

B.M.S. COLLEGE OF ENGINEERING BENGALURU
Autonomous Institute, Affiliated to VTU



Lab Record

Software Engineering and Object-Oriented Modeling

Submitted in partial fulfillment for the 5th Semester Laboratory

Bachelor of Engineering
in
Computer Science and Engineering

Submitted by:

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1BM22CS233

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B.M.S. COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING



CERTIFICATE

This is to certify that the Object-Oriented Analysis and Design(22CS6PCSEO) laboratory has been carried out by SAKSHI B R (1BM22CS233) during the 5th Semester Oct 24-Jan 2025.

Signature of the Faculty Incharge:

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Department of Computer Science and Engineering
B.M.S. College of Engineering, Bangalore

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1. Hotel Management System

Problem Statement:

The current manual processes for managing hotel operations, including reservations, check-ins, check-outs, and billing, are inefficient and prone to human errors. These inefficiencies lead to issues such as inaccurate record-keeping, mismanagement of room availability, and delays in customer service. As a result, both operational effectiveness and customer satisfaction are compromised. There is a pressing need for a centralized and automated hotel management system that can streamline operations, reduce errors, enhance customer service, and ensure accurate and real-time data management.

SRS-Software Requirements Specification:

GoodLuck	
Page No.	Date
5]	Hotel Management System:
1]	Introduction:
	Purpose: Development of Hotel Management System
	Scope: This document includes functional and non functional requirement, user interface requirement, budget and schedule.
	Overview: This document helps development of hotel management system and managing all the functional and non functional requirement.
2]	General Description:
	This system enables the guests/customer books the rooms as per their requirements.
3]	Functional Requirement:
	• Login/Signup page Register/Login
	• Hotel Booking/Room Booking
	• Viewing Ratings
	• Customer Reviews
	• Booking for service
	• Dining and Booking Food ordering
	• Payment
4]	Interface Requirement
	This system is to be designed in such a way that user can easily use in their convenient system.

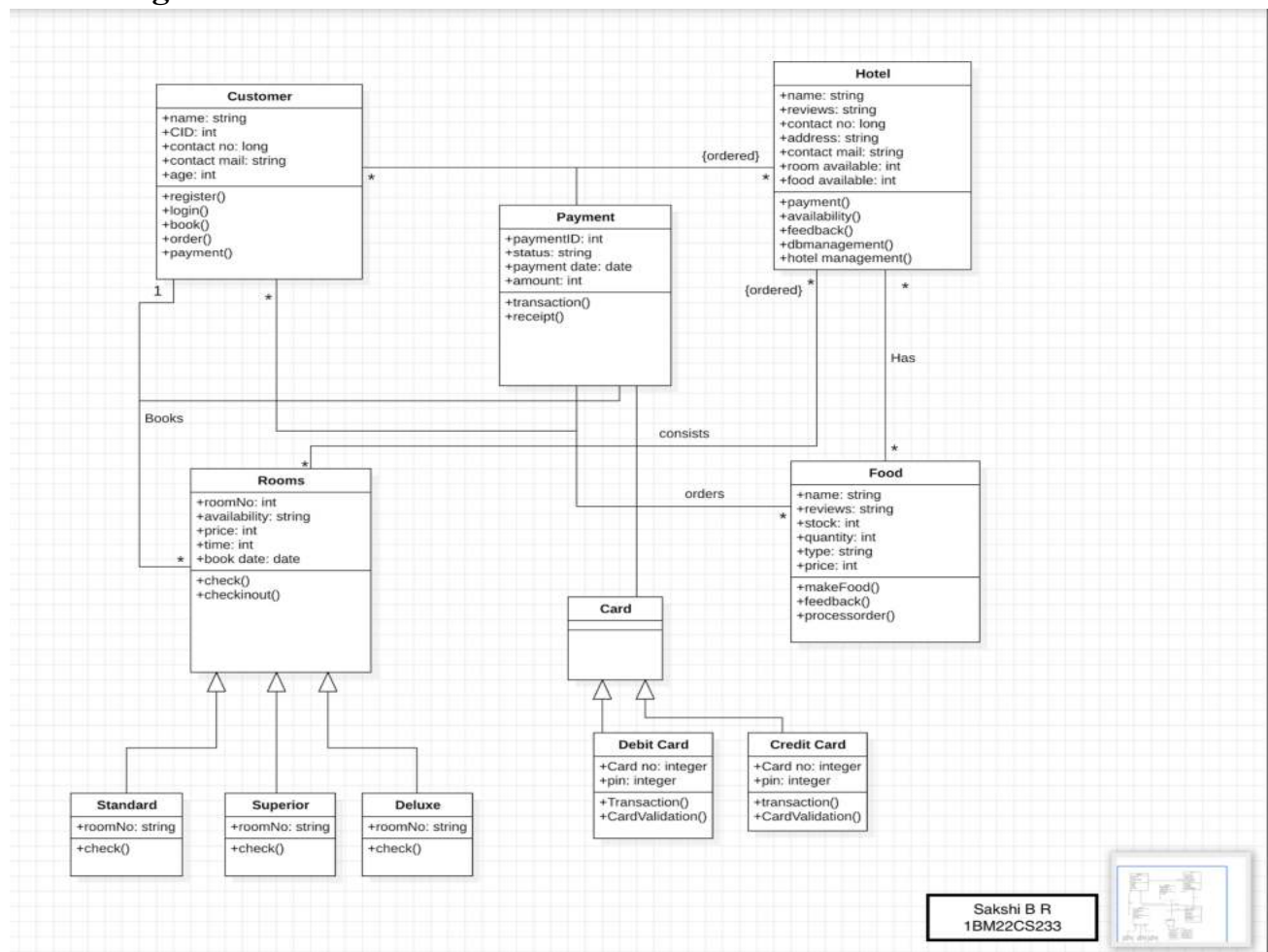
5] Performance Requirement
 Slope Speed: Enables users to System's downtime should be less.
 Multiple users can use this system without any inconvenience.

6] Design Constraints:
 This system is to be designed such that it can be used according to user convenient.

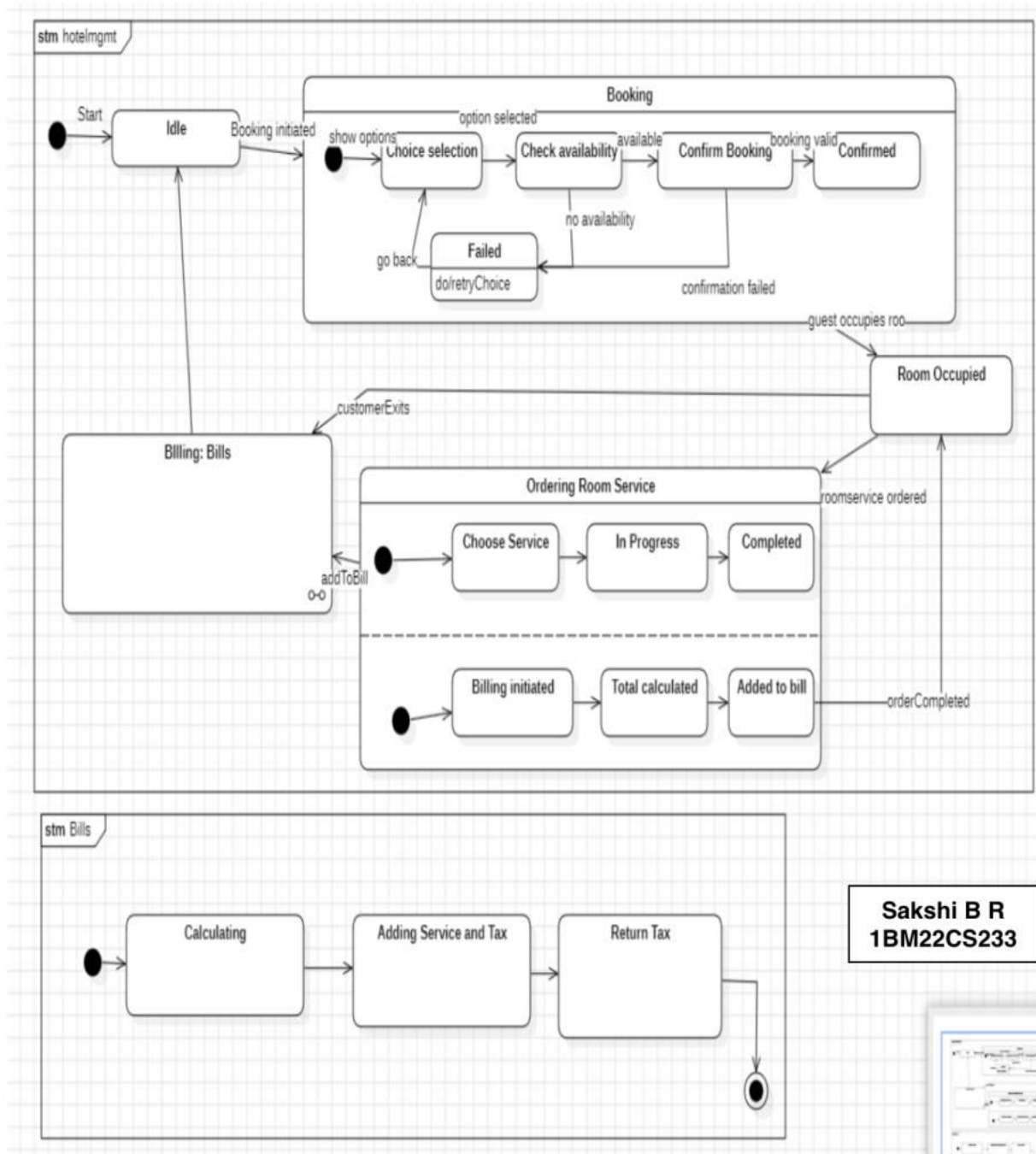
7] Non Functional Requirement:
 Easily accessible without any time or place constraints.

8] Preliminary Schedule & Budget
 Estimated Budget - ₹50,000
 Estimated time - 5 months

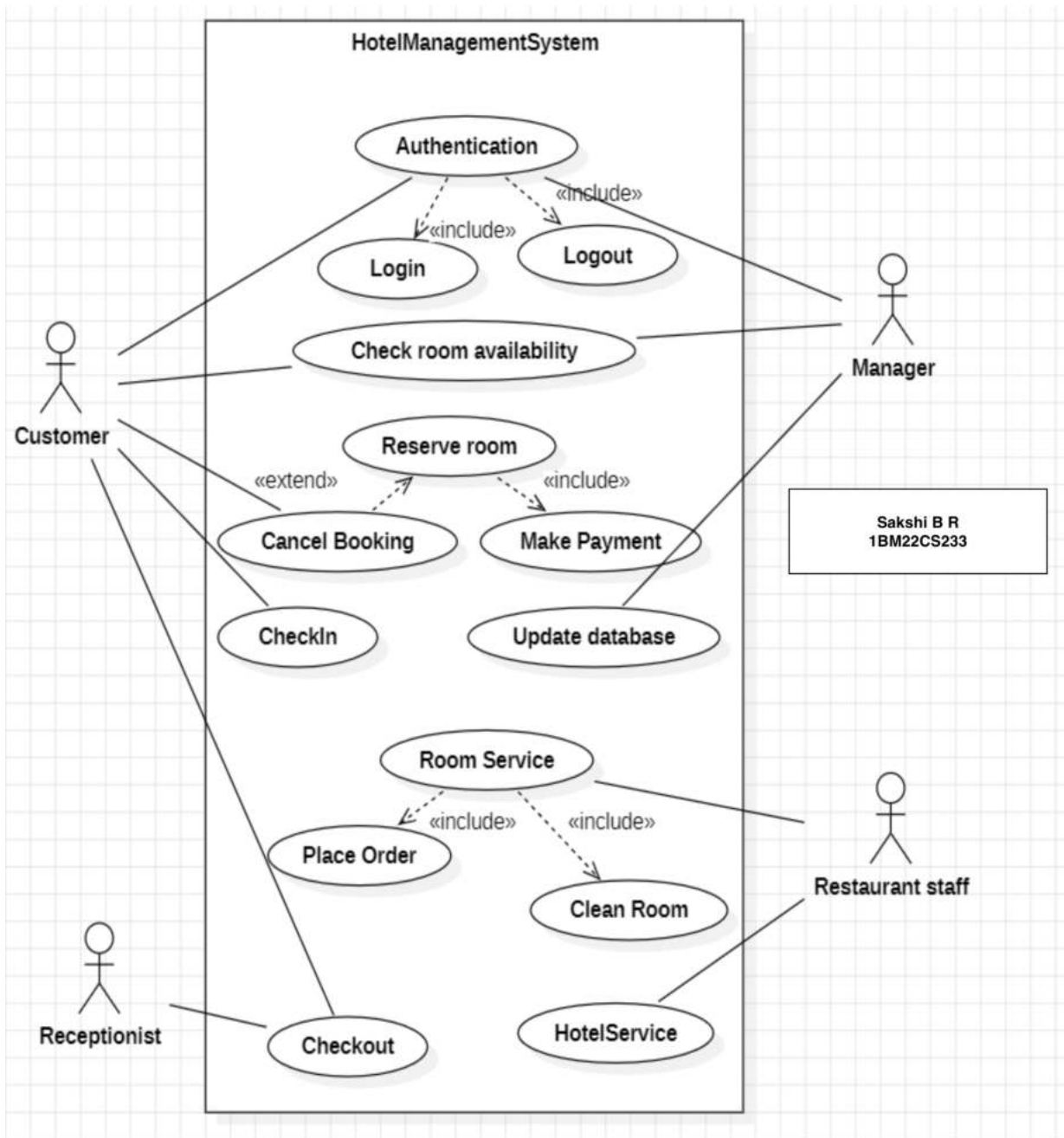
Class Diagram:



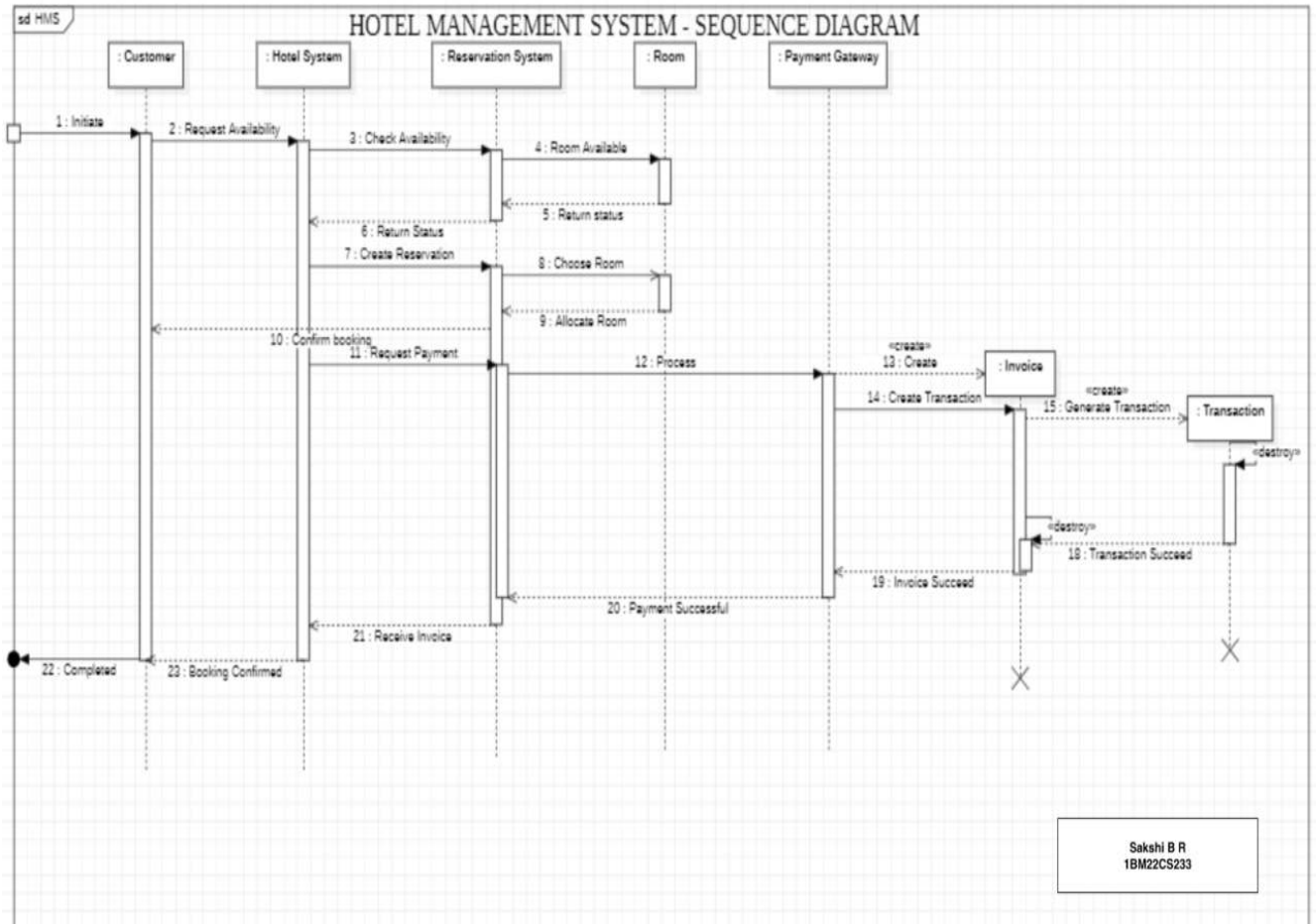
State Diagram:



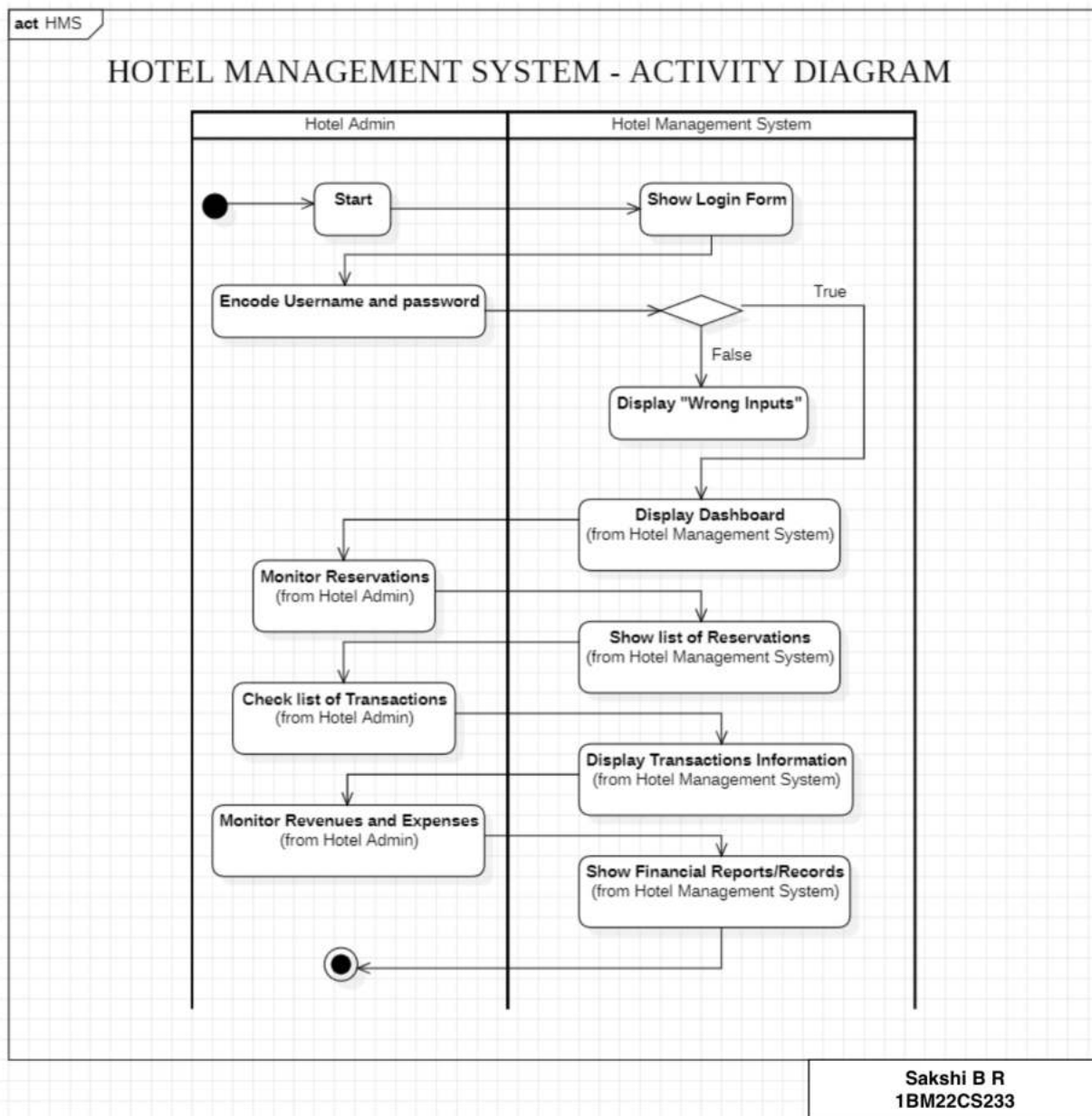
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



2. Credit Card Processing System

Problem Statement:

The existing manual processes for credit card transactions are inefficient, error-prone, and vulnerable to security breaches. Issues such as delayed payment processing, inaccurate transaction records, and the risk of fraud compromise both user experience and business operations. There is a need for a secure, automated credit card processing system that ensures accurate transaction handling, faster processing times, enhanced fraud detection, and compliance with payment security standards to improve reliability and user trust.

SRS-Software Requirements Specification:

The image shows a handwritten document titled "Software Requirement Specifications" for a "Credit Card System". It includes a header with "Good Luck" and "Page No." followed by a date stamp "30.09.24". The document is organized into sections: 1] Introduction, 2] General Description, and 3] Functionalities Requirements. The Introduction section describes the development of a system to read credit cards. The General Description section states the system's purpose. The Functionalities Requirements section lists specific features like registration, card issuance, and transaction processing.

Good Luck Page No.
Date 30.09.24

Software Requirement Specifications.

Credit Card System:

1] Introduction:-
Development of Credit Card System which enables to read credit card.

Scope of the document: Working of credit card system that is it enables user to read their credit card for their payment transaction, user account management.

2] Overview:
This system help user manage their credit card and processing payments.

3] General Description:
It ensures user to make payments, track their transaction, manage their accounts.

3] Functionalities Requirements:

Registration: User can securely register for new account with personal details.

Issuing of card: Credit card should be issued to user with unique number and CVV.

Transaction Processing and history:
This system enables users to make payment for any of their purchases.
This system also enables user to look into history of their transaction.

Security: Most important role is to provide security or safeguard user's personal information from frauds.

4] Interface Requirement:

This system is to be designed in such a way that user can easily use in their convenient system.

5] Performance Requirement

This system should enable user to make payment within seconds.

Multiple users can use this system without any inconvenience.

6] Design Constraints:

This system should be designed such that it can be used in web browser or mobile which ever user are convenient to use.

7] Non Functional Requirement:

Easily Accessible: The system should be accessed easily by any user.

Portable: Can be accessed by user anywhere, anytime without any place constraints.

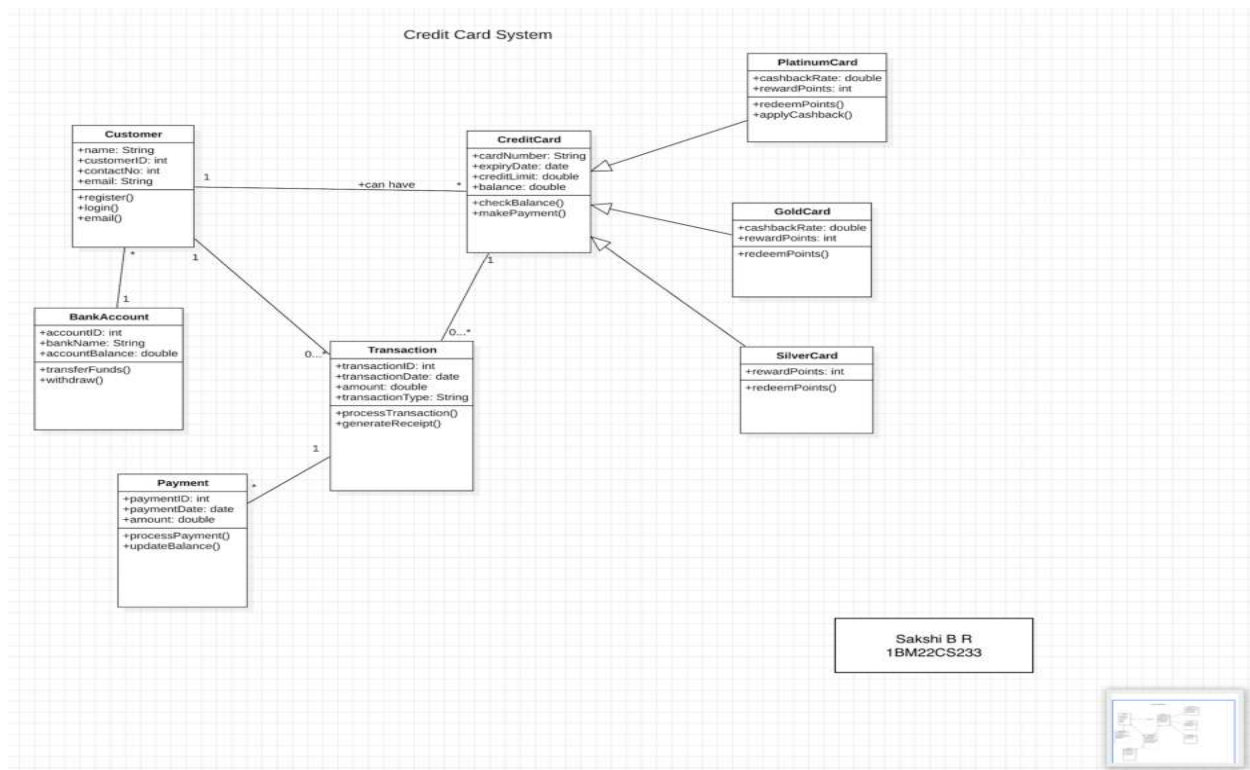
Portable: User can access the system on any convenient devices such as web browser or mobile phones - ios / android.

8] Preliminary Schedule & Budget:

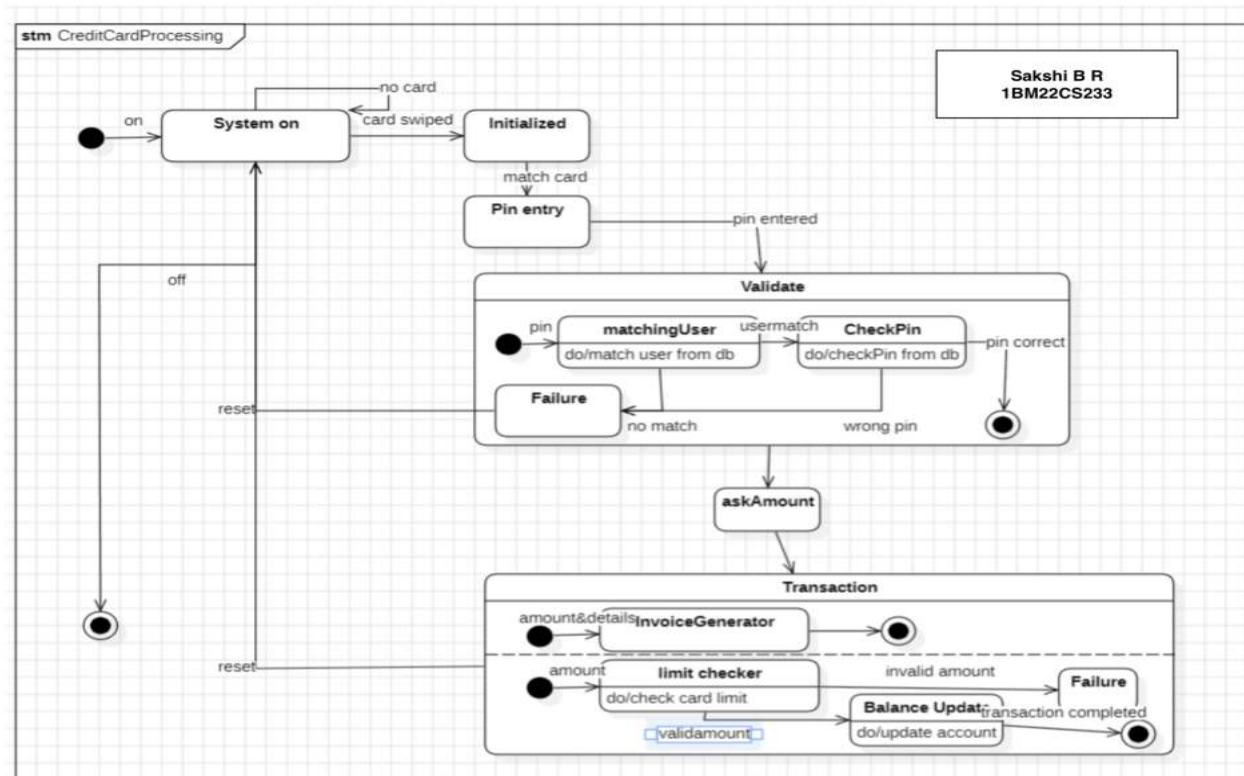
Estimated budget - ₹1,00,00,000

Estimated Time - 8 months

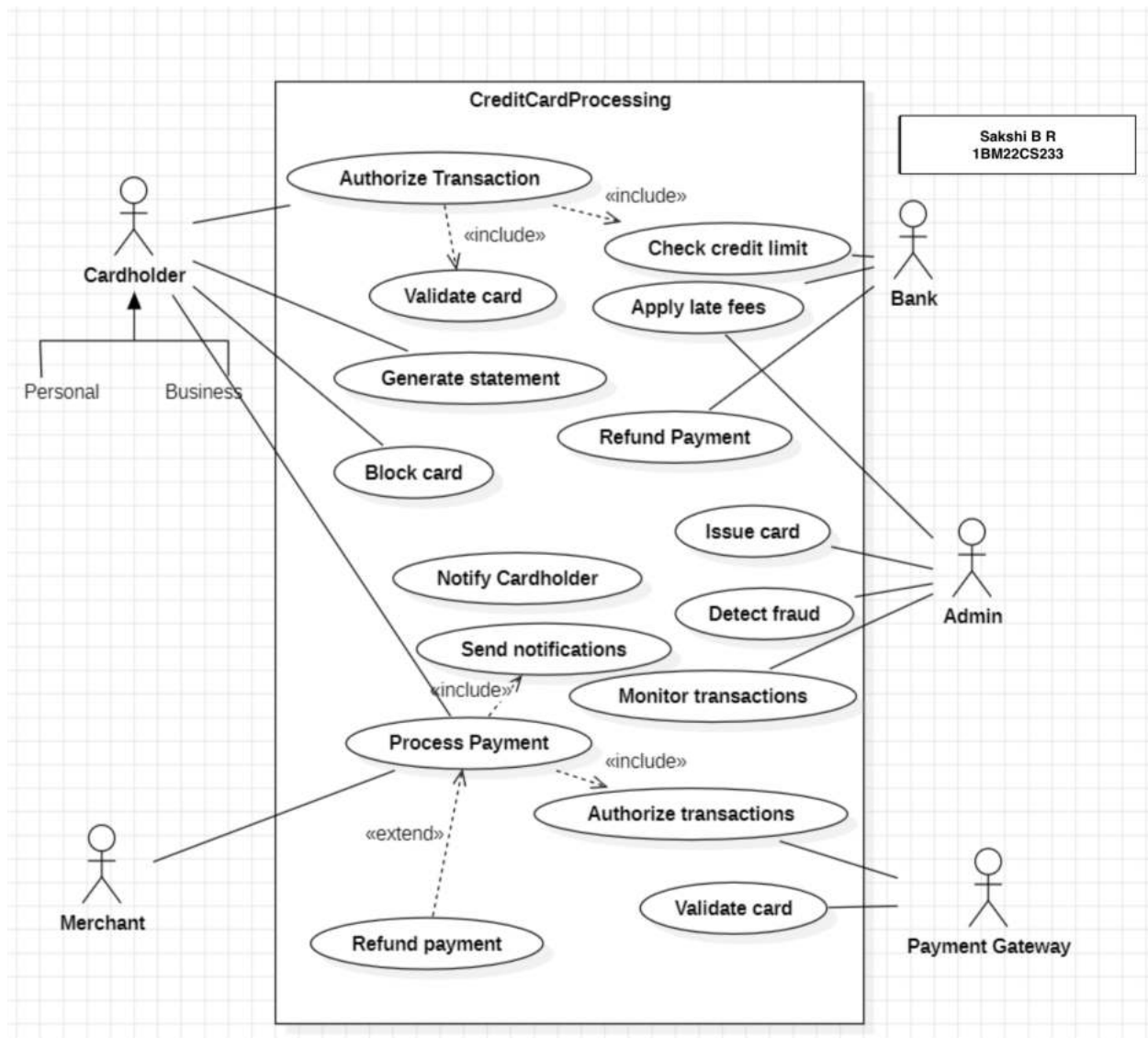
Class Diagram:



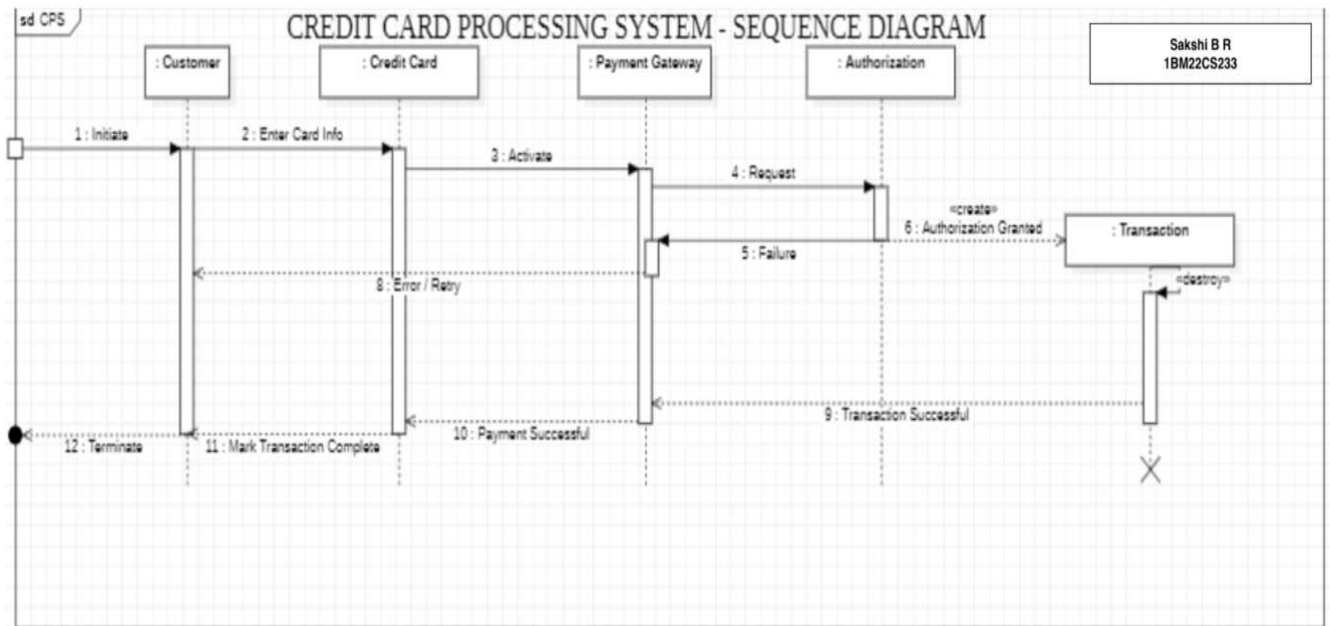
State Diagram:



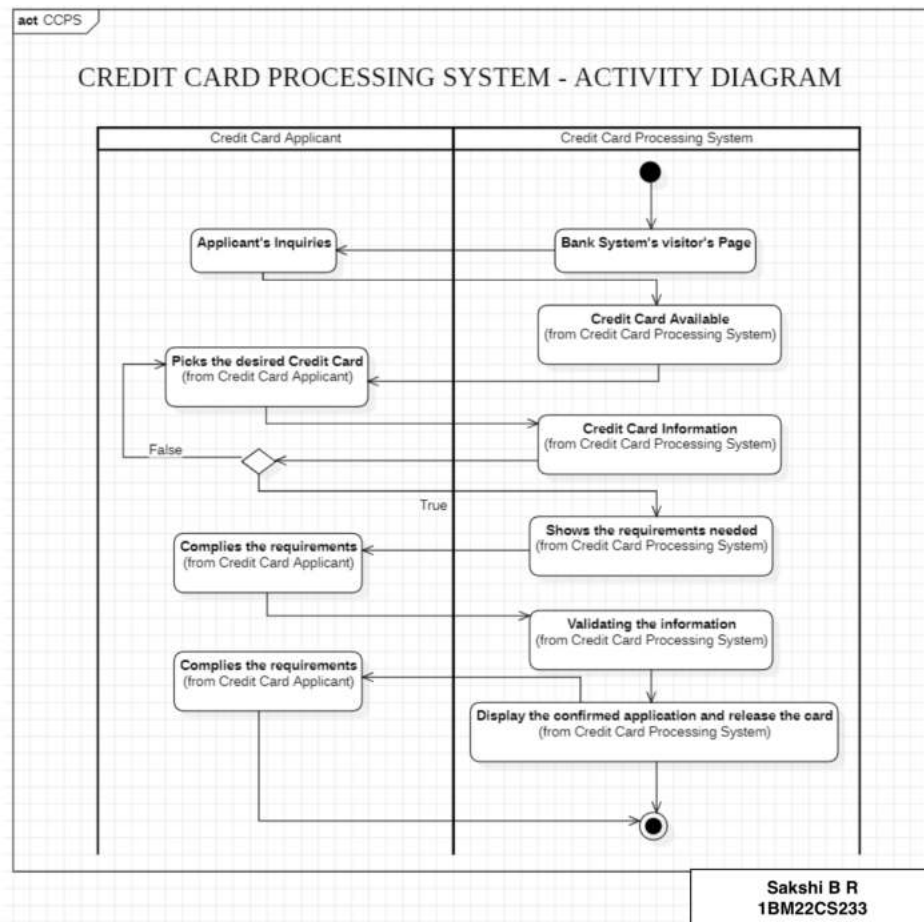
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



3. Library Management System

Problem Statement:

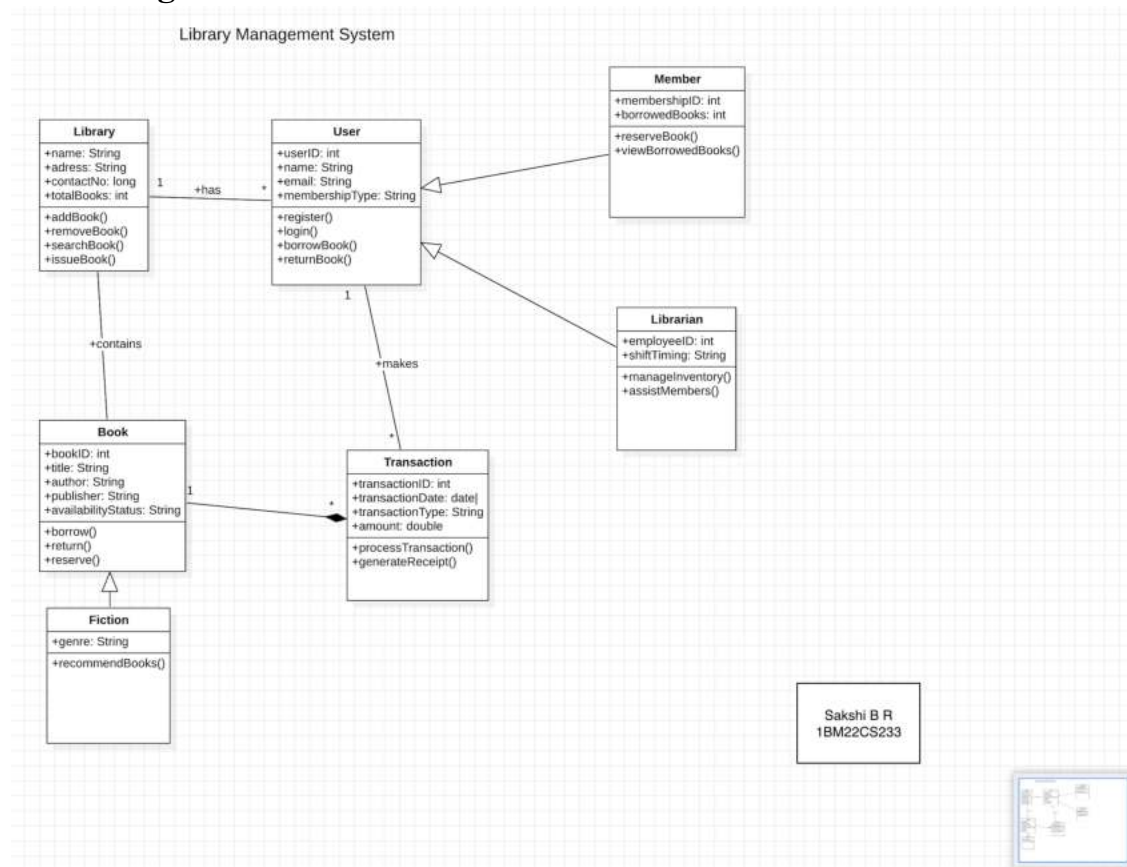
The current manual system for managing library operations, including book cataloging, borrowing, returning, and tracking inventory, is inefficient and prone to errors. Challenges such as misplaced records, overdue books, and difficulty in locating resources lead to wasted time and reduced user satisfaction. There is a need for an automated library management system to streamline operations, maintain accurate records, improve resource accessibility, and enhance the overall user experience for both library staff and patrons.

SRS-Software Requirements Specification:

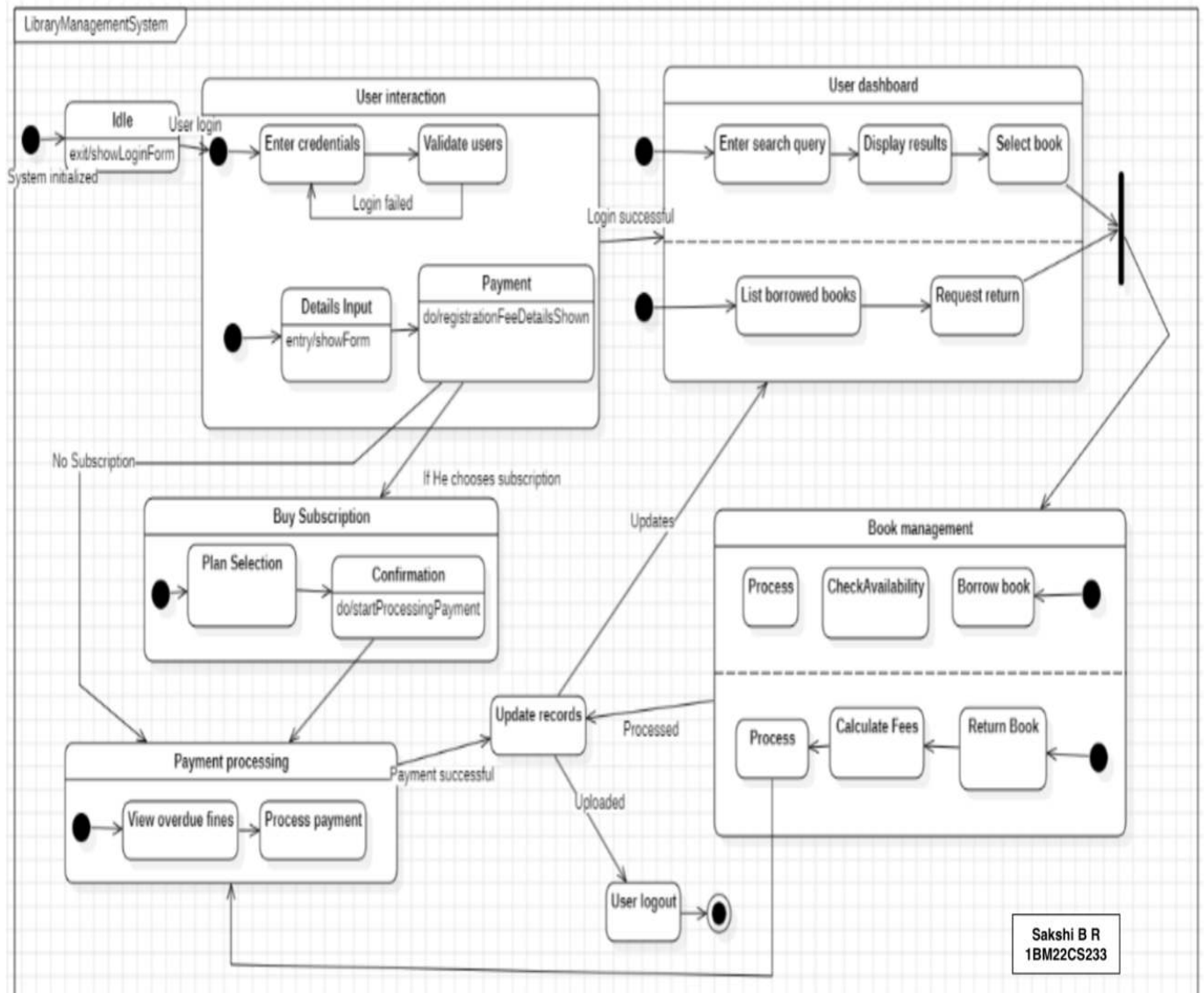
Doc/Lock	Page No.
3]	Library Management System
1]	Introduction: Purpose: Development of Hotel Management System Scope: This document includes functional and non functional requirement, user interface requirement, budget and schedule. Overview: This system enables secure registrations, borrowing books and returning books.
2]	General Description: This system enables user to login/signup, borrow books, returning books, publishing magazines etc.
3]	Functional Requirement <ul style="list-style-type: none">- Login/Signup: New user or old user can login/signup/login.- Borrowing Books- Checking availability of Required books- Returning Books- Fine payment- Publishing weekly/Monthly news Magazines.

- GoodLuck Page No. _____
Date: ____/____/____
- 4] Interface Requirement:
Easy user interface which is convenient for user
 - 5] Performance Requirement:
User use the software for their requirements within less time
Multiple user can use the system without any inconvenience.
 - 6] Design Constraints
Designed according to user convenience.
Available for in any web browser or mobiles [ios/android]
 - 7] Preliminary Schedule / Budget
Estimated cost: ₹60,65,545
Estimated time: 10 months.
 - 8] Non functional Requirement:
Easy to access

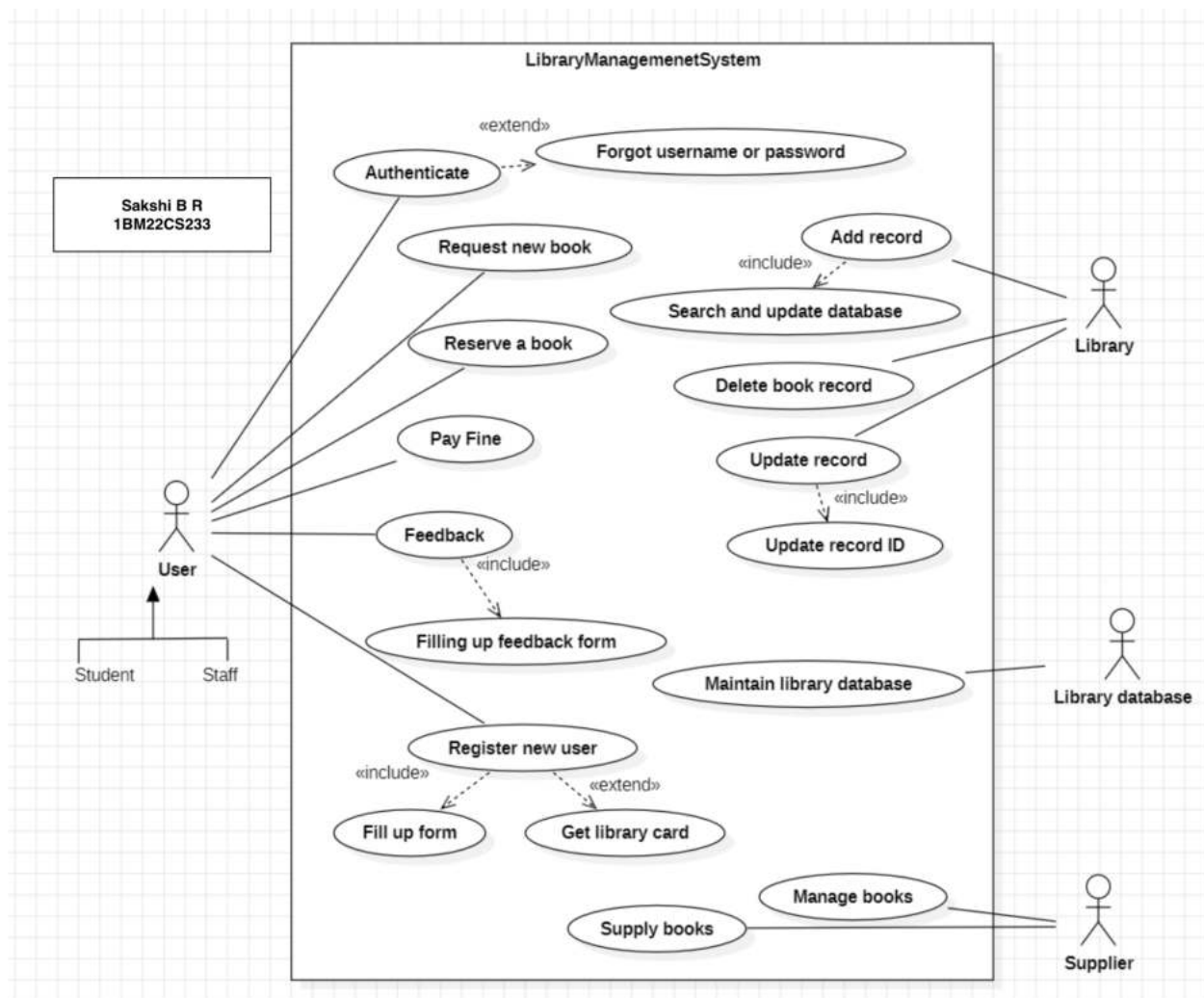
Class Diagram:



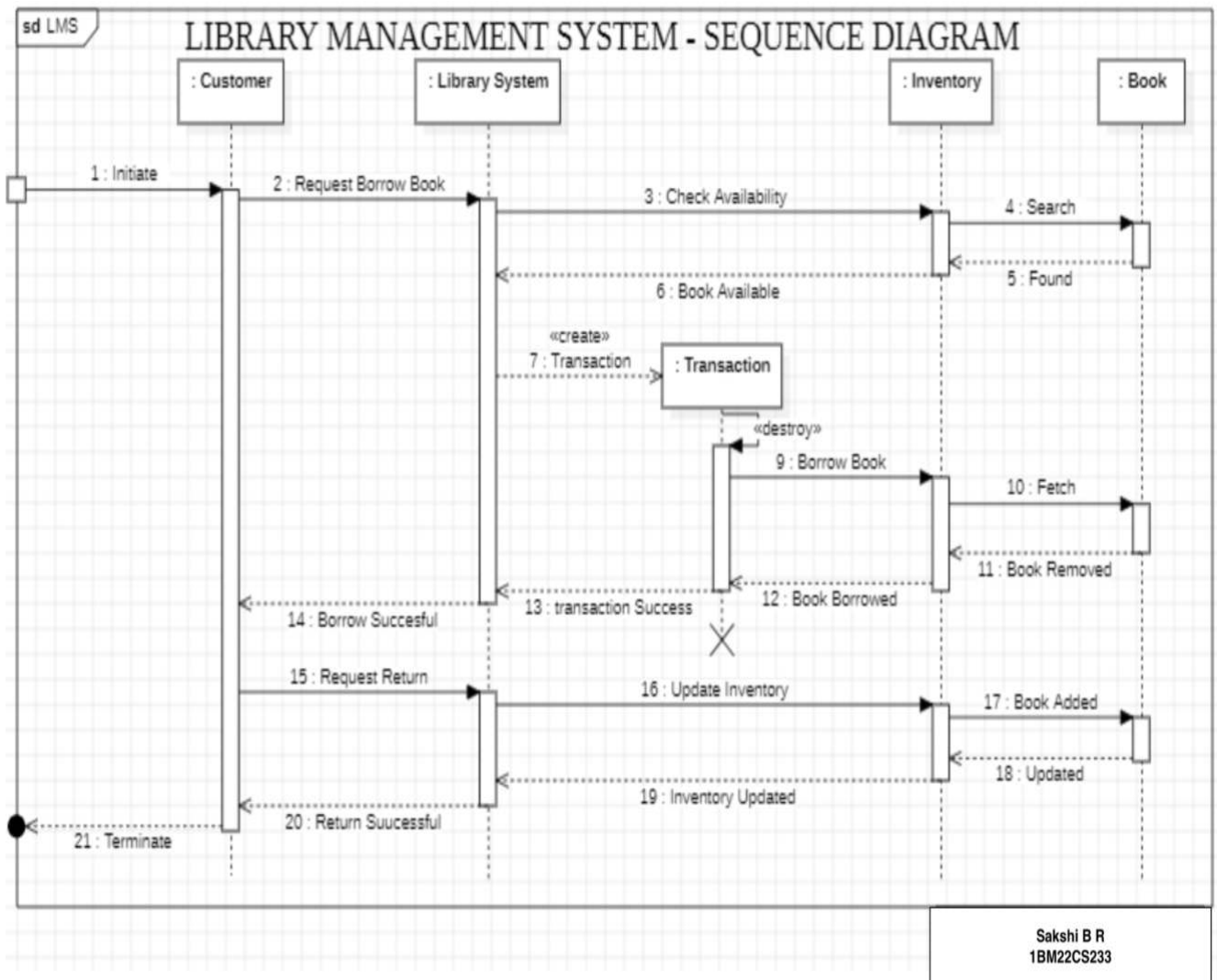
State Diagram:



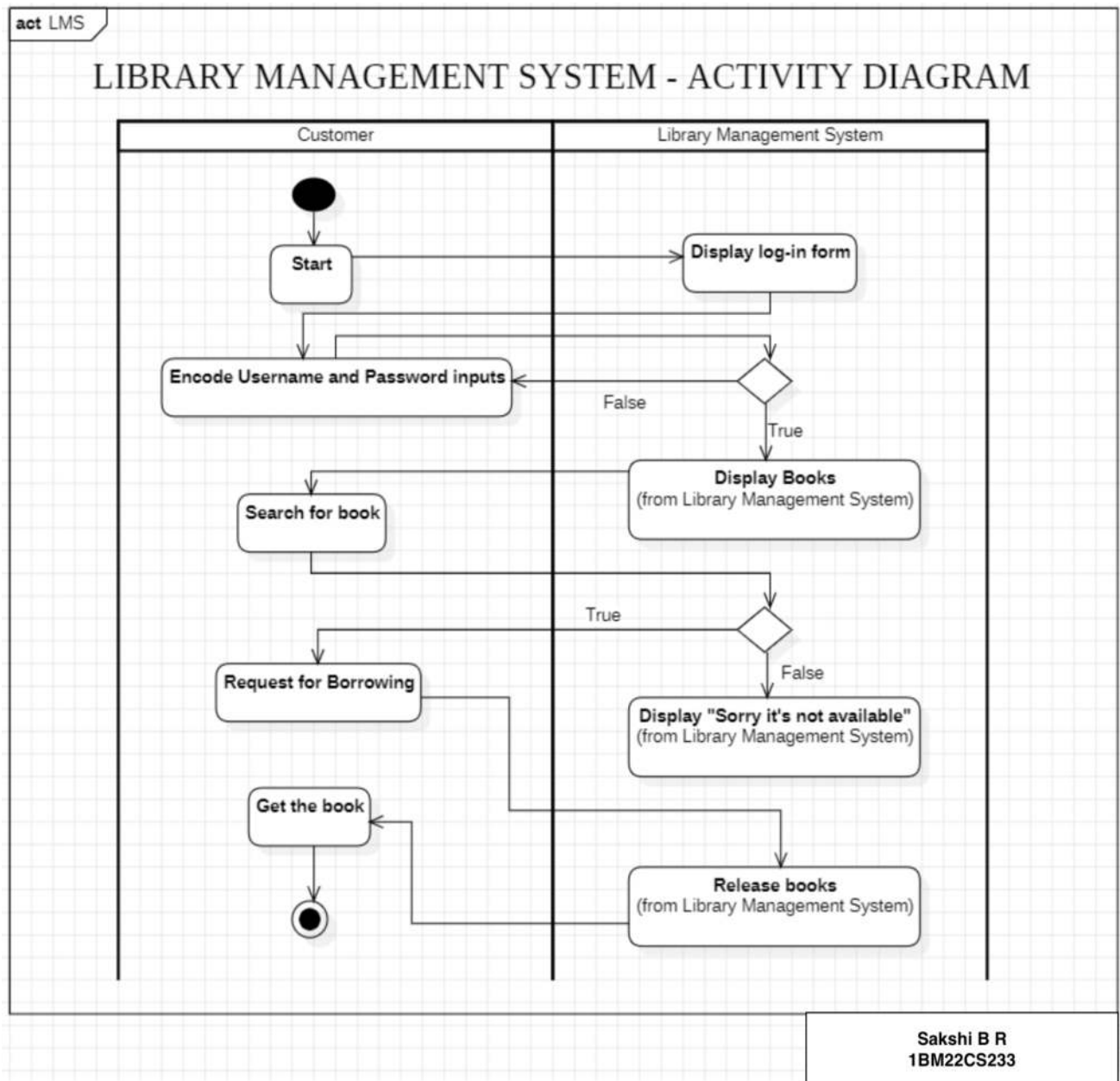
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



4. Stock Maintenance System

Problem Statement:

Manual stock maintenance in businesses often leads to inaccuracies, overstocking, or understocking, impacting operational efficiency and customer satisfaction. An automated stock maintenance system is needed to track inventory levels, manage reorders, reduce wastage, and optimize supply chain processes.

SRS-Software Requirements Specification:

Good Luck	Page No.
Date	
7] Stock Maintenance System	
1. Introduction	
Purpose: The aim of this document is to define the purpose, scope and requirement of the Stock Maintenance System.	
Scope: This document outlines the functionalities like stock monitoring, order management and reporting.	
Overview: This document consists of functional requirement, non functional requirement, user interface and budget.	
2. General Description: This system consists of features including real-time tracking of stock levels, automated alerts for low stock etc.	
3. Functional Requirements	
• User Authentication - User must log in with unique credentials ensuring secure access.	
• Stock Management	
• Stock Alerts	
• Reporting	

4. Interface Requirement
Web-based dashboard for stock monitoring,
management
Easy user interface

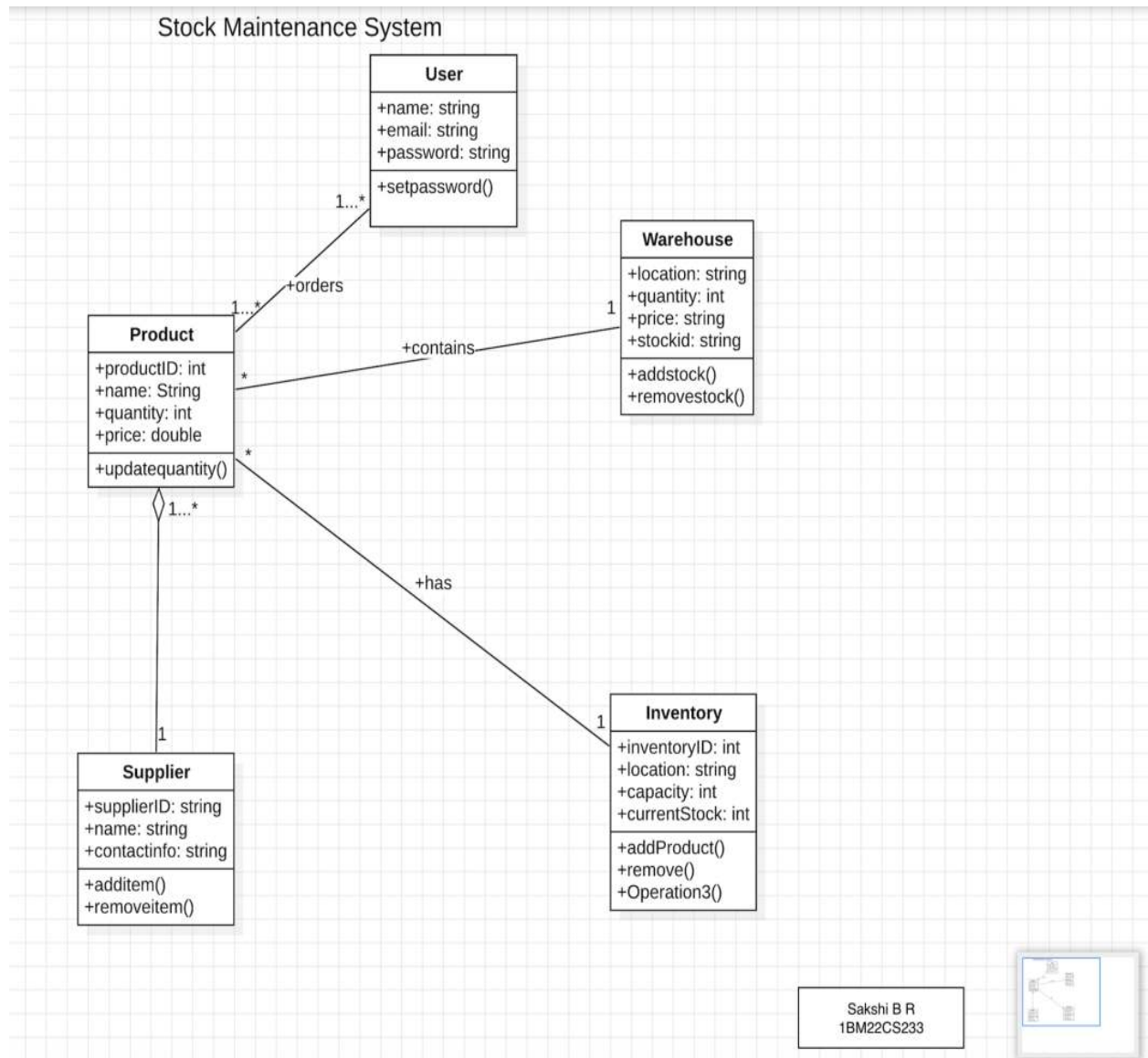
5. Performance Requirements
The system must handle and support
multiple users with less response time

6. Design Constraints
Designed in such a way that user
access through any web browser.

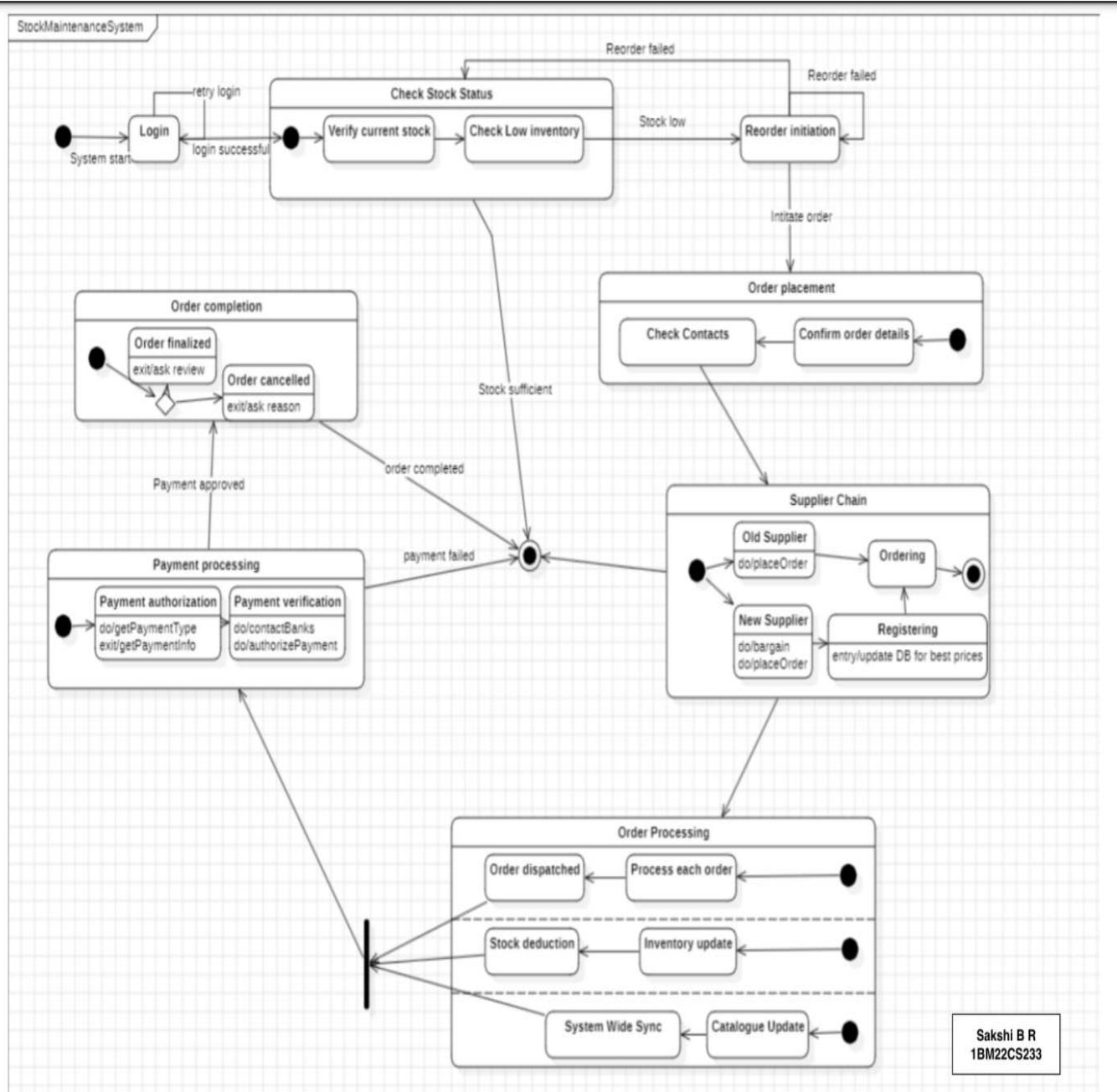
7. Non-Functional Requirement
Security: Sensitive data is to be
secured.
The system should be accessible
across multiple platforms

8. Preliminary Schedule and Budget
Estimated time is 6 months
Estimated budget: ₹ 5,00,000

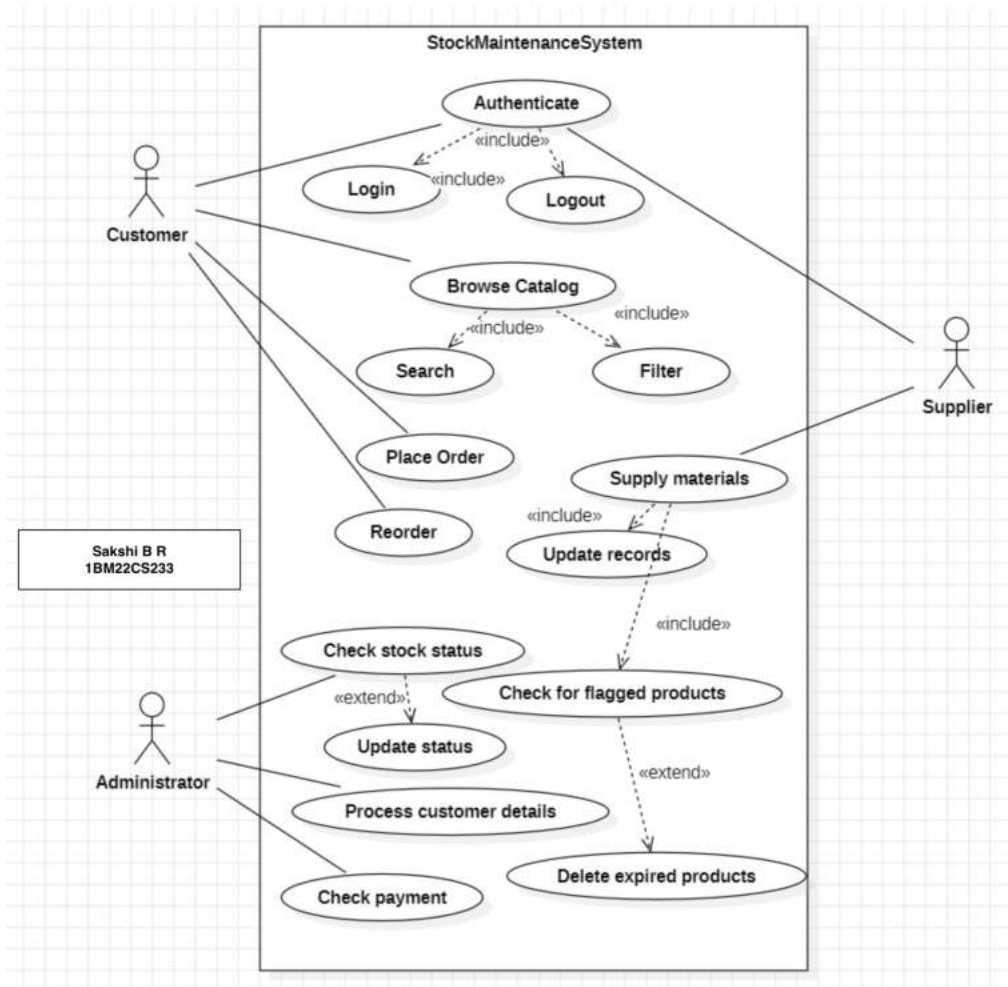
Class Diagram:



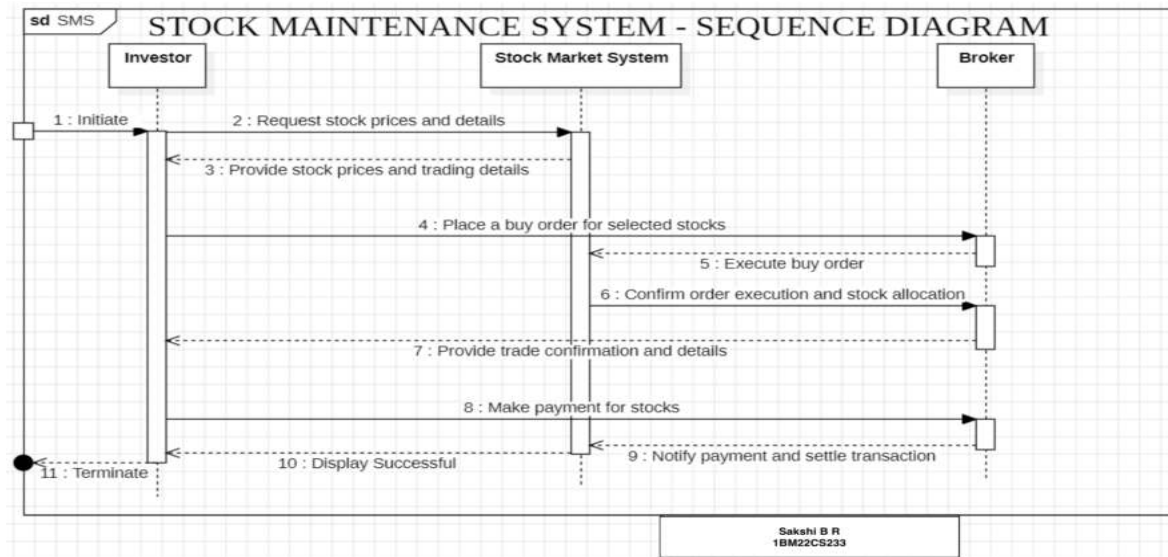
State Diagram:



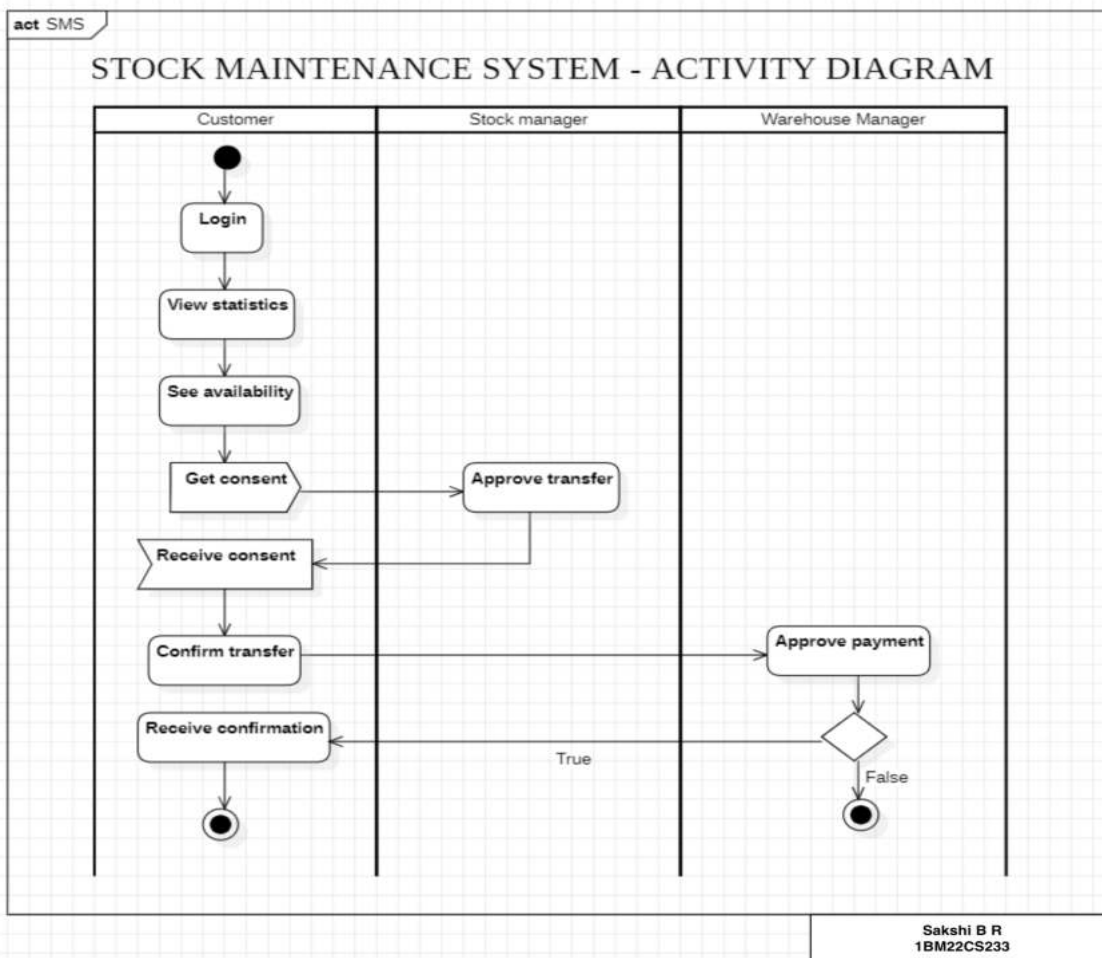
Use-Case Diagram:



Sequence Diagram:



Activity Diagram:



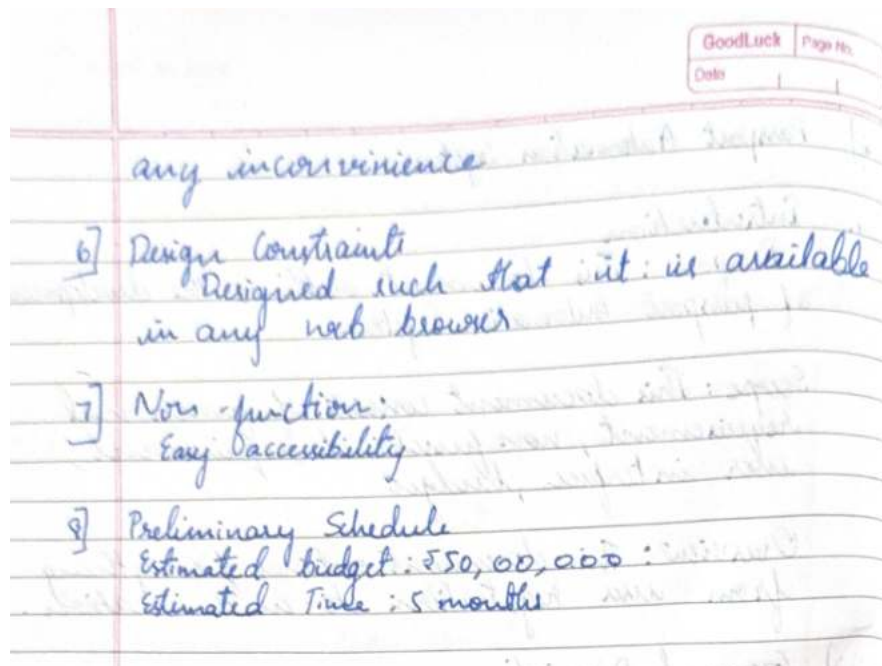
5.Passport AutomationSystem

Problem Statement:

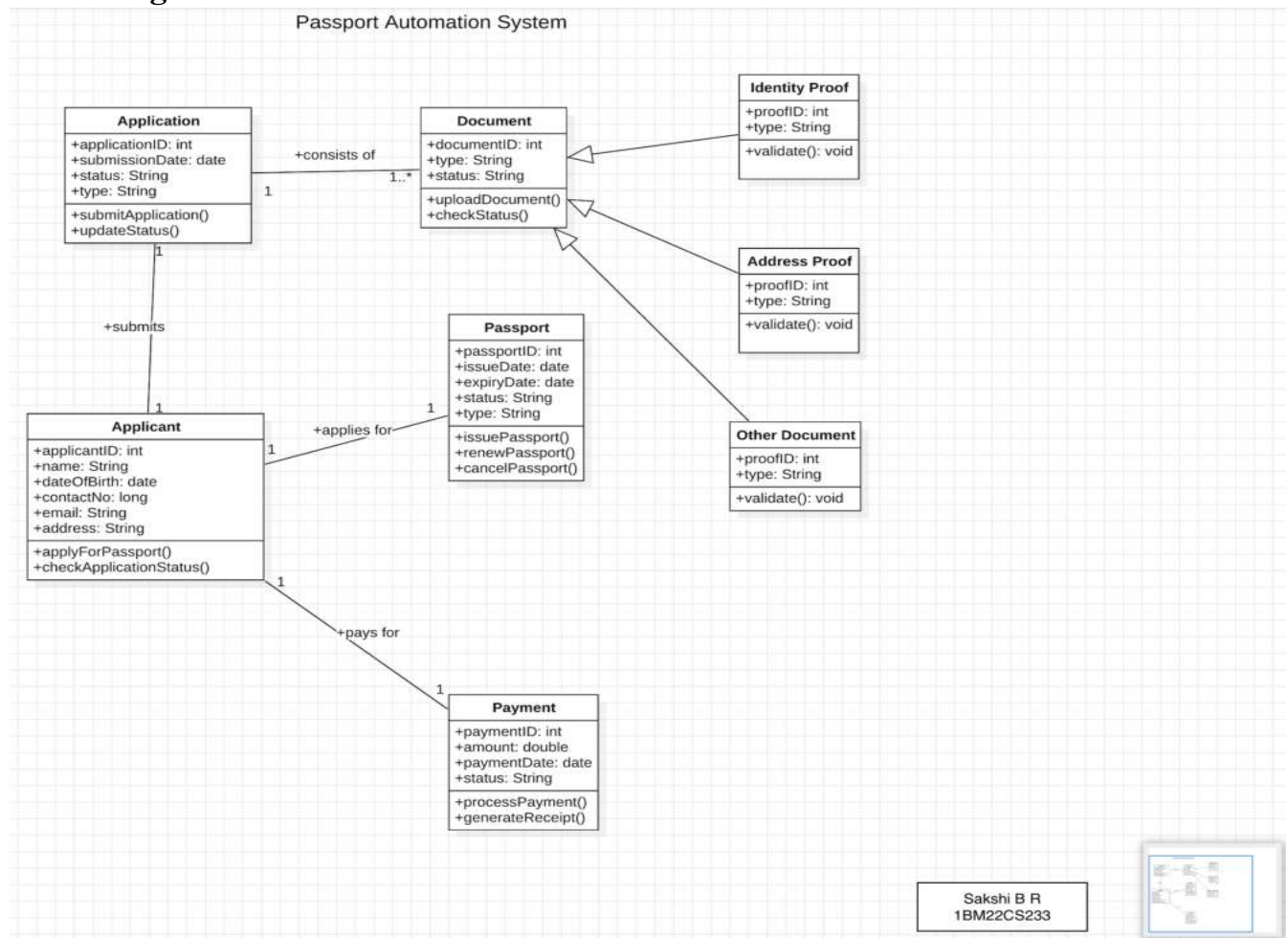
The manual process of issuing and renewing passports is slow, cumbersome, and prone to errors, causing delays for applicants and inefficiencies in data management. A passport automation system is required to digitize and streamline the process, ensure data accuracy, enhance security, and provide real-time status tracking for users.

SRS-Software Requirements Specification:

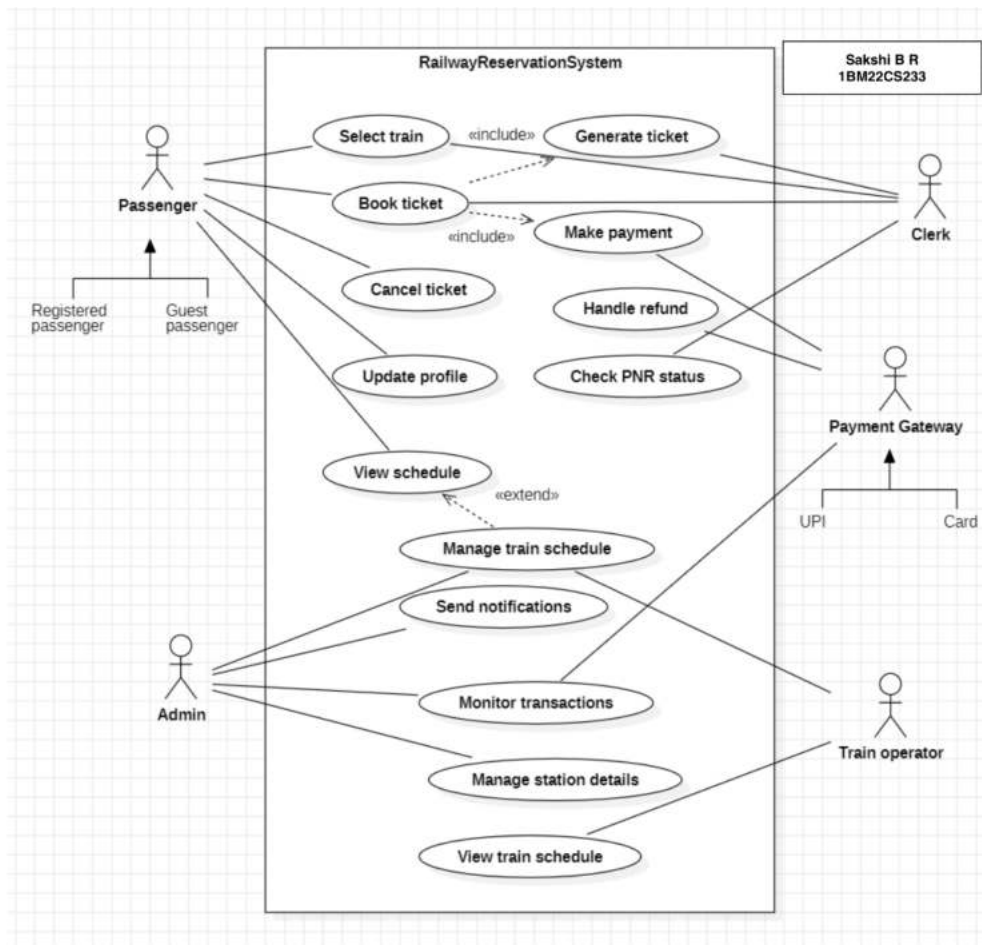
Good Luck		Page No.
Date		
6]	Passport Automation System:	
1.	Introduction	
	Purpose: This document outlines the development of passport Automation System.	
	Scope: This document consists of functional requirement, non functional requirement, user interface, budget	
	Overview: This document outlines everything from user registration to authentication.	
2]	General Description:	
	This system ensures secure registration of user, user authentication, secure maintenance of pass personal information.	
3]	Function Requirements:	
	<ul style="list-style-type: none">Registration of userApplication of passportVerification of documents.User authentication.	
4]	Interface Requirements	
	User interface which is convenient for user to use	
5]	Performance Requirement	
	Multiple user can use without any	



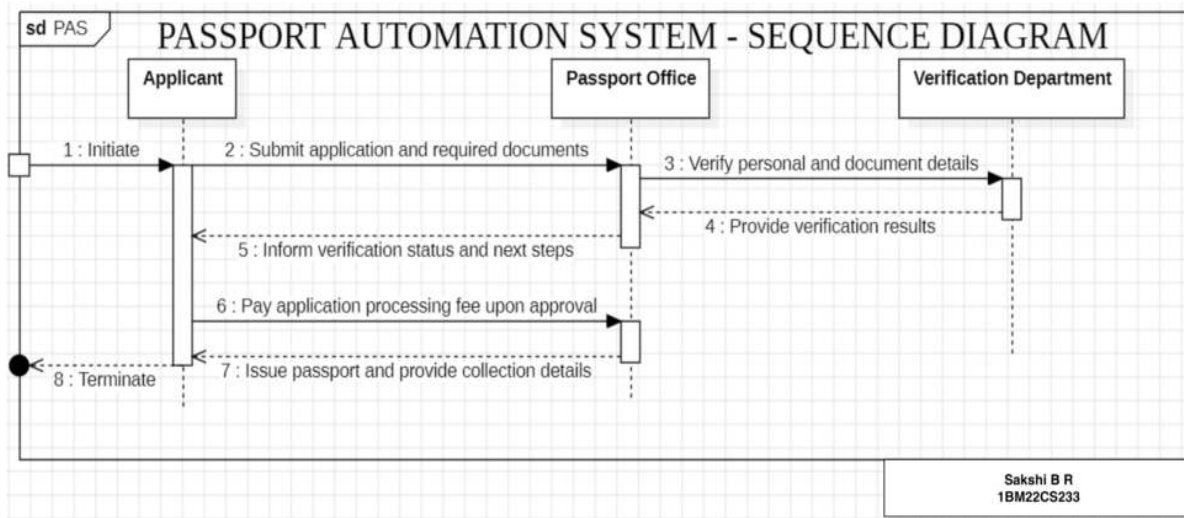
Class Diagram:



Use-Case Diagram:



Sequence Diagram:



Activity Diagram:

