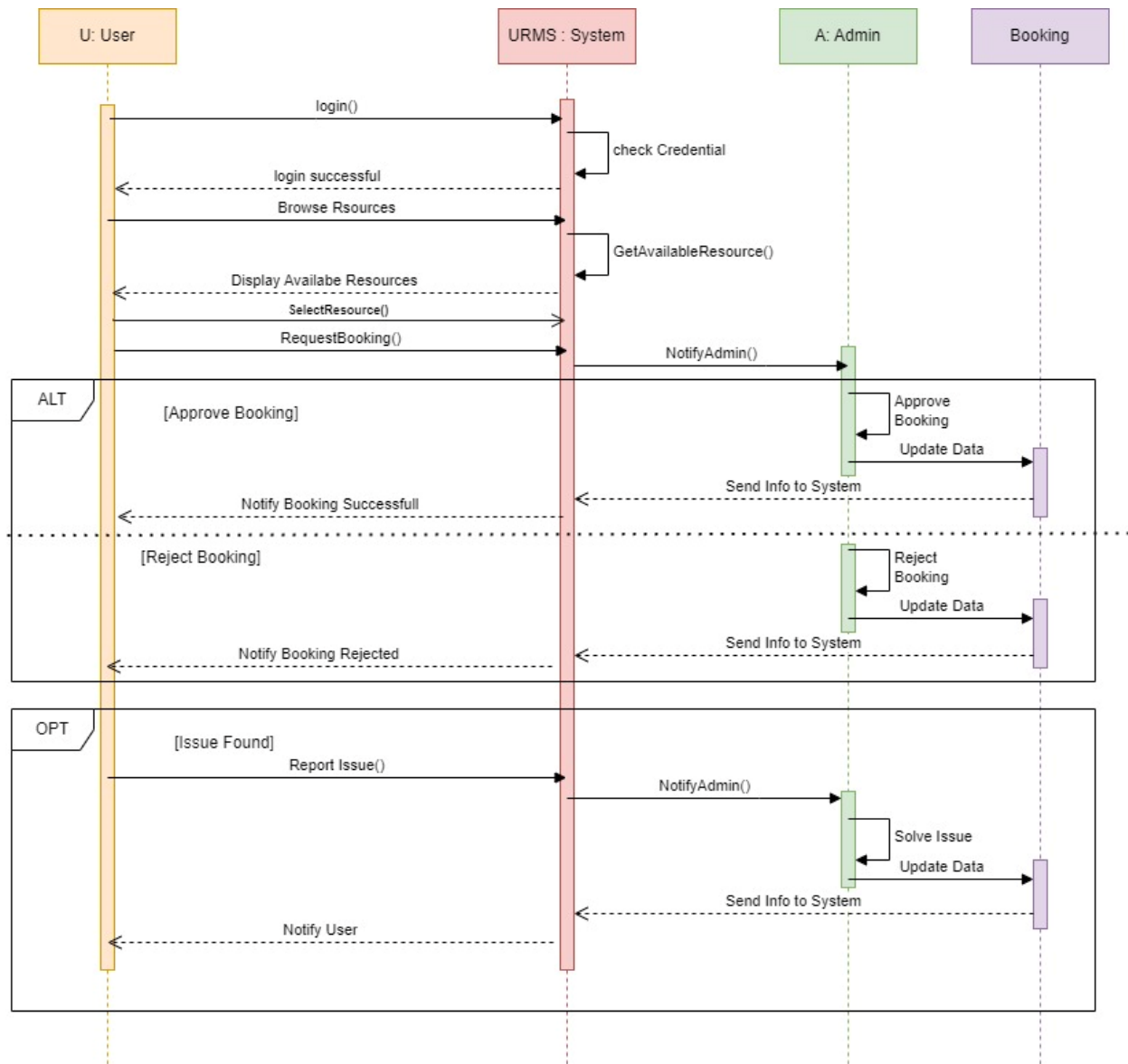# 5. Overall Use Case Diagram of the project:
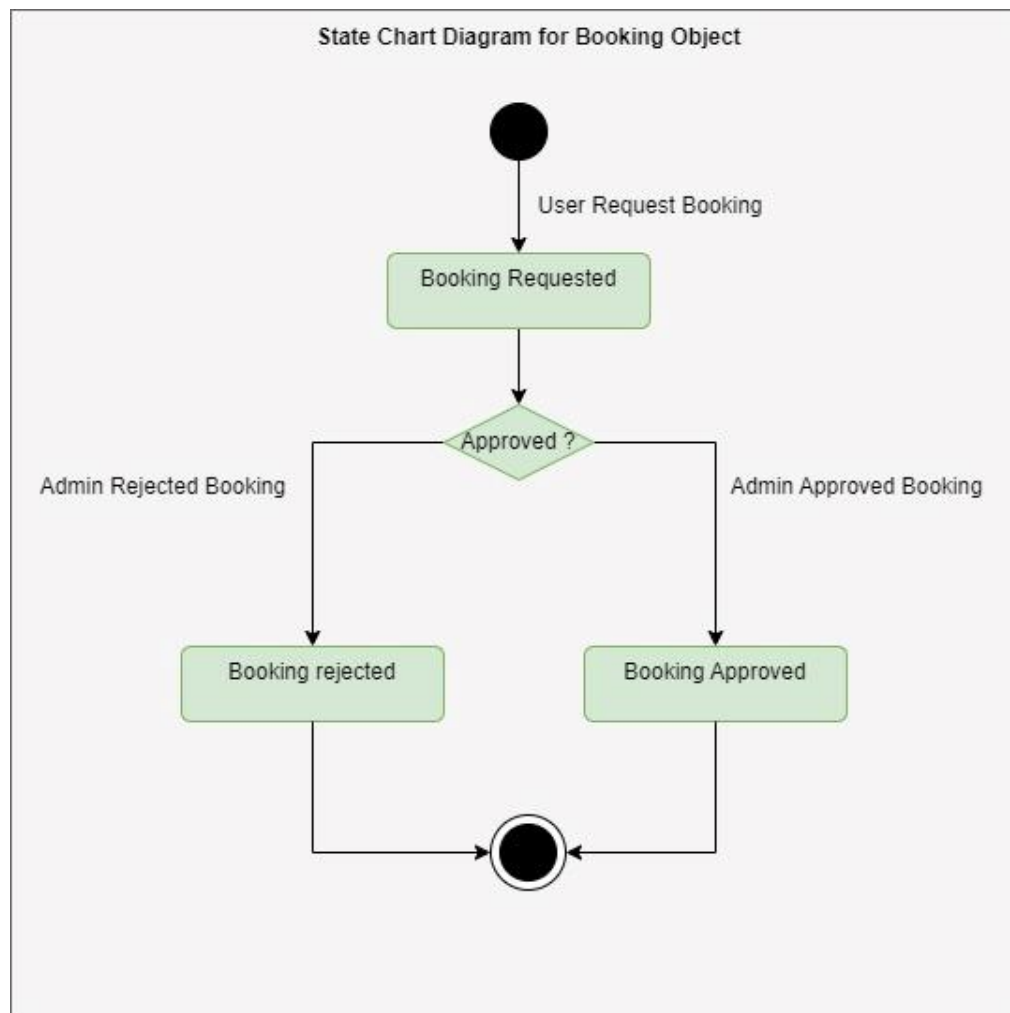
6. Overall Class Diagram of the project:

7. Overall Activity Diagram of the project:

8. Overall Sequence Diagram of the project:

9. State chart Diagram for the Booking Object of the project:

State Chart Diagram for Booking Object

10. Conclusion:

In conclusion, the **University Resource Management System (URMS)** is a comprehensive solution aimed at optimizing the utilization and management of university resources such as classrooms, laboratories, and sports facilities. By automating the resource booking process, the system reduces administrative overhead, minimizes conflicts, and ensures transparency for users like students, teachers, and office staff. The integration of essential features like user authentication, booking approvals, issue reporting, and conflict resolution not only enhances the user experience but also supports efficient resource allocation and maintenance. The system's design fosters a streamlined, user-friendly environment that significantly improves operational efficiency in university settings. Ultimately, URMS helps institutions better manage their resources while providing clear accountability and transparency in the booking process.