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:

SAKSHI B R 1BM22CS233

Department of Computer Science and Engineering B.M.S. College of Engineering Bull Temple Road, Basavanagudi, Bangalore 560 019 Mar-June 2024

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:

M Lakshmi Neelima Assistant Professor Department of Computer Science and Engineering B.M.S. College of Engineering, Bangalore

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 Hotel Management Syst 	em
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- 2. Credit Card Processing
- 3. Library Management System
- 4. Stock Maintenance System
- 5. Passport Automation System

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 Propriet
- 7	
9]	Hotel Management System:
1.	Introduction:
Total Miles	Introduction: Purpose: Development of Hotel Management System Scope: This of
	Scope: This document is all
	and non functional require functional
- 80	Scope: This document includes junctional and non junctional requirement, user with a ce trequirement budget and school
	Overview: This document helps development of hotel management system and managing all the fedretional and non functional requirement.
	of hotel management system and manager
	requirement and non functional
	vaguscineus.
2]	General Description.
7	Othis system enables the and
	customer book the rooms as her the
	General Description: Bothis system enables the queits/ customer book the rooms as per their requirements.
3	Functional Requirement:
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	With sing Polis Room Booking
	. / . /
	Bring on Broker and Found ordering
	Booking for screece. Bearing an Bestering of Food ordering. Payment
4	1 Interface Requirement
T	This system is to the designed in
	such a way that user can easily
	Interface Requirement This system is to the designed in such a way that user can easily use in their convinient system.
	O CONTRACTOR OF THE CONTRACTOR

Performance Requirement

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whould be less.

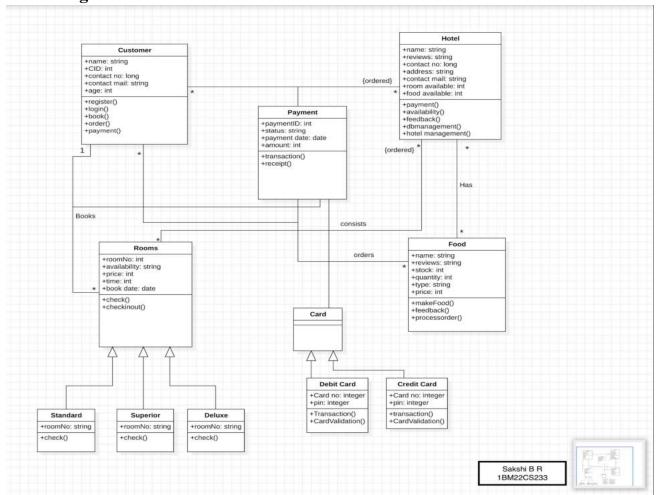
Multiple user can we this system without
any inconvinience.

3] Design Constraints:
This system is to be designed such
that is can be used according that to
enter convinient.

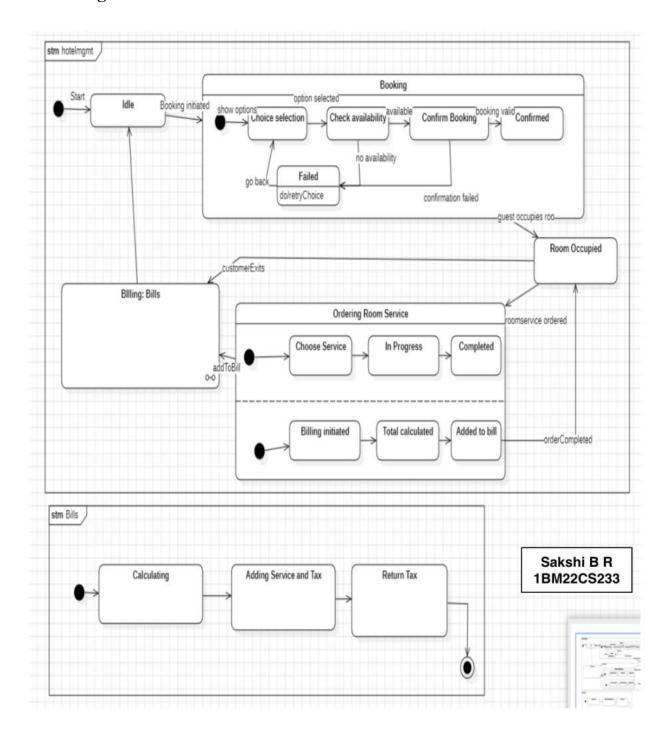
1] Non Functional Requirements
Easily accessible nothout any lime or
place constraints.

8] Pretiminary Schidule & Budget
Estimated Budget = \$5,50,000
Estimated time - 5 months

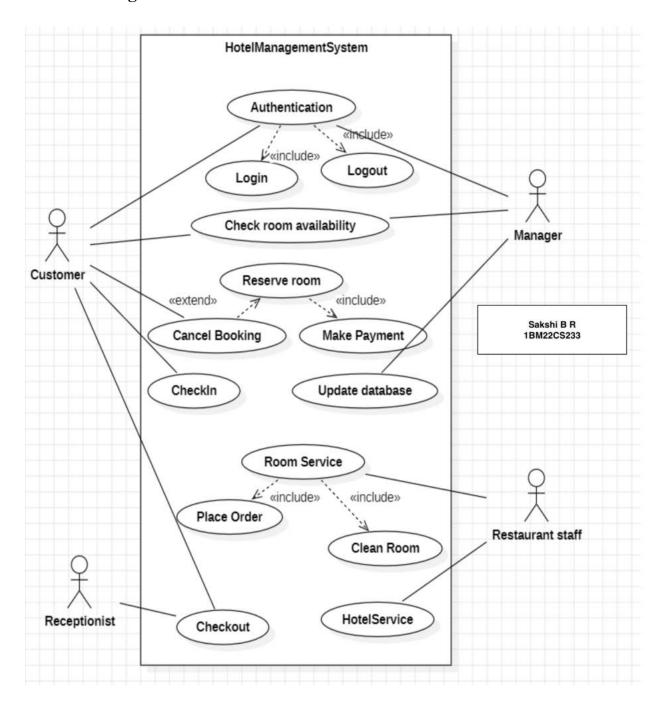
Class Diagram:



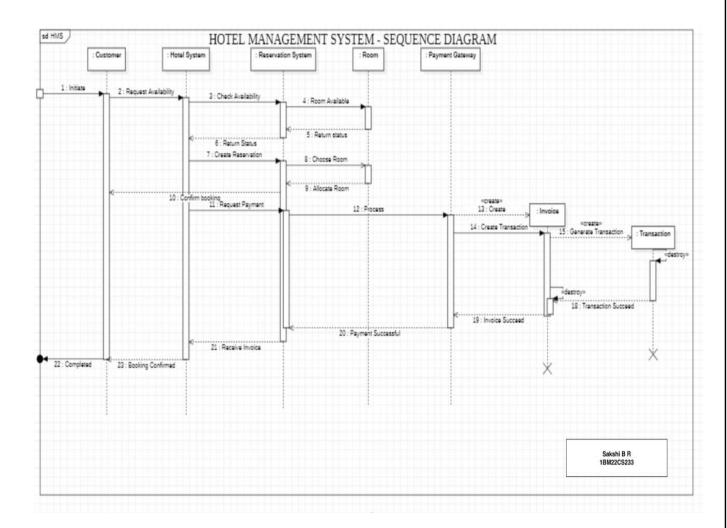
State Diagram:



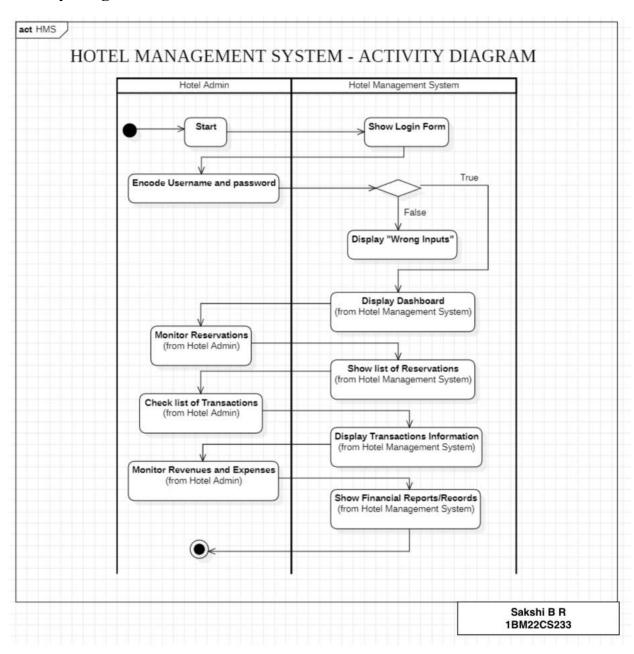
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



2. Credit Card Processing System

Problem Statement:

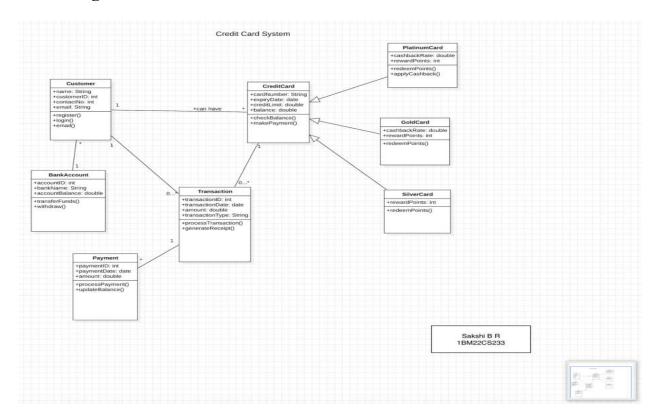
The existing manual processes for credit card transactions are inefficient, error-prone, and vulnerable to security breaches. Issues such as delayed payment processing, inaccurate transaction records, and the risk of fraud compromise both user experience and business operations. There is a need for a 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:

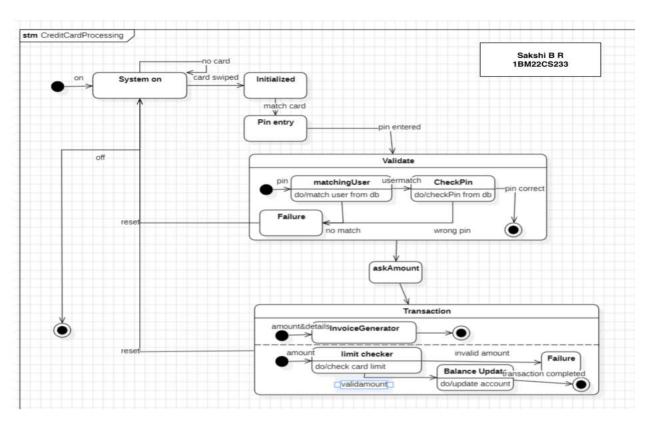
	GoodLuck Free to:
المعادين	Software Requirement Specifications.
-41	Gredit Card System:
	Introduction:- Development of Credit Card System which enables to read credit card.
- 4%	Scope of the document: Working of credit card ryxtem that is it enables user to want their credit card for their payment transaction, use account management
3.	This system shelp wer manage their credit and and processing payments.
2.5	Cremeral Description. Il ensures user to make payments, track their transaction, manage their accounts.
	Functionaloties Requirements:
April 1	Registration: User can securely register for new account with personal details.
	Issuing of card: Gredit card should be issued to user with unique number and CVV.
	Transaction Rocessing and history; This system enables users to make payment for any of their puchases. This system also enables uses to book into history of their transaction.
	This system also enables use to look into history of their transaction.

1.5	GoodLuck Page No.	}
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	or salfayerd wire arrange information fro	The state of
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	В	
4	Interface Requirement:	
- 10	This system is to be designed in such a way to	tab
	Interface Requirement: This system is do its designed in ruch a way to use for their convincent system.	
5	Performance Requirement &	
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4-34-07	payment paithin wironds.	
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	Multiple user can use this system without	
a le	multiple user can use this system without	
1	Prin to the	
6)	Perign Constraints:	
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MATERIA DA	be used in web biouser of mobile which	
	Design Combraints: This system abouted is to be designed such that we can be used in web browses or mobile which ever user are conseinent to use.	
7	None English of Day of A. C.	
7	Non Functional Requirement: Easily Accessible: The system whould be accessed easily any user.	1
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1 3	of any user	1
	Rostofkle: (an be account by 11112 answer	anyti
alled	Rostelle: Can be accessed by user anywhe	re
. Wu	me with wind with and	
	Portable: Ver can sicus the system on any	
	convincent dutices such as well prouver or	
1 3	mobile phones - is / android.	
-	any of their muhaces	
8/ 7	Prehimanary Schedule & Budget:	
	Estimated budget - \$1,00,00,000	
8	Estimated Time - 8 months	

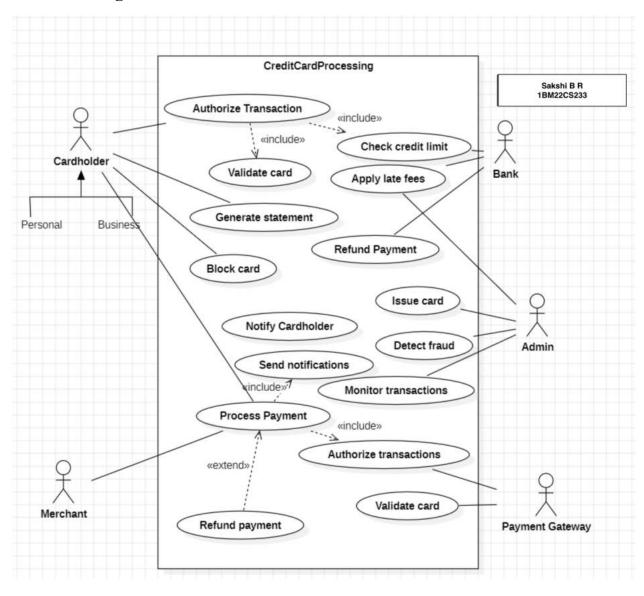
Class Diagram:



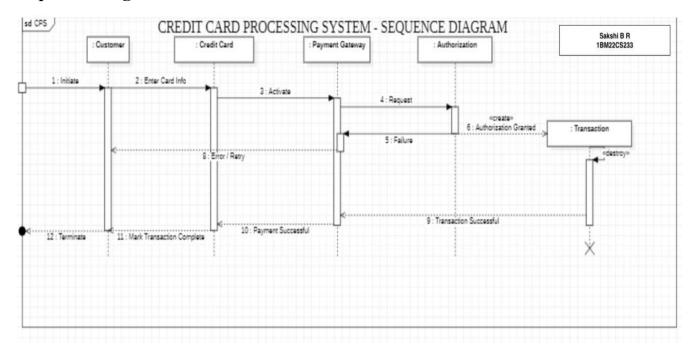
State Diagram:



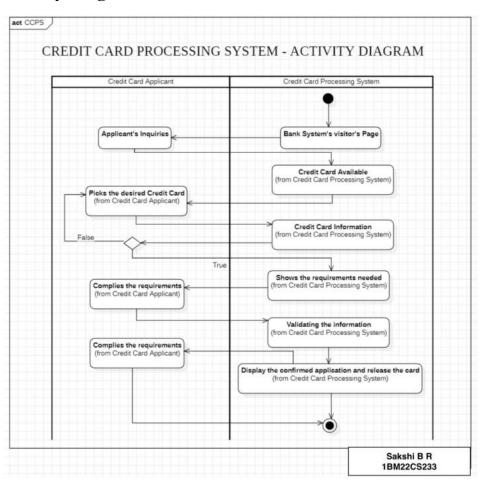
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



3. Library Management System

Problem Statement:

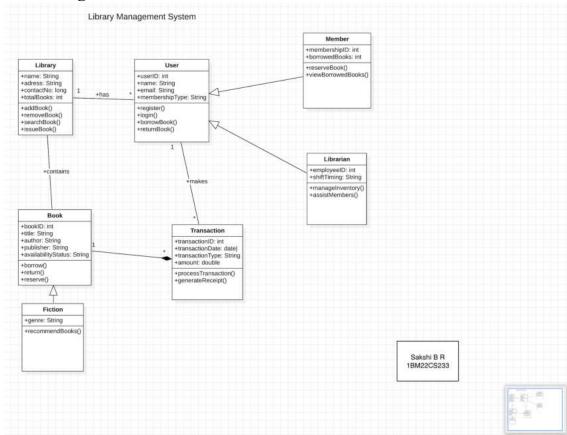
The current manual system for managing library operations, including book cataloging, borrowing, returning, and tracking inventory, is inefficient and prone to errors. Challenges such as misplaced records, overdue books, and difficulty in locating resources lead to wasted time and reduced user satisfaction. 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:

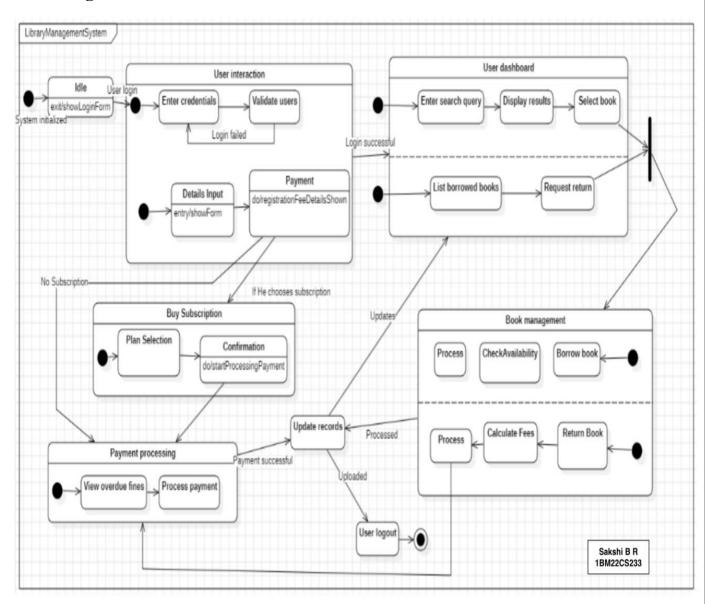
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7	246
3	Literary Management System
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	System Development of Hotel Management
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	mes sighten enables were to login
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-7	G also I C
- 3	Functional Requirement
	Login / Signup: New war or old wer can
	tegen rignesp / login.
-	Borrowing Books
	Checking availability of Required books
-	Returning Books
	U
	Fine payment
	Publishing with Monthly Marian Magazines.

Easy uses interface which is convinient Interface Requirement: Performance Requirement the software for their requirement User use within less time multiple user can use the system without any inconscinence 6 Design Constraints Designed according to user convinience web browser Available per in any Preliminary Schedule Budget Estimated cost: \$60,65,595 time: 10 months Estimated Non functional Requirement Easy to access

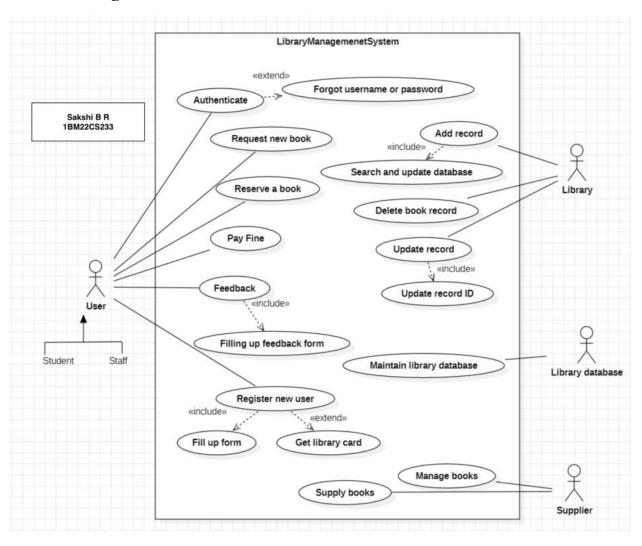
Class Diagram:



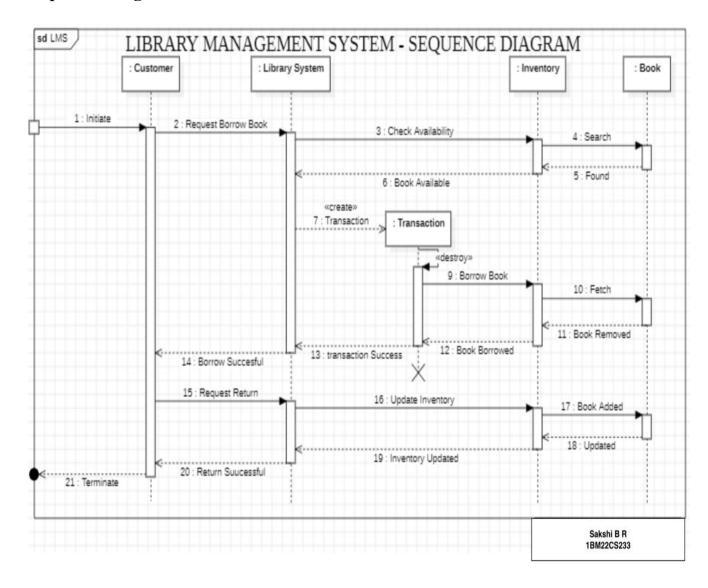
State Diagram:



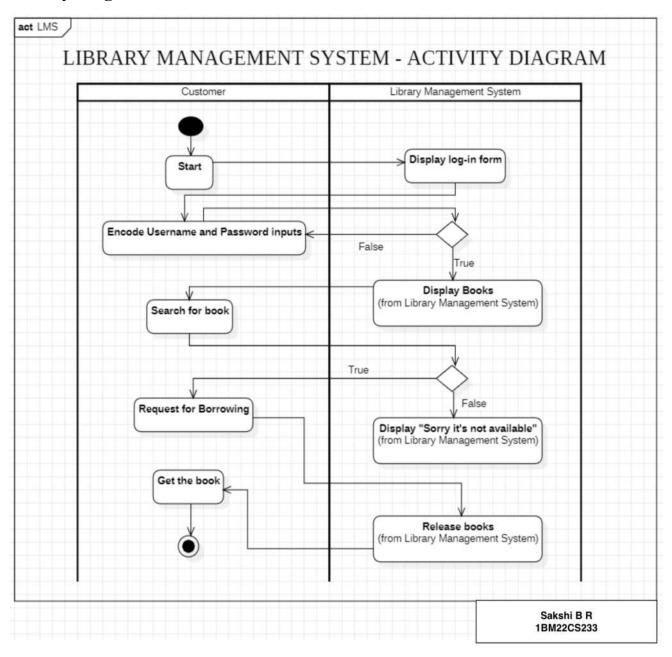
Use Case Diagram:



Sequence Diagram:



Activity Diagram:



4. Stock Maintenance System

Problem Statement:

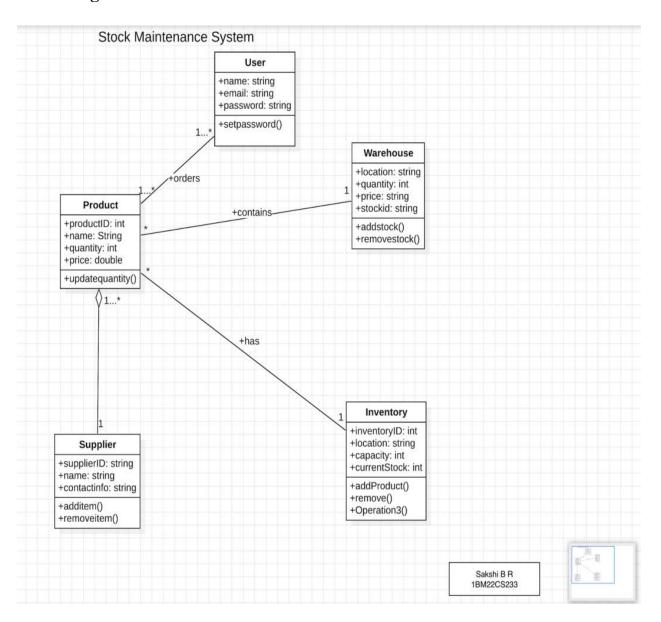
Manual stock maintenance in businesses often leads to inaccuracies, overstocking, or understocking, impacting operational efficiency and customer satisfaction. An automated stock maintenance system is needed to track inventory levels, manage reorders, reduce wastage, and optimize supply chain processes.

SRS-Software Requirements Specification:

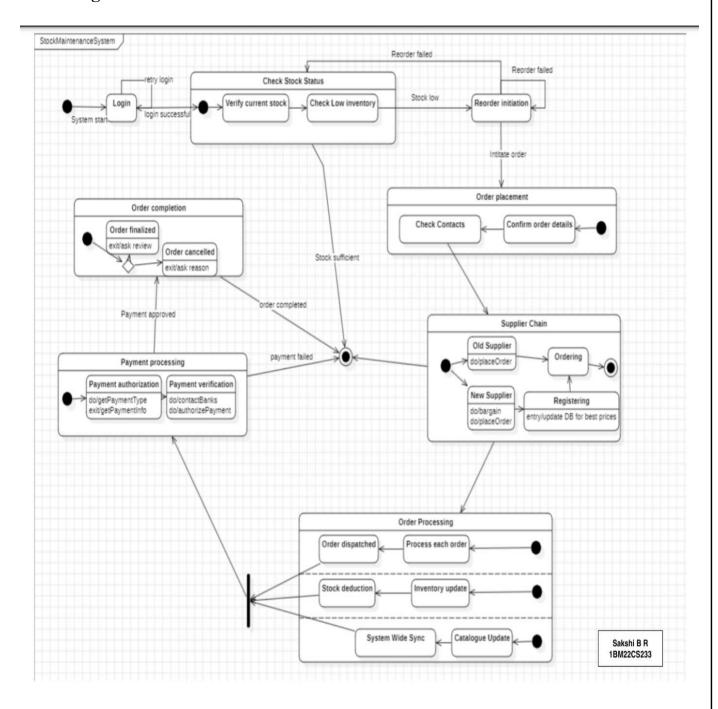
	GoodLuck Page No.
	Clote
7	Stock Maintanence Scartens
	Stock Maintanence System
1.	
	Purpose: The aim of this document is to
	Purpose: The aim of this document is to dyine the purpose, scope and requirement up the Stock Maintenance System.
4	of the Stock Maintenance System.
- City	Scope: This document ordlines the functionalities take stock monitoring, older management and reporting
	tike stock monitoring, older management
	and reporting
700.11	last pain a district of
	Overview: This document conseite of functional prequirement non functional requirement, use interface and budget
	functional requirement, non functional
	requirement, will unles fact and broger
	a comition this tente comits of
2.	oreneral description the region tracking of
	General Description: This trystem counts of features including real-time tracking of stock levels automated about for
	low stock etc.
3.	Functional Requirements
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	Vier Authentication - Vie must log in
	with unique adentials enturing secure
	User Buthentication. Use must log in with unique credentials enewing secure access
	1400
	Stock management
	Stock Herts
	Reporting

	GoodLuck Page No.
	Dass
4	Enterface Requirement for stock mondoring, web-based dashboard for stock mondoring, management interface
	Web-based darboard for
41	Easy wer interface
1	and the second was the first
5.	Performance Requirements handle and support
illand i	Performance Requirements the rystem must handle and support multiple users with less response line
6.	Derigned in seuch a way that user access through any neet browser.
	access through any need browger.
20612.1	Non-Functional Requirement Security: Semitive data is to be recured.
F 61	Security: Semifive data is to be
10 00	The enter should be acceeded
100	The system should be accessible accords multiple platforms
	Tel 1 A 1 A 1
X .	Extinated time is 6 months Extimated budget: \$ 5,00,000
	City of time is 6 months
10.5	Extimated budget: \$5,00,000
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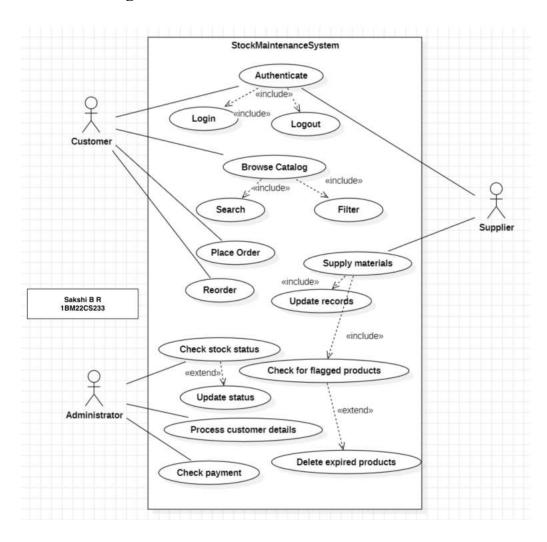
Class Diagram:



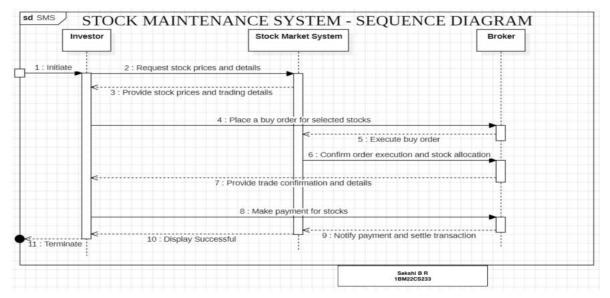
State Diagram:



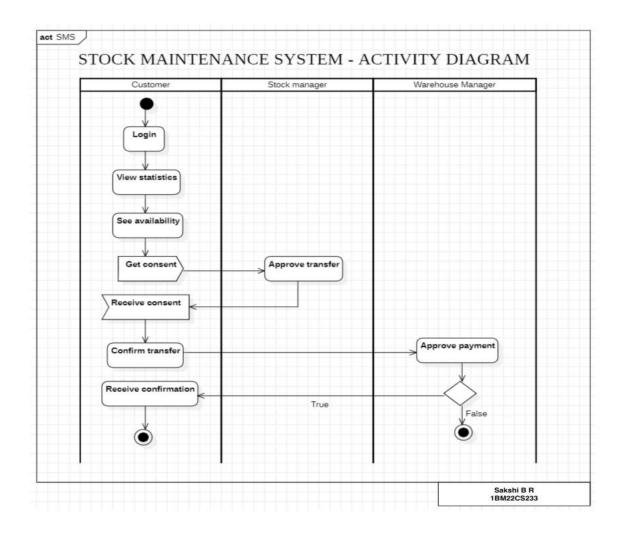
Use-Case Diagram:



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:

	GoodLock / rope so
67	Passing A. L. C.
b)	Parsport Automation System
1	Introduction Purpose: This document outlines the durlopm of passport Automation System.
	Purpoul : This de
	of passport Auto di
	p 1 of mation System.
	Scope: This document consists of functional requirement, now functional requirement
	requirement now a consists of functional
	user interface budget requirement
	Jamiger .
	from use registration to authoritisation
	from usu registration to a be everything
1	authentication
الو	Grenual Discription:
	This system courses seeme registration of
	use, use parthertifics authentication
	Greneral Discription: This system consures secure registration of use, next markerships authentication, secure maintanence of perf personal information. Requirements of perf personal information.
2]	Function Reavis 4
9	Function Requirements:
4	Registertion of my
	Registration of user
	Application of passport
	Verification documents.
•	Use authentication.
4 1	LIAMA IOCE KOOLILIOON II
4	Week and be interested
4)	Vsch iant de interface which is
4)	Vsch lant de interface which is convenient for use to use
57	Performance Requirement Performance Requirement Multiple wer can user without any

GoodLuck Poorts

Design Constraint

Resigned such Alat it is articlable

in any neb browser

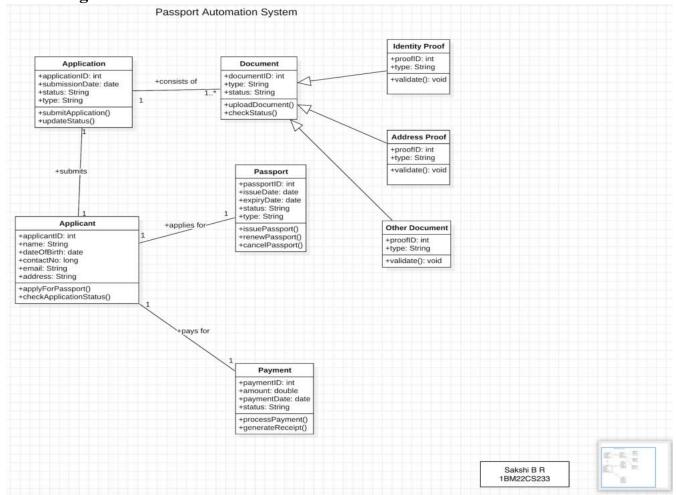
Nors purction:

Easy accessibility

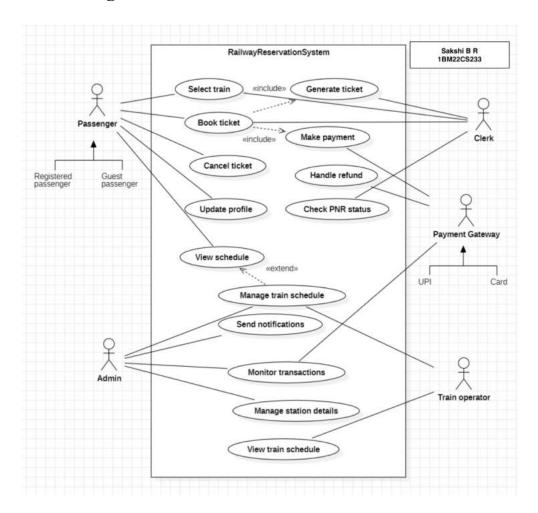
Preliminary Schedule
Estimated biologet: 550,00,000

Estimated Time: 5 months

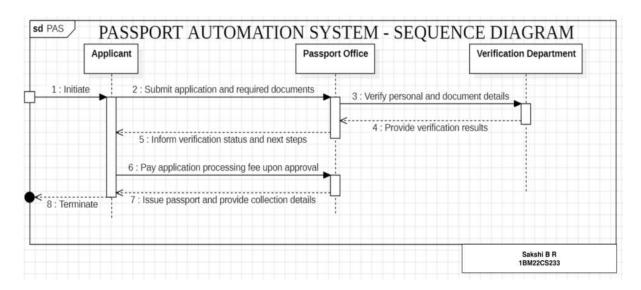
Class Diagram:



Use-Case Diagram:



Sequence Diagram:



Activity Diagram:

