Index

Name S PRANAV RANGANATH Class Year

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1.	30/9	SRS Document.			[illegible]
2	14/10	Class Diagrams.			[illegible]
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SRS Document

Credit card processing / system

1. Introduction

1.1 Purpose of this Document

The purpose of this document is to provide a detailed description of the credit card processing system to facilitate its development and implementation.
This document serves as a guide for all the end-users and developers

1.2 Scope of this document

This system will allow business to accept credit card ~~systems~~ payments securely. It will handle transactions by maintaining industry stands

1.3 Overview

It will be a web based application that will tie up with different small scale - e-commerce businesses initially to provide credit card payments ~~to the~~ as an option to the end user to complete a transaction

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2. General description

The product will be able to accept a 16 digit card number of the user, cvv, card holder name and the expiry date of the card. Once the user enters all these details he will be able to make a payment; using that particular credit card.

The user will be able to safely enter his data as we will make sure the private information does not get leaked using a secure gateway and we will also provide fast transactions to the user

All type of users who mainly rely on buying their goods online will find this product beneficial and since such users are growing by the day, the product will gain in popularity

3) Fuctional Requirements

- User Authentication :- The user will need to verify himself everytime he wants to use the product. The user initially signs up by setting a username and password and he will need to use this later on to verify himself

- Forms and fields :- We need to implement different forms and field to get user data.

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- Transaction processing :- The system will be able to validate a credit card and allow users to initiate transactions.

- Cancellation policy :- The system will allow users to get a refund on their payments.

4 Interface Requirements

- The formas and fields will be used to communicate with the user to get his bank details The form will consist of :- Bank name, Card no, Cvv, expiry date, username.

- At the backend we will be able to communicate with the bank to complete the transaction, integration with a payment gateway, and API's

5. Performance Requirements

- Transaction processing speeds :- The system shall provide fast speed for 4 and acceptable speeds during heavy load of the application.

- System availability :- The system shall be available to use almost always.

- Resource utilization :- The system shall not

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use too much of the system's resource.

6. Design Constraints

- We need to use fine grain technology to improve the speed of our system
- Decreasing in redondancy will improve security, we need to store all the personal information in the inner layer of our system so that it can't be easily breached.
- We could use RSA to encrypt our data and store it.

7. Non functional attributes

1) Performance :- The system shall be able to handle a decent amounter of transactions/min

2) Security :- The system shall be able to provide safe and secure transactions, without any breach of data

3) Usability :- The system shall provide a friendly user interface, which can be easily used.

4) Backup and Recovery.

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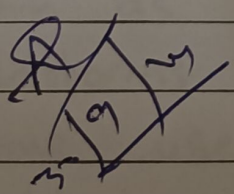
8. Preliminary Schedule and Budget.

Phase	Duration
• Project initiation	2 weeks
• Requirements gathering	4 weeks
• System Design	6 weeks
• Development	12 weeks
• Testing	4 weeks
• Deployment	2 weeks
• Training and documentation	2 weeks
• Deployment support	4 weeks

Budget breakdown	Estimated cost
• Personnel Costs	$ 200,000
• Software licenses	$ 10,000
• Infrastructure	$ 15,000
• Security	$ 5,000
• Training	$ 5,000
• Marketing and ~~Launch~~ Launch	$ 10,000.



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Hotel Mangement System

1 Introduction

1.1 Purpose of this Document

The purpose of this SRS is to define the functional and non functional requirements for the Hotel Management System.

1.2 Scope :- The HMS is intended for use by hotel Managers, front desk operators, staff and customers

1.3 Overview :- This document outlines the requirements for the development of the HMS. It includes detailed descriptions of system features, user classes and specific functional and non-functional requirements

2. General description :- The HMS is a web-based application designed to manage hotel operations. It interacts with various external systems such as payment gateways, online booking platforms, and property management software. Some users that would use this software would be Hotel Managers, Front Desk operators, staff, Customers.

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The system ~~with~~ shall be responsive and access -ible on various devices. Security protocols and third party API integration is also available

3 Functional Requirements

· Staff Management :- The system should allow the manager to schedule shifts and assign duties to staff members

· Room booking Management :- Is used to help the front desk operator to ~~many~~ manage room bookings, check-ins and check-outs.

· Reporting and Analytics :- The system must generate daily, weekly and monthly reports on hotel occupancy, revenue and staff performance.

4. Interface requirements

· Payment Gateway API :- To handle customer transactio

· Booking API :- Support integration with external booking platforms.

5 Performance Requirements

· The system should load any page within 3

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seconds
- The system should have an uptime of 99.9% and provide backup mechanism.
- The web page should not use more than 200MB.

6. Design Constraints

- The system must be developed using specific technologies such as
  Front End :- HTML, CSS3, JS
  Back End :- Node.js (Express)
- Should follow PCI-DSS to comply with security standards.

7. Non-functional Requirements

- Performance :- Should be able to handle upto 500 simultaneous users without performance degradation.
- Security :- Should use HTTPS for secure communication.

8. 8. Preliminary Schedule and Budget.

Phase	Duration
Project planning and Requirement	2 weeks
System Design	4 weeks
Frontend and Backend Development	8 weeks
Testing and quality Assurance	4 weeks

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Phase	Duration
Deployment and Go-Live	2 weeks

Budgedt Breakdown	Estimated cost
Development costs	$61,200
Infrastructure and tools	$3,150
Post deployment and maintenence	$7,500
Miscellaneous	$9,185

Library Management System

1 Introduction :

1.1 Purpose of this document :- This document provides a detailed description of (LMS). It serves as a guide for developers, project managers.

1.2 Scope :- The LMS will manage the collection of books, user registrations, book loans, returns and inventory management.

1.3 Overview :- The product/software will basicallly help the library staff to keep track of books borrowed and to keep track of the total number of books in the library.

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2. General description :- The LMS is a standalone application with a client-server architecture. It will interact with a database to store and retrieve data. Some of its functions include user registration and management, reporting tools for admin. The ~~manage~~ Admin, manages users, books and overseas systems. The user can search for books, manages personal account and can borrow/returns books

3. Functional Requirements :-

- User Registration :- Users can create an account with their personal information.

- ~~User login~~ = ~~User~~

  Book Management :- Admin can add, update or delete book records

- Search functionality :- Users can search for books by title, author or genre.

- Reporting :- Admin can generate reports on book inventory, user activity.

4. Interface Requirements :-

Payment Gateway API :- To handle customer transaction

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Tracker API :- To keep track of the books borrowed by the user

5. Performance Requirements :-

- Response time :- The user should be able to open the website within 5 seconds
- Throughput :- The website should be able to perform around 50 transactions at a time.
- API calls :- Should allow upto 1000 API calls per minute.

6. Design Constraints :- The website must use HTML, CSS for front end and Node.js (Express.js) for backend.

we need to have restful API's.

7. Non-functional Attribute :-

Data integrity :- Data should not be accessed or change by unauthorized users

Portability :- The application should be able to run on all types of platforms.

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~~Performance :-~~

Capacity :- The website should not take upto 200 MB of memory.

8. Preliminary schedule and Budget

Phase	Duration
· Project initiation	2 weeks
· Requirements gathering	4 weeks
· System Design	3 weeks
· Development	10 weeks
· Testing	3 weeks
· Deployment	2 weeks

Budget breakdown	Estimated cost
· Personnel Costs	$ 200,000
· Software Licenses	$ 10,000
· Infrastructure	$ 15,000
- Security	$ 10,000
· Training	$ 7,500
· Marketing and launch	$ 2,500.

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Stock Maintenence system

1 Introduction :

1.1 Purpose :- This document is necessary for developers, project managers and users to get a basic understanding of the website. It defines the functional and non-functional requirement required by the website.

1.2 Scope :- The system will allow users to, add, edit and delete stock items, monitor stock levels and maintain transaction history.

1.3 Overview :- This product will help investors to keep track of stocks they are interested in, and help companies display their stocks, stock quantity, stock prize. We also use an AI algorithm to recomend investors to invest in particular stocks

2. General description :

The stock maintenance system will serve as a centralized platform for inventory management within an organization. It will be a standalone web based application that integrates with other business systems such as accounting or ERP systems.

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Some basic features could include like, stock management, stock trading, low stock Alerts and reporting, and users of the system may include Inventory Managers, Warehouse personnel, procurement teams.

3) Functional Requirements :-

- Stock level monitoring :- Real time monitoring of stock levels with alert generation for low or critical stock levels.
- Stock Movement Tracking :- Tracks incoming and outgoing stocks, keeping a record of transactions.
- Reporting :- Generate detailed reports on stock levels, stock movement and transactions.

4) Interface Requirements :-

- User Interfaces :- Login/Logout screens, Dashboard.
- Hardware Interfaces :- The system will interface with warehouse RFID systems.

5) Performance Requirements :-

- The system should handle upto 10,000 stock items efficiently.

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- Response time for most user actions should be under 3 seconds

6) Design Constraints :- The website must use
HTML4 CSS for frontend and Node.js (Express.js) for backend
We need to have restful API's

7) Non functional Attribute :-

- Security Requirements :- User authentication, Role based access control, Daily backups of inventory data.
- Usability :- The system must be intuitive and require minimal training for warehouse personnel
- Availability :- The system should have 99.9 % uptime, with backups

8)

Phase	Task	Duration
• Requirements Gathering	Meet stakeholders Draft SRS document	2 weeks
• System Design	Design system architecture	3 weeks

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Phase	Task	Duration
• Development phase	Develop core modules Develop additional features	4 weeks
• Testing	UAT and unit testing	3 weeks
• Deployment	- Deploy system and train users	1 week

Preliminary Budget

Category	Estimated cost
Development Team	$ 30,000
Project Management	$ 15,000
Hardware and Software	$ 5,000
Training and Support	$ 7200

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Passport Automation System

1 Introduction :-

1.1 Purpose :- The purpose of the Passport Automation system is to simplify the process of applying for, renewing and verifying passports, reducing the burden on administrative staff and applicants.

1.2 Scope :- The PAS will allow citizens to apply for a new passport or renew an existing one online, automate the scheduling of appointments and document verification and provide online payments for application fees.

1.3 Overview :- This system benefits both applicants by simplifying the passport process and government agencies by providing key features, online application submission, appointment scheduling, status tracking, Payment gateway.

2. General description :- The PAS will be a web-based application accessible to both citizens and government staff. It will integrate with national identification databases, payment gateways and appointment schedules. Its features will include :- Document upload, Appointment

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scheduling, online payments. There are two primary types of users:

- Applicants :- Citizens applying for or renewing a passport.
- Administrator :- Government officials responsible for reviewing the process.

3) Functional Requirements

- Online Application :- Allows applicants to fill in the required information for passport issuance
- Document uploading and verification :- Enable users to upload required documents, which are veribied by administrators.
- Payment Integration :- Provide secure online payment options for applicant fees.

4) Interface Requirements

- User Interfaces :- A simple and different interfaces for applicants and admins.
- Payment gateway API :- An interface to provide secure payments.

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5) Performance Requirements

- The system should handle upto 10,000 concurrent users without performance degradation.
- Average response time for most operations should be under 3 seconds.
- The website should not use more than 200 MB of memory

6) Design Constraints :- The website should use HTML, CSS for frontend and Node.js (Express.js) for backend we need to have restful API's.

7) Non functional Attributes :-

Security Requirements :- Users data and documents must be encrypted in transit and rest, and should have multifactor authentication.

Usability :- The user interface must be intuitive and clean

Availability :- The System should have 99.9% uptime

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Preliminary Schedule

Phase	Tasks	Duration
· Requirements Gathering	- Stakeholder meetings - Prepare SRS document	3weeks.
· System Design	- System architecture design	4 weeks
· Development phase	- Develop core modules - Develop additional features	4weeks.
· Testing	UAT and unit testing	3weeks
· Deployment	- Deploy system and train users	1week.

Preliminary Budget

Category	Estimated cost
Development team	$50,000
Project Management	$15,000
Hardware and Software	$ 5,000
Training and Support	$ 7,400

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Railway Reservation System

~~Purpose of~~

1. Introduction :-

1.1 Purpose :- The purpose of this document is to specify the functional and non-functional requirements for the Railway Reservation system (RRS). It provides a comprehsive guide to system development and operation.

1.2 Scope :- It covers all aspects of the RRS, including the main objectives, system functionality and key features. The document highlights the development costs, timeline and expected benefits for both the railway authorities and passengers

1.3 Overview :- The RRS is a web-based platform that allows passengers to book tickets online, check availability and manage reservations. It will replace manual booking processes and improve ~~overall~~ operational efficiency.

2. General Description :- This system facilitates online ticket booking for railway passengers. It provide features such as searching for available trains, checking seat availability, booking tickets,

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and processing payments. The key features are:-
- Online train search, real time seat booking, payment gateway and automated refund process.

3) Functional Requirements

- Train search and Availability :- The system should allow users to search for trains between two stations on specific dates and check seat availability.
- Ticket cancellation and refund :- Users can cancel tickets and the system will automatically process refunds.
- Reservation status Tracking :- Users can view the status of their booked tickets.

4. Interface Requirements :- • User interface :- It will provide a simple interface to users to use the functionality of the website.
- Payment Gateway Integration :- It will use an external gateway for secure transactions.
- Database interface :- The system will communicate with a database that stores user profile.

5. Performance Requirements

- Response time for the functialities should be

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between 2-5 seconds.

- The system should support up to 10-000 concurrent users
- Should not take more than 200 mB of memory.

6. Design Constraints :- The system must be accessible across multiple devices.
- Should use HTML, CSS for frontend
- Should use Node.js for Backend
- And all API's should be restful.

7. Non functional attributes :-

- Security :- The system will use special encryption to ensure data security.

- Reliability :- The system should maintain 99.9 % uptime to ensure availability for users and administrators.

- Usability :- The interface should be simple, intutive and easy to navigate for users with various techical proficiencies.

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8. Preliminary Schedule

Phase	Task	Duration
· Requirements Gathering	- stakeholder meetings - prepare SRS document	3weeks
· System Design	- system architecture design	5weeks
· Development phase	- Develop Core Modules - Develop additional features	6weeks
· Testing	- UAT and unit testing	3weeks
· Deployment	- Deploy system and train users	1week.

Preliminary Budget

Category	Estimated cost
Development team	$ 50,000
Project Management	$ 15,000
Hardware and Software	$ 5,000
Training and support	$ 7600

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Online Shopping System

1. Introduction

1.1 Purpose of this Document :- This document outlines the software requirements for the online shopping system. It serves as a guide for the development team and stakeholders, defining the system's features and functionality.

1.2 Scope of this Document :- The scope of this document covers the design and functionality of OSS including user interface, backend functionalities, integration with payment gateways, product management and customer support features.

1.3 Overview :- The OSS is a web-based application that enables users to browse, select and purchase products online. The system offers features such as user registration, product search and filtering.

2. General Description

The OSS allows customers to browse through product categories, search for specific items, view product details, reviews and ratings, add products to a shopping cart and proceede to checkout, pay through integrated online payment gateways and track order status and request

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returns or exchanges. The system aims to provide a seamless, user-friendly shopping experience as well as support efficient management of products and sales.

3. Functional Requirements

- User Registration :- Users can create an account by providing personal details

- Product Browsing and Searching :- Users can browse products by categories and apply filters

- Shopping cart :- Users can add products they like into a cart

- Payment integration and order tracking :- Users can make secure payments and track their orders.

4. Interface Requirements :-

- User Interface :- A web interface for customers to browse products, add to cart, manage orders and make payments.

- Payment Gateway Interface :- Integration with third party payment services eg (PayPal)

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5 Performance Requirements

- System Response to user quiries should all be done within 3 seconds
- The system must handle up to 10,000 concurrent users without performance degradation.
- The system should be up 99.9 % of the time.

6 Design Constraints :-

- Browser compatibility :- ~~Sys~~ web application should be compatible with the popular browsers.
- For the frontend we should use HTML and CSS.
- For the backend we should use Node.js
- All are API's need to be Restfull.

7. Non functional Attributes

- Security :- We must use enaryption to secure data transfers, especialy during payment.
- Reliability :- The system should ensure reliab -ility and timly backup.
- Scalability :- The platform should be designed to scale easily to handle an increasing number of users, products.

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8. Preliminary Schedule

Phase	Task	Duration
· Requirements Gathering	- Stakeholder meetings - prepare SRS document	2weeks
- System Design	- System Architecture design	4 weeks
- Development phase	- Develop core modules - Develop additional features	6 weeks
- Testing	- UAT and unit testing	2weeks
- Deployment	- Deploy system and train users	2weeks

Preliminary Budget

Category	Estimated Cost
Development team	$45,000
Project Management	$10,000
Hardware and Software	$5,000
Training and Support	$7,000.

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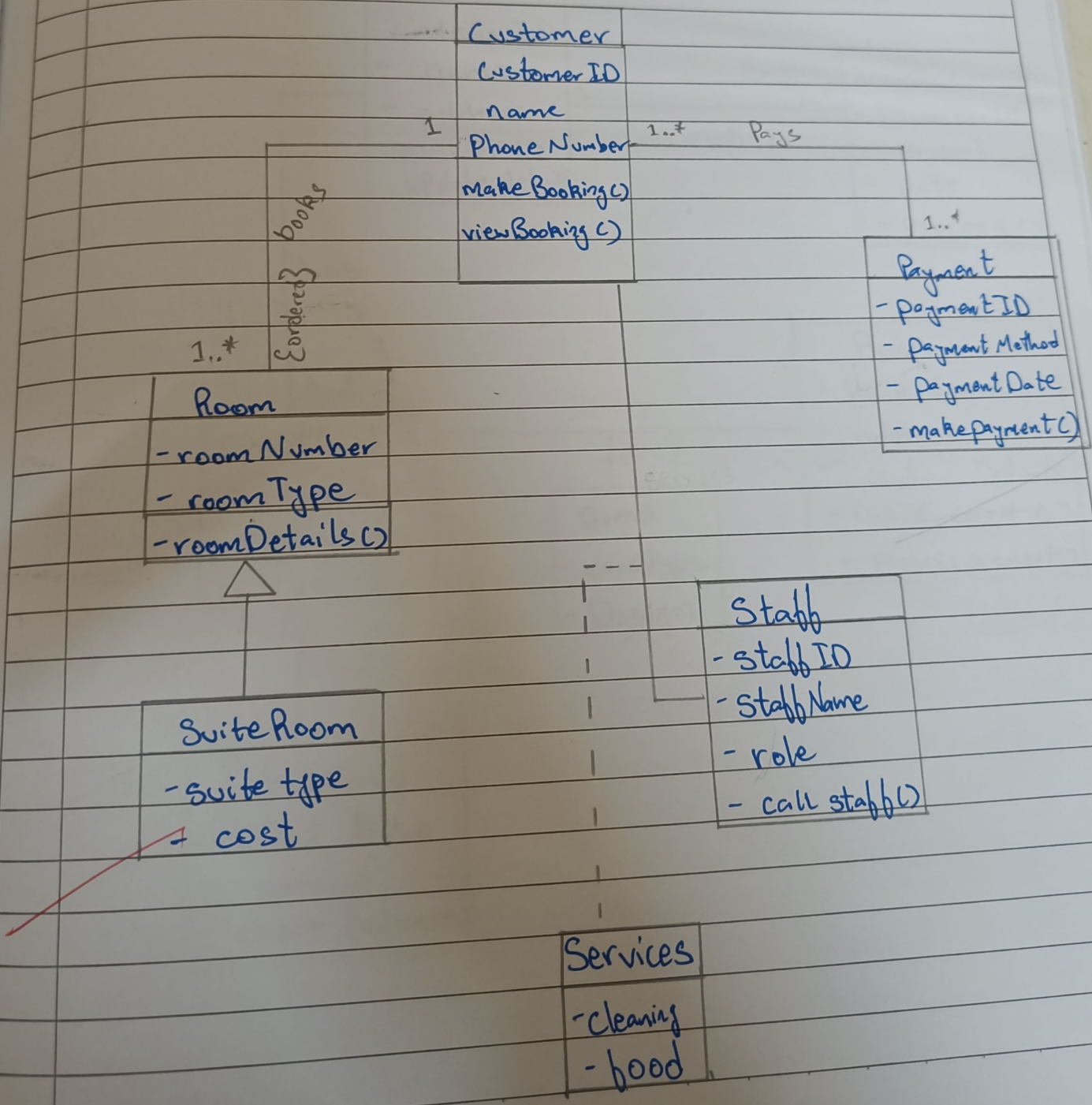
Class Diagrams

1) Hotel Management system



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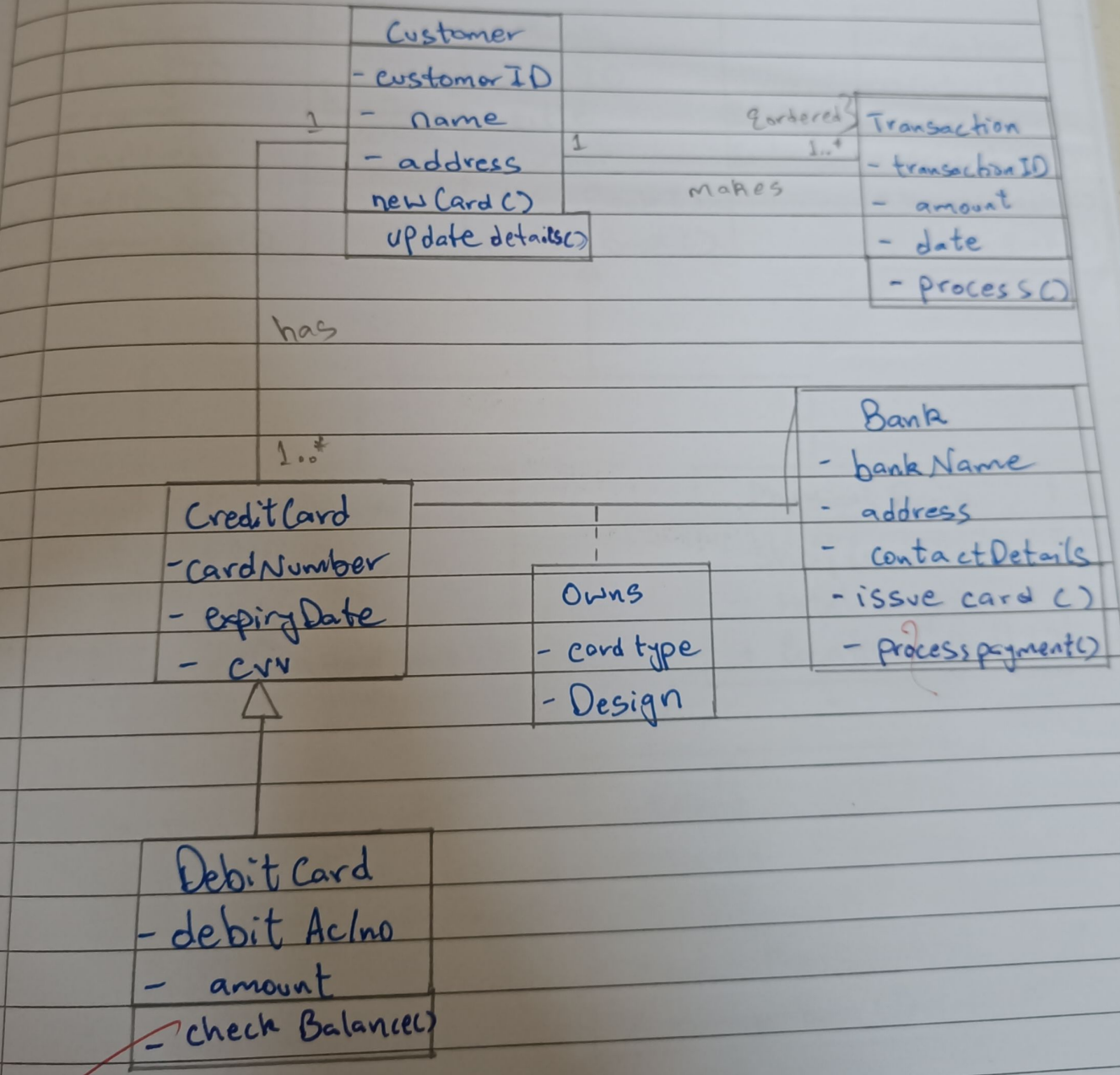
2) Credit Card processing



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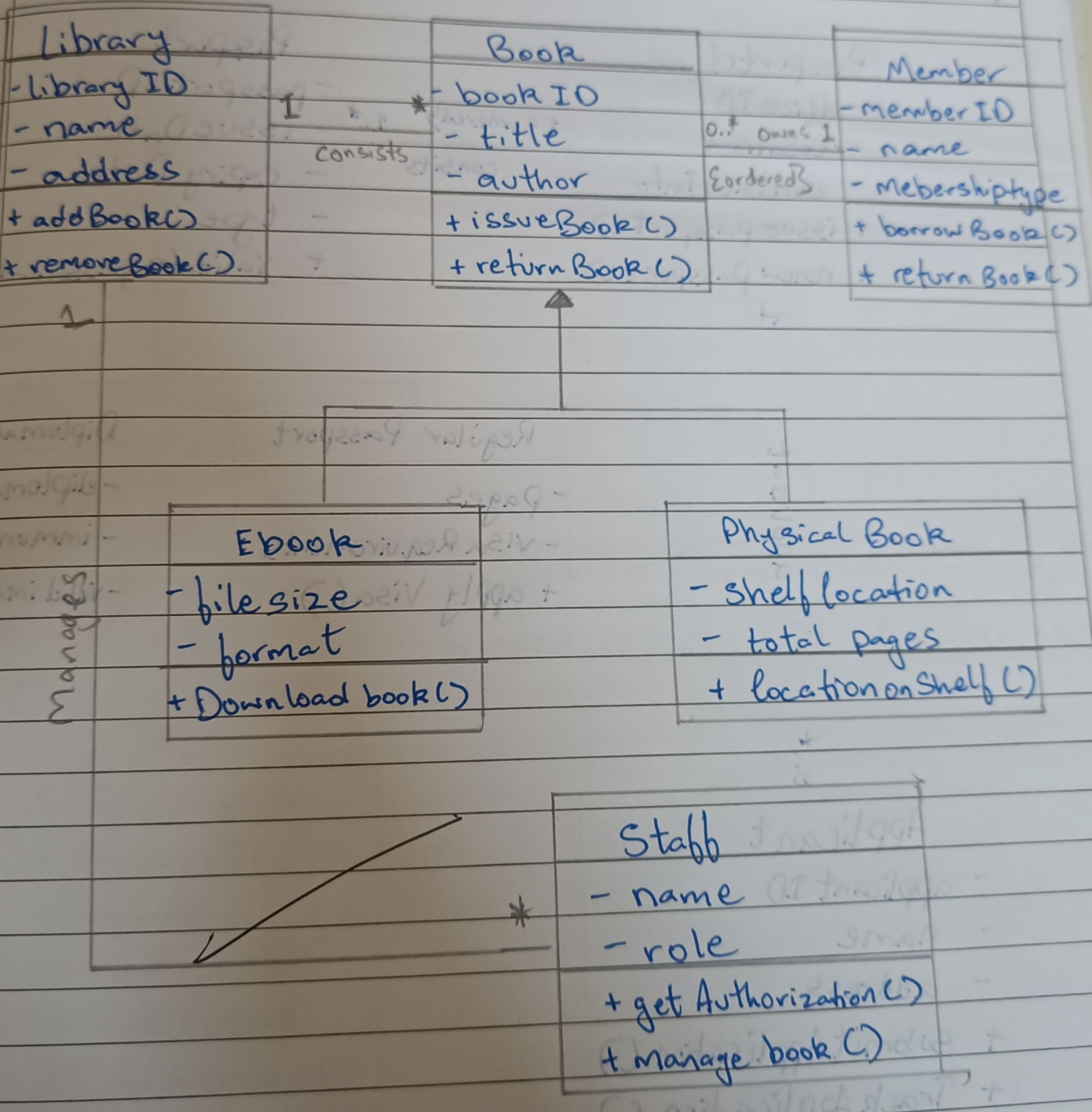
3) Library Management system



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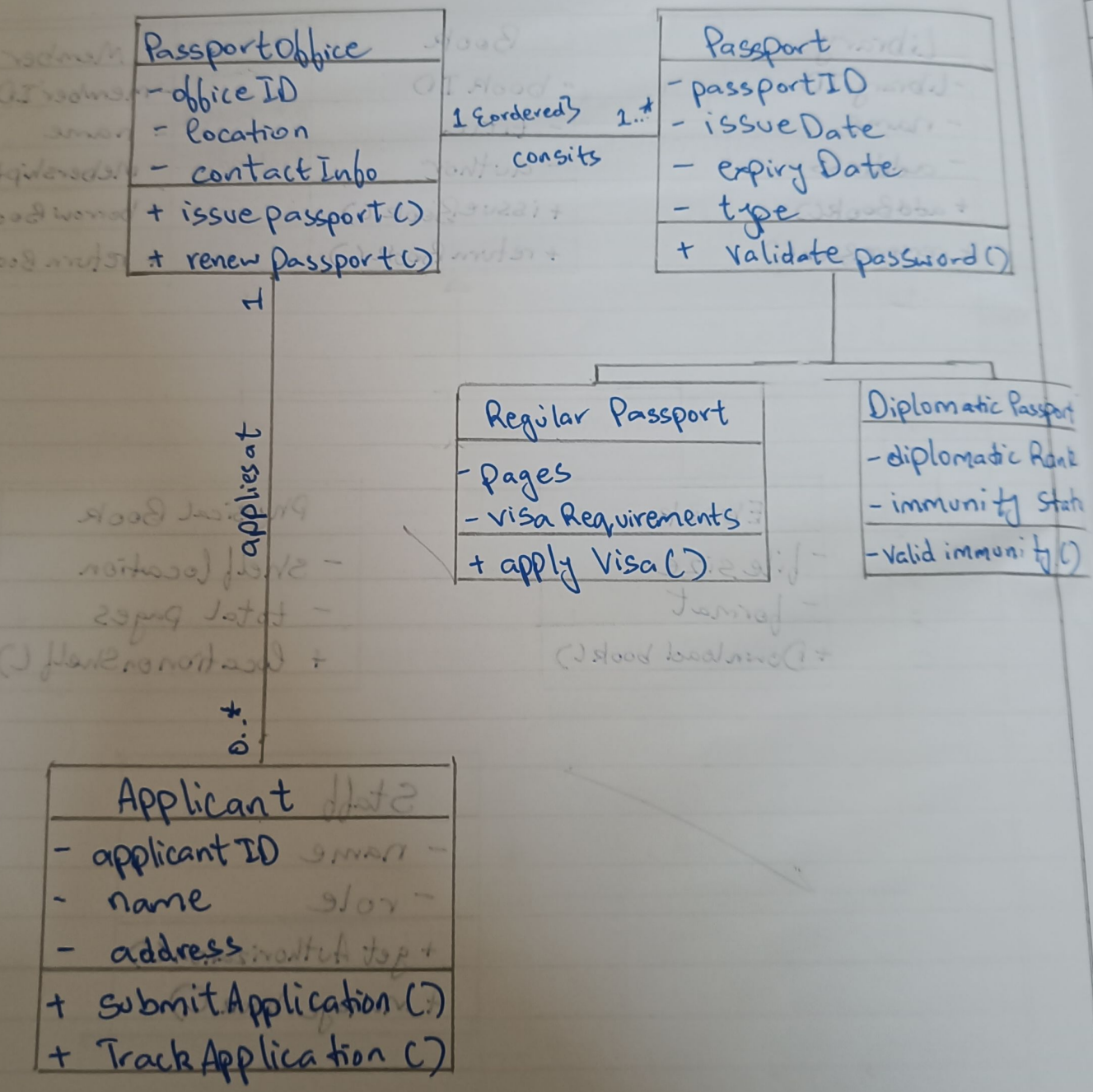
5) Passport Automation System



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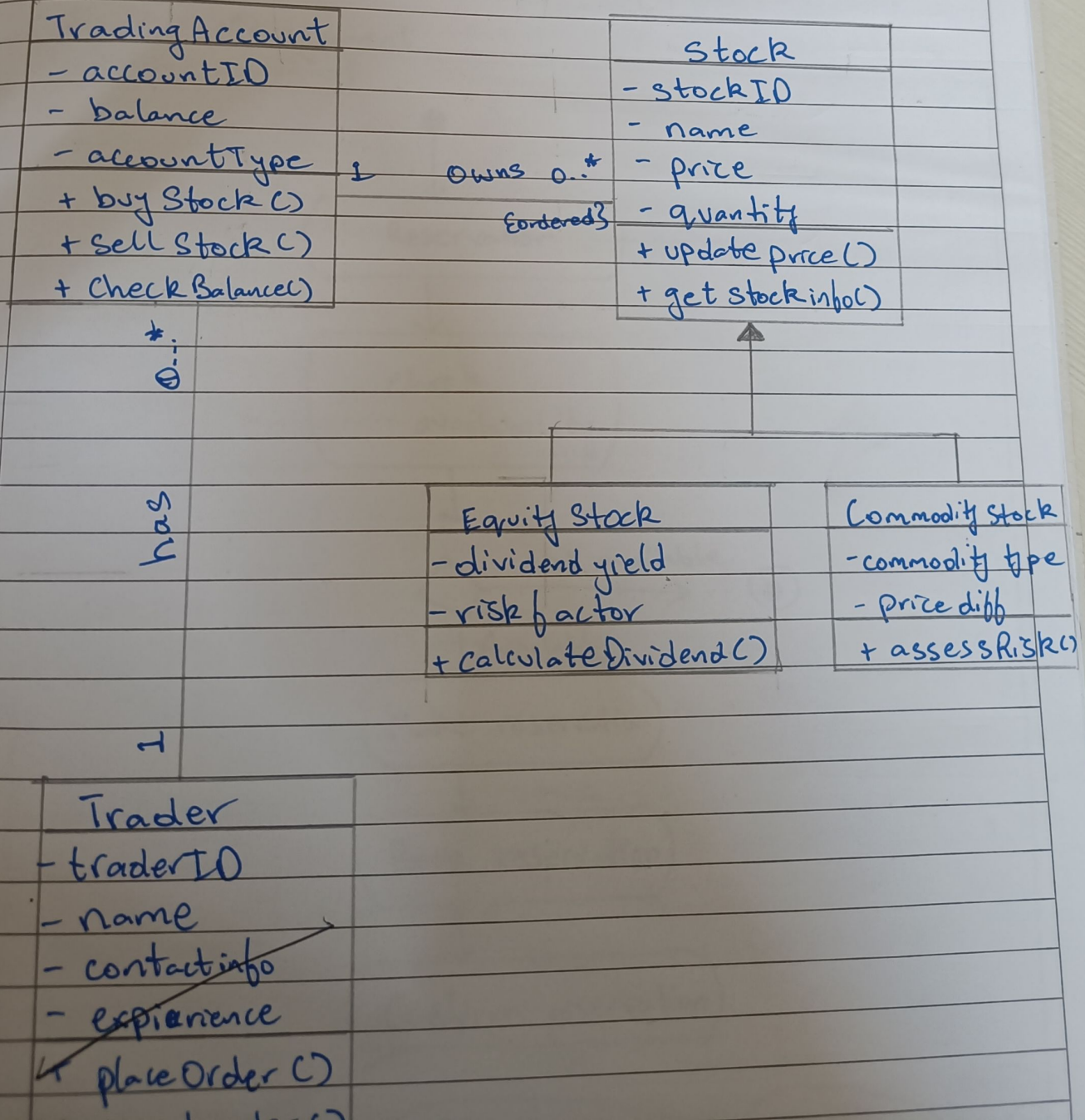
4) Stock Trading System



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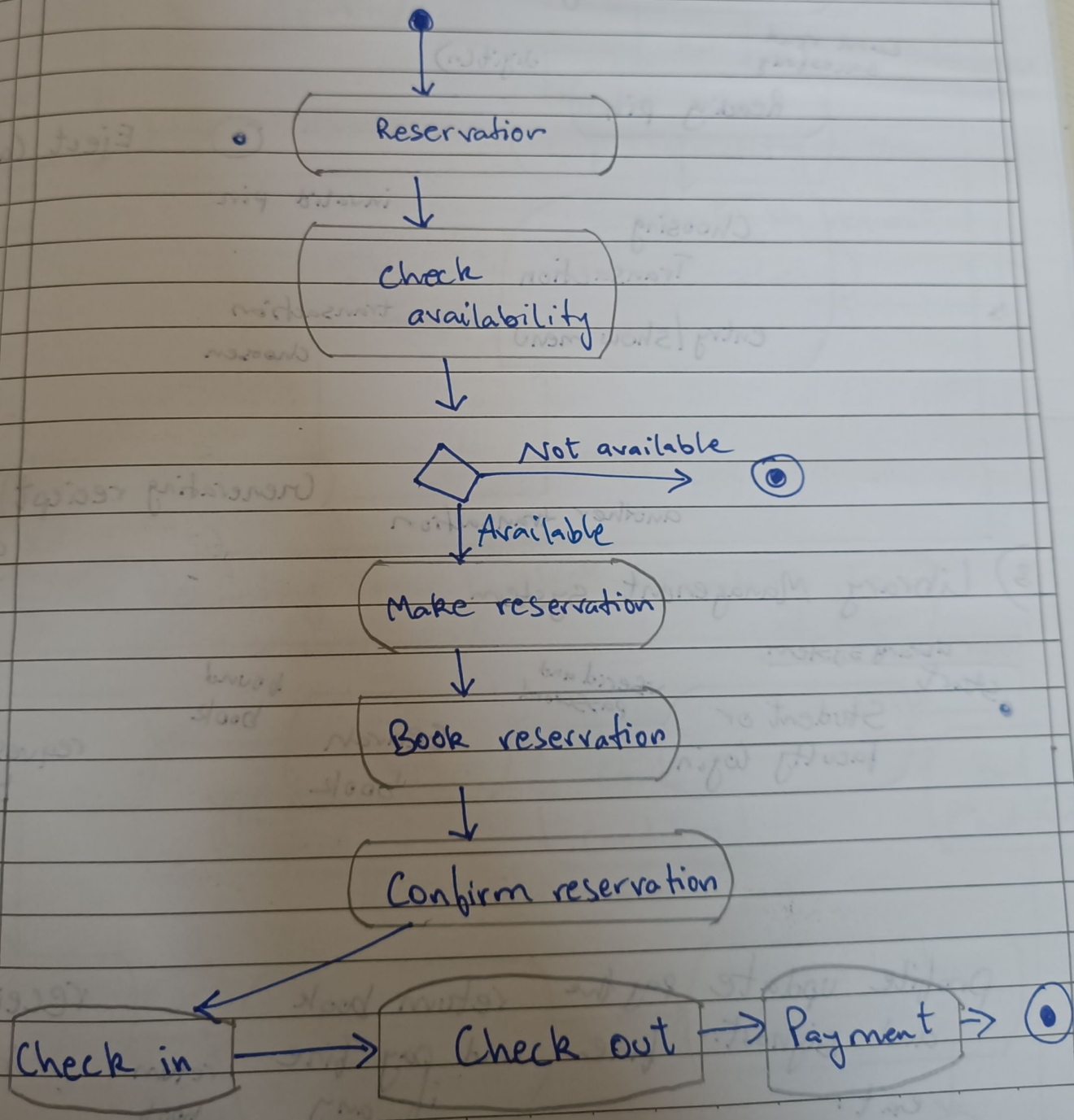
State Models

1) Hotel Management

stm Hotel management



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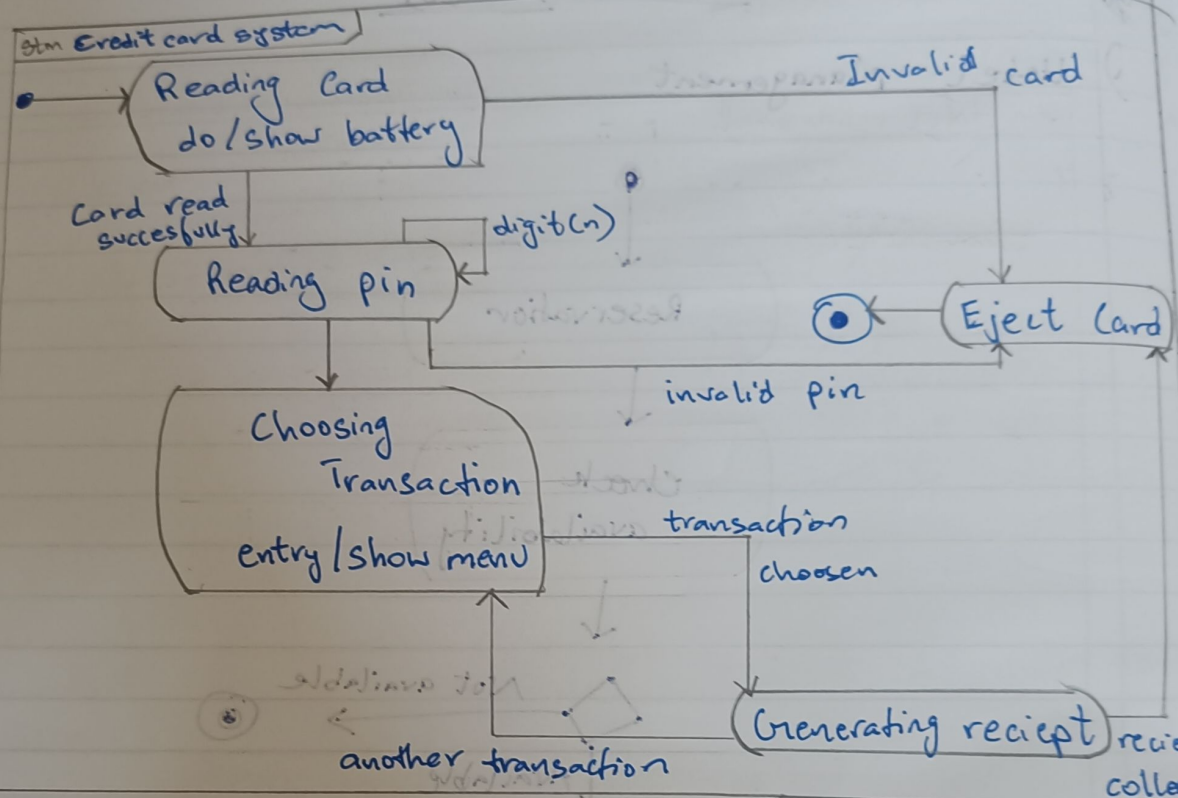
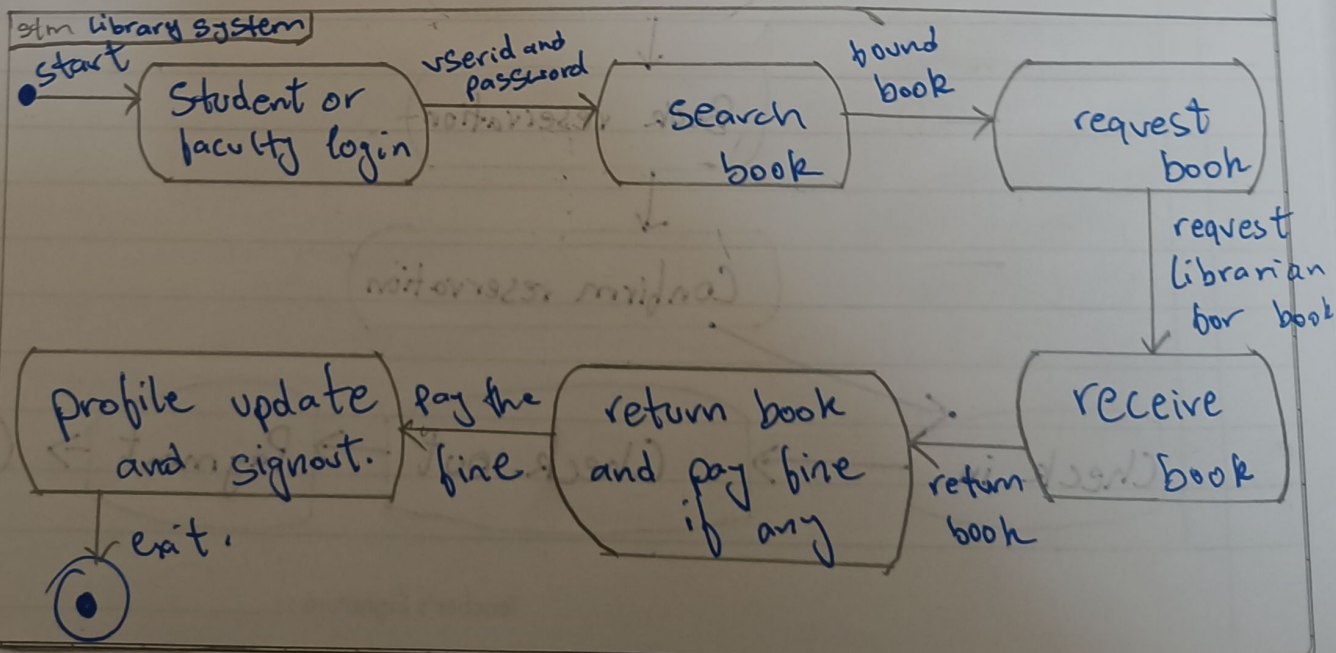
2) Credit card processing system



3) Library Management system



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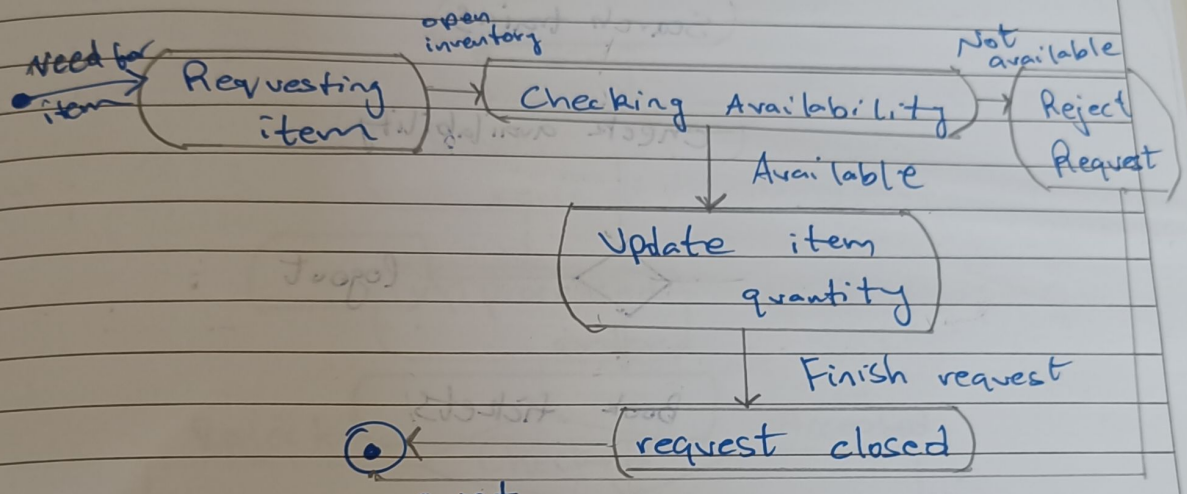
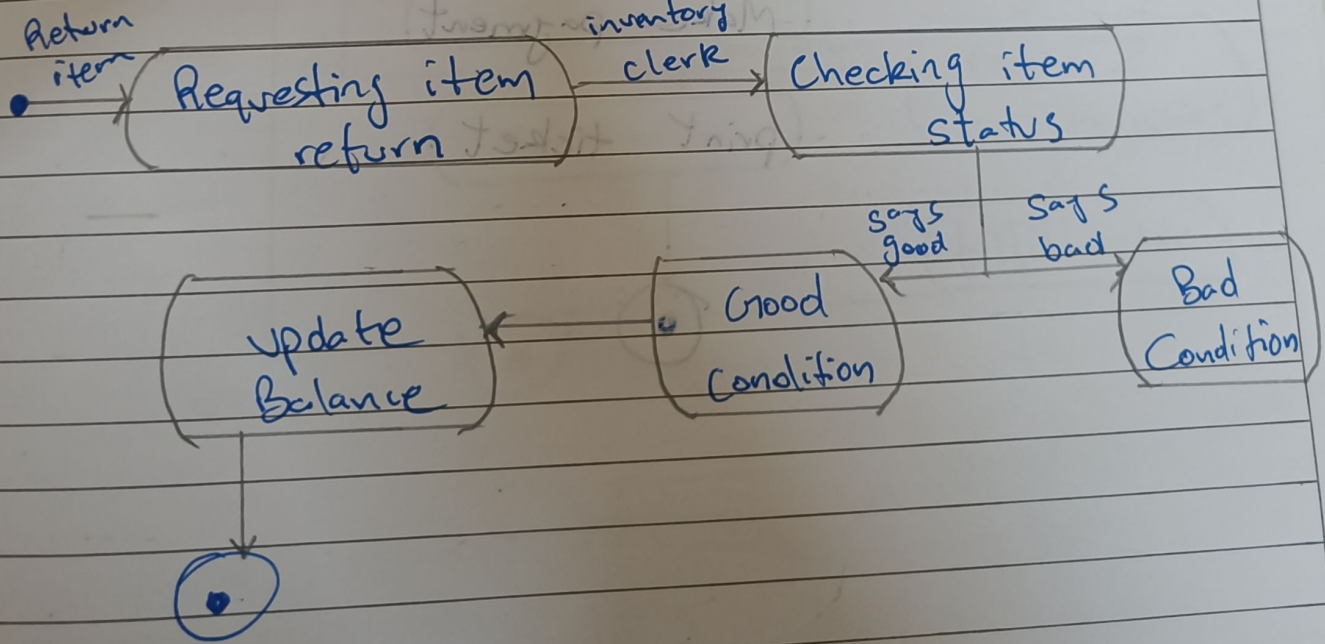
4) Stock Maintenance system





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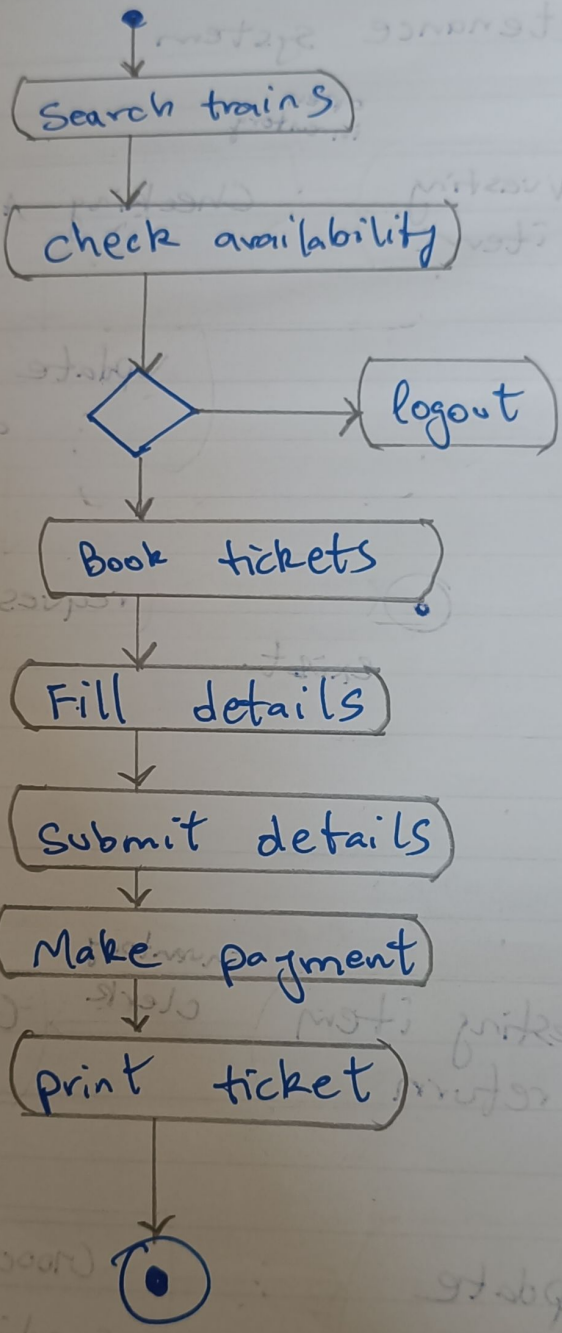
6) Railway Reservation system



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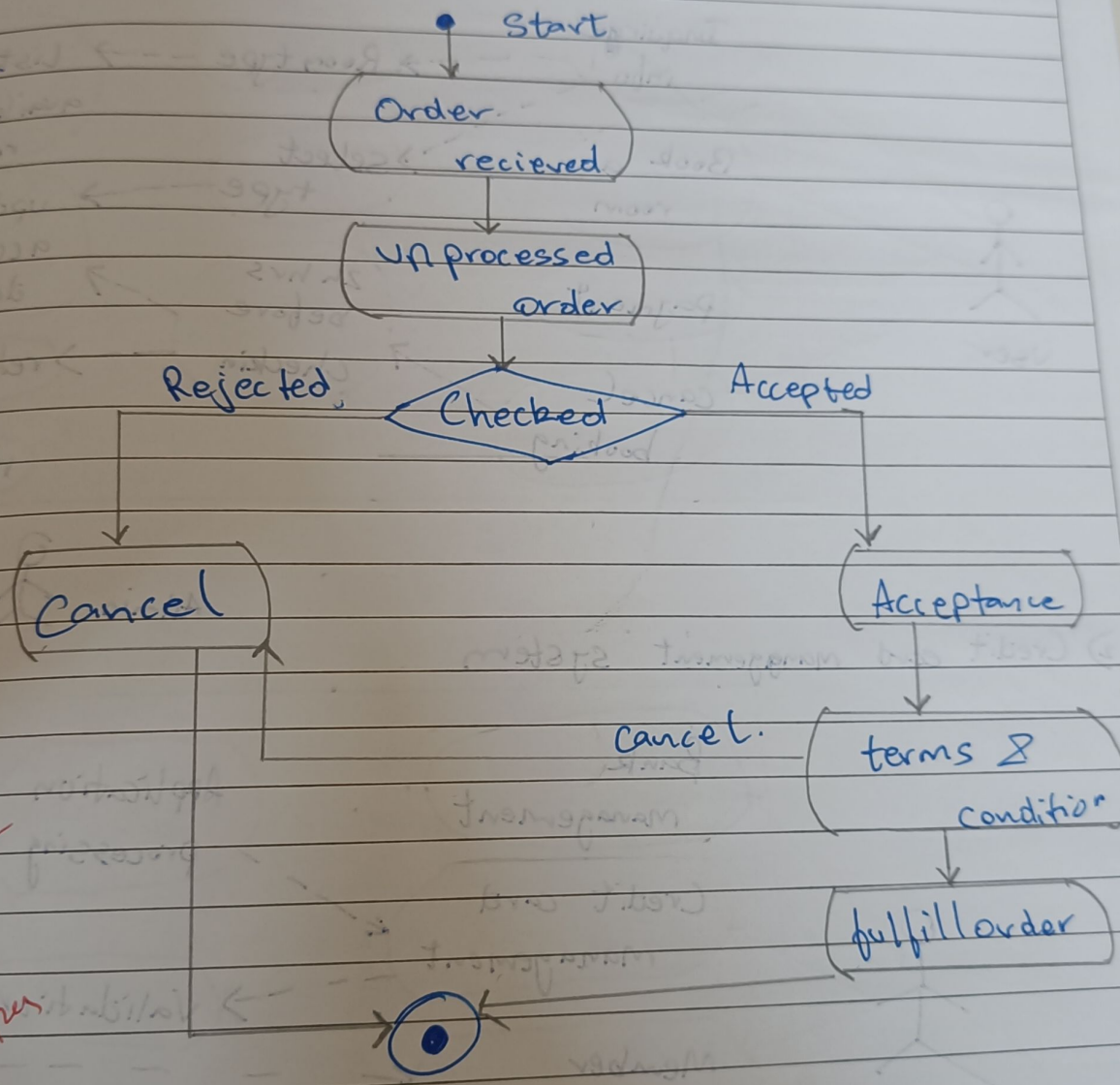
7) Online Shopping order



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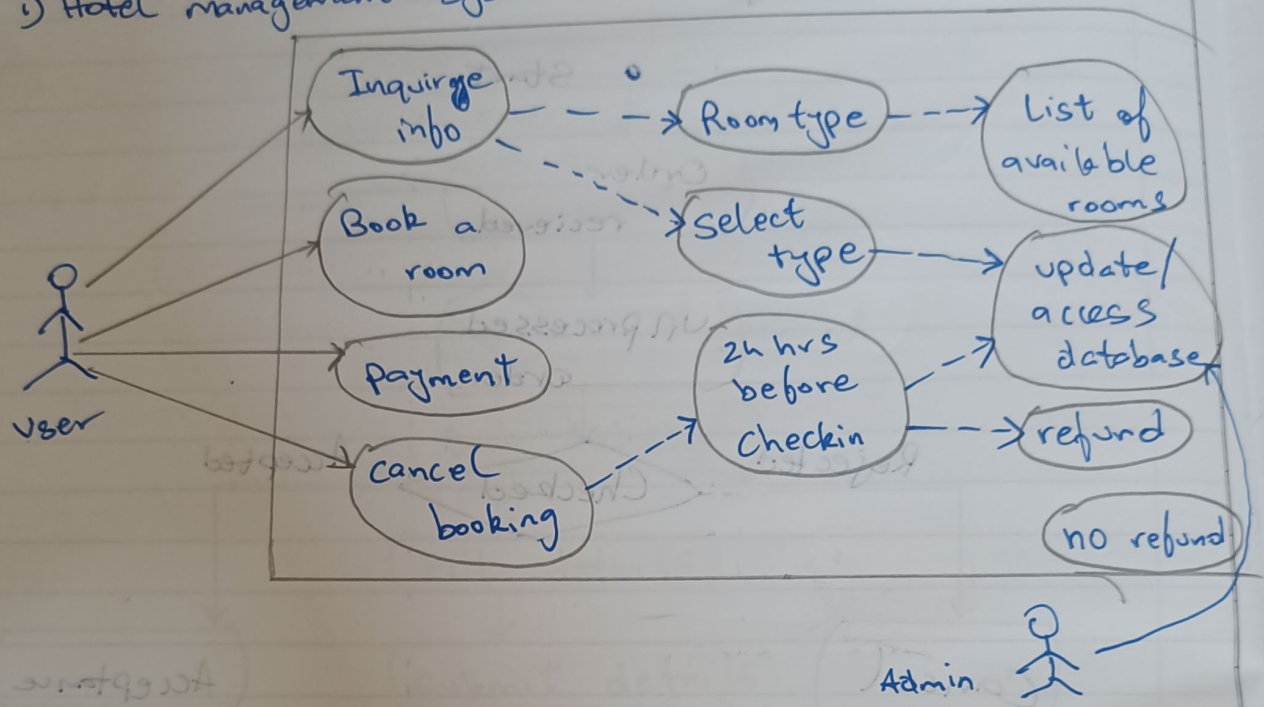
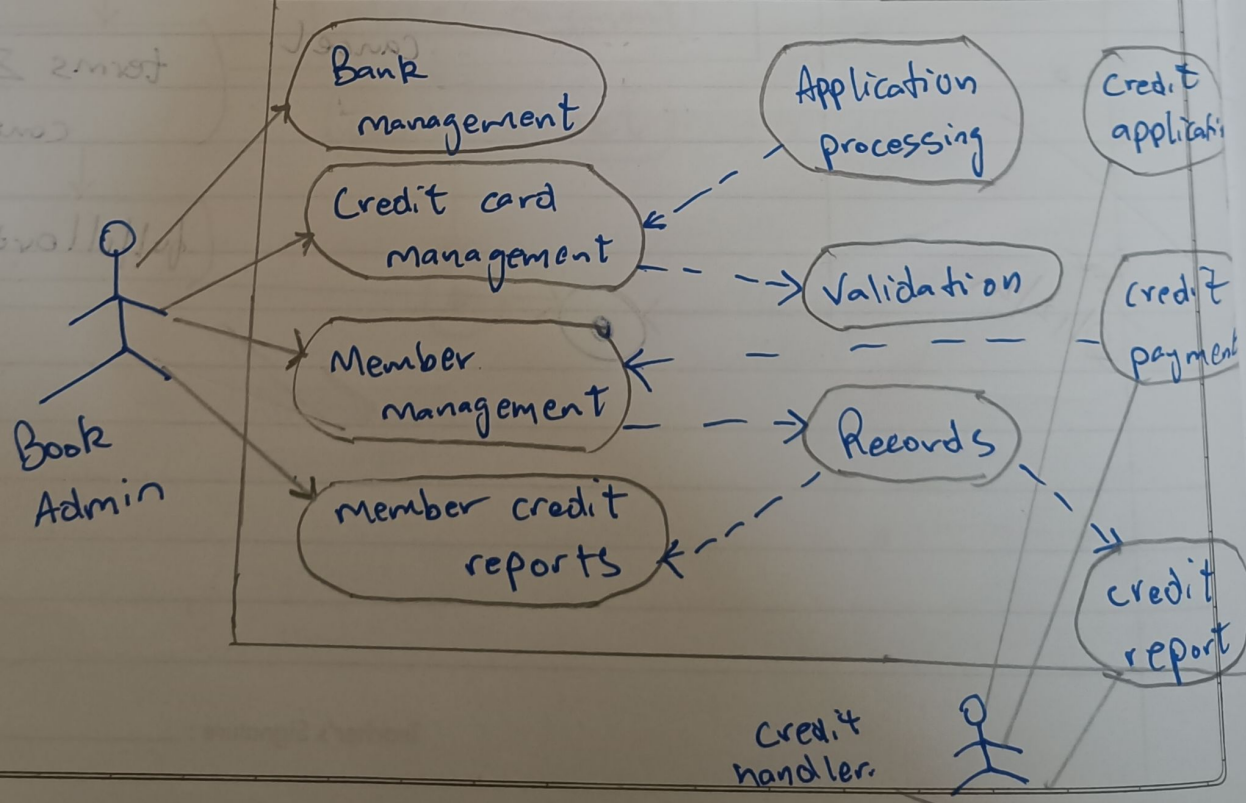
Use case diagrams

1) Hotel management system



2) Credit card manggement system



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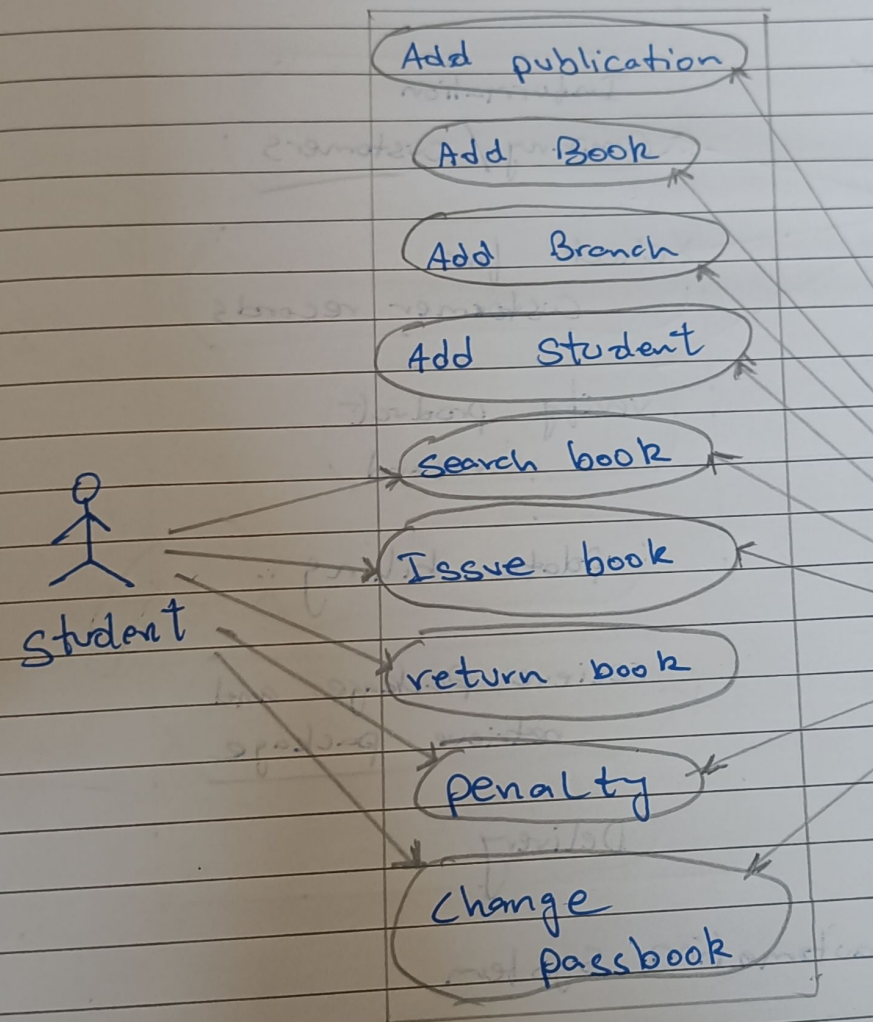
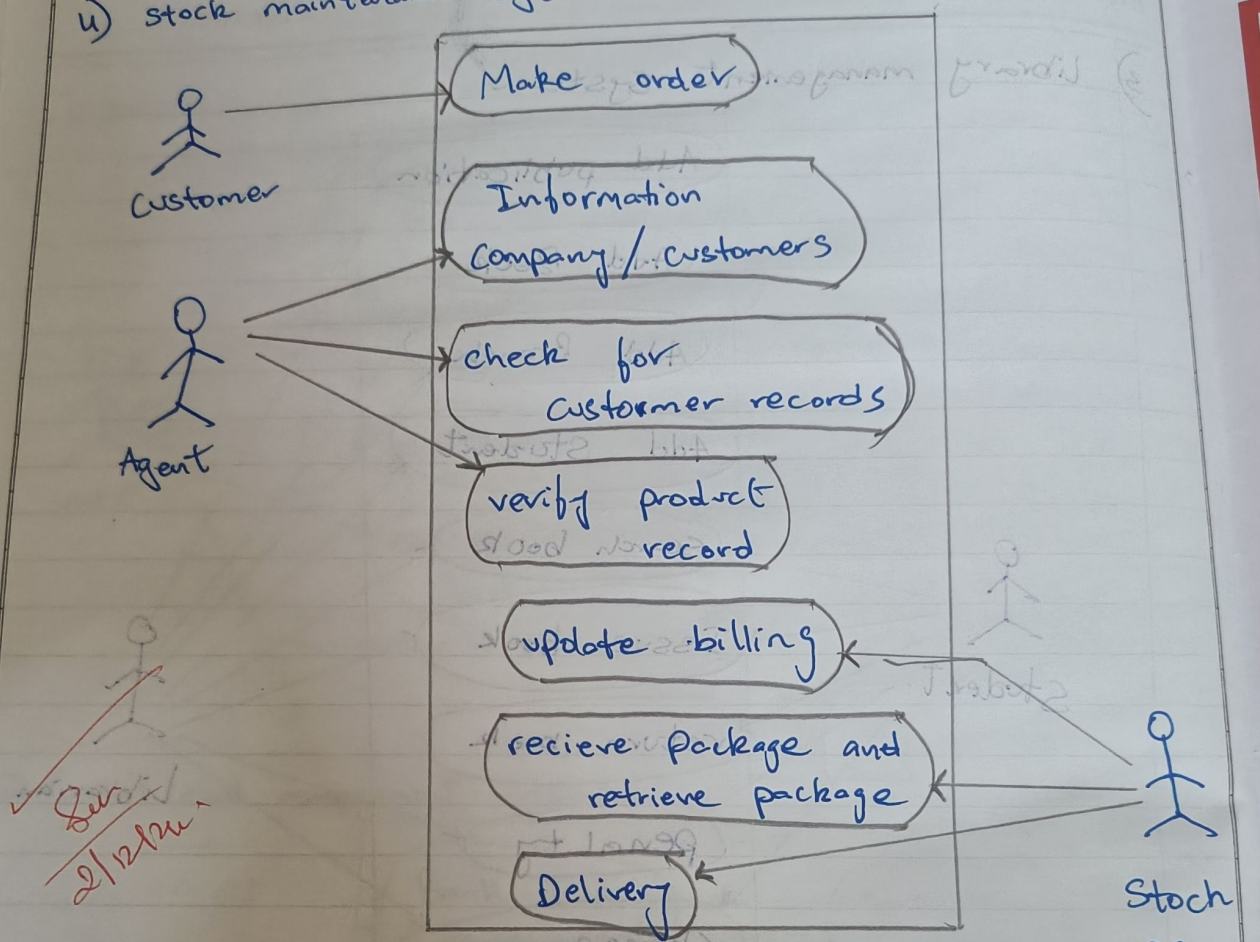
3) Library management system

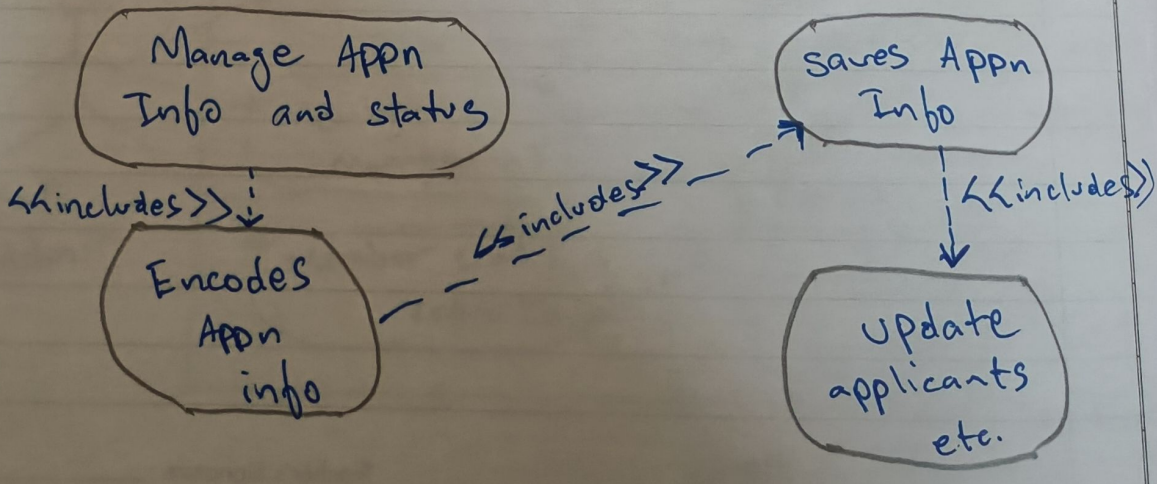


Teacher's Signature : _____

4) stock maintenance system



5) Passport automation system

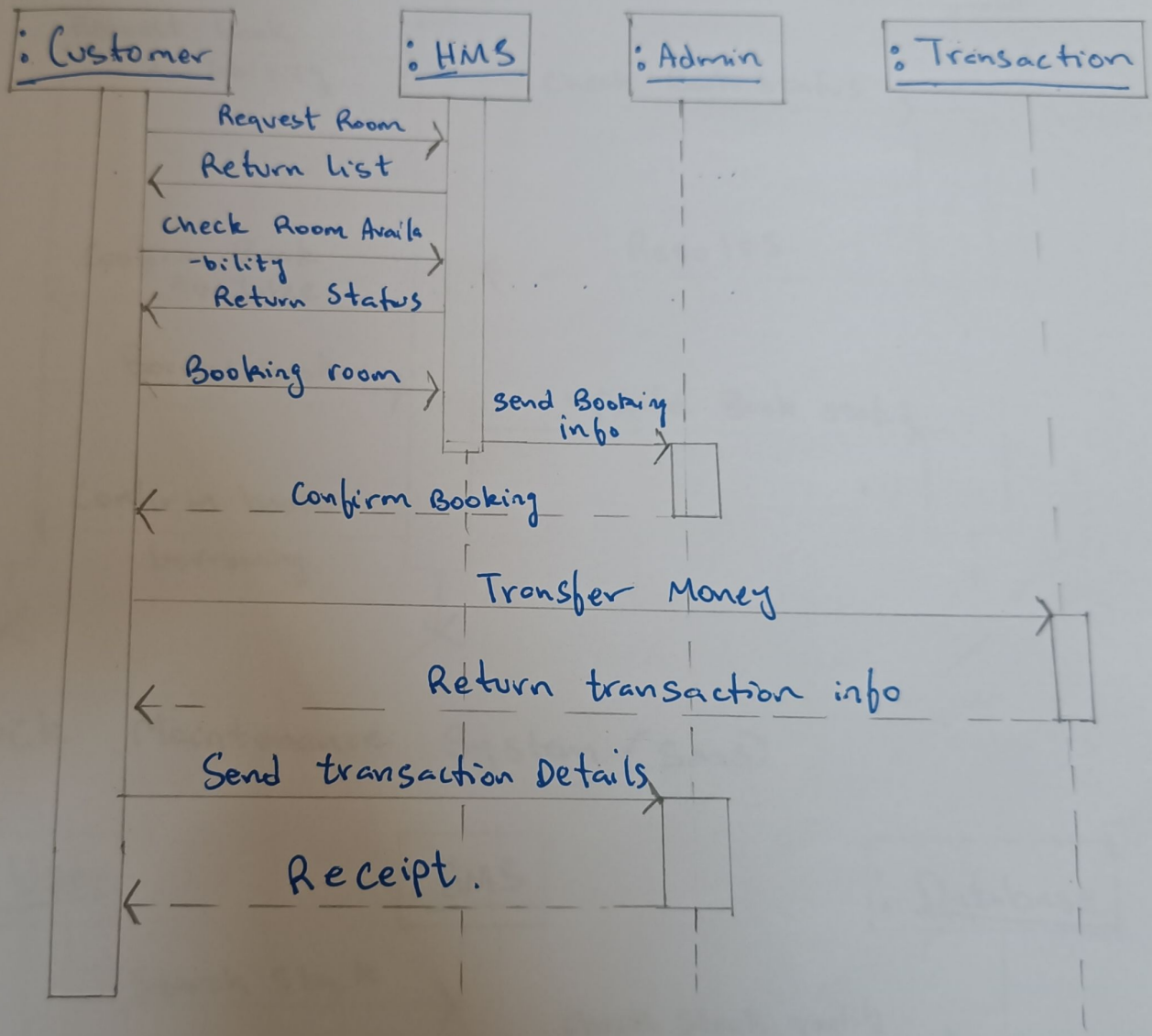


Name :- S Pranav

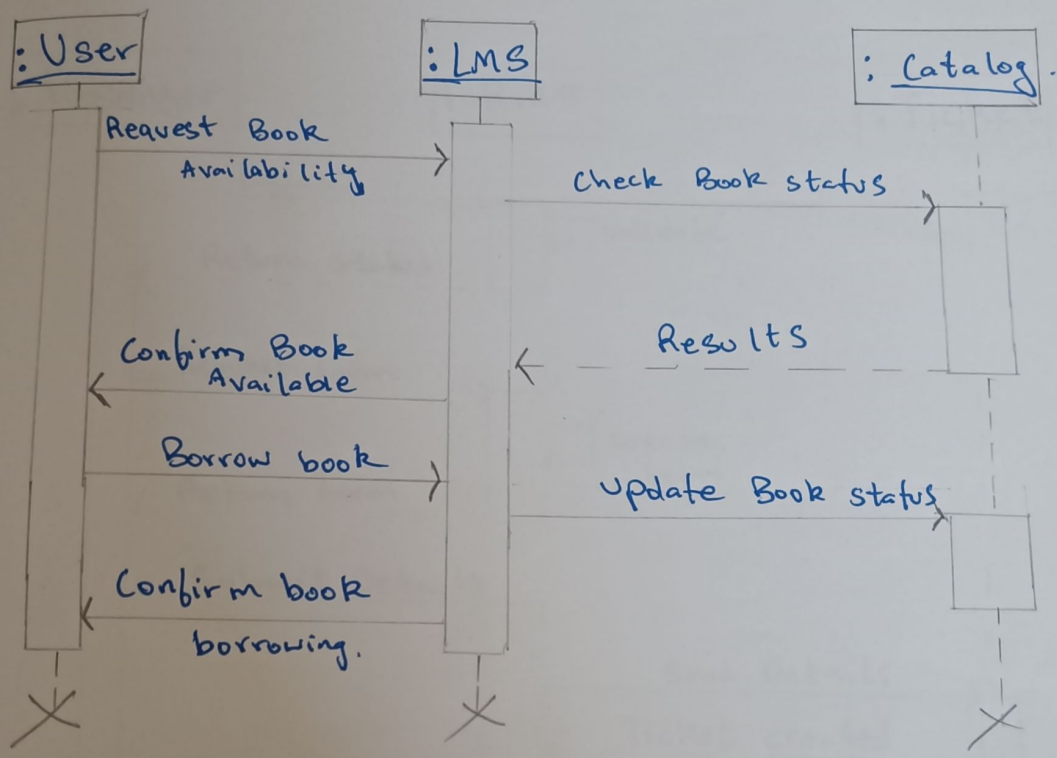
Sl No.	Date	Title	Teacher's Sign
5	16/12/24	Sequence diagrams.	
6	16/12/24	Activity diagrams.	

Sequance Diagrams

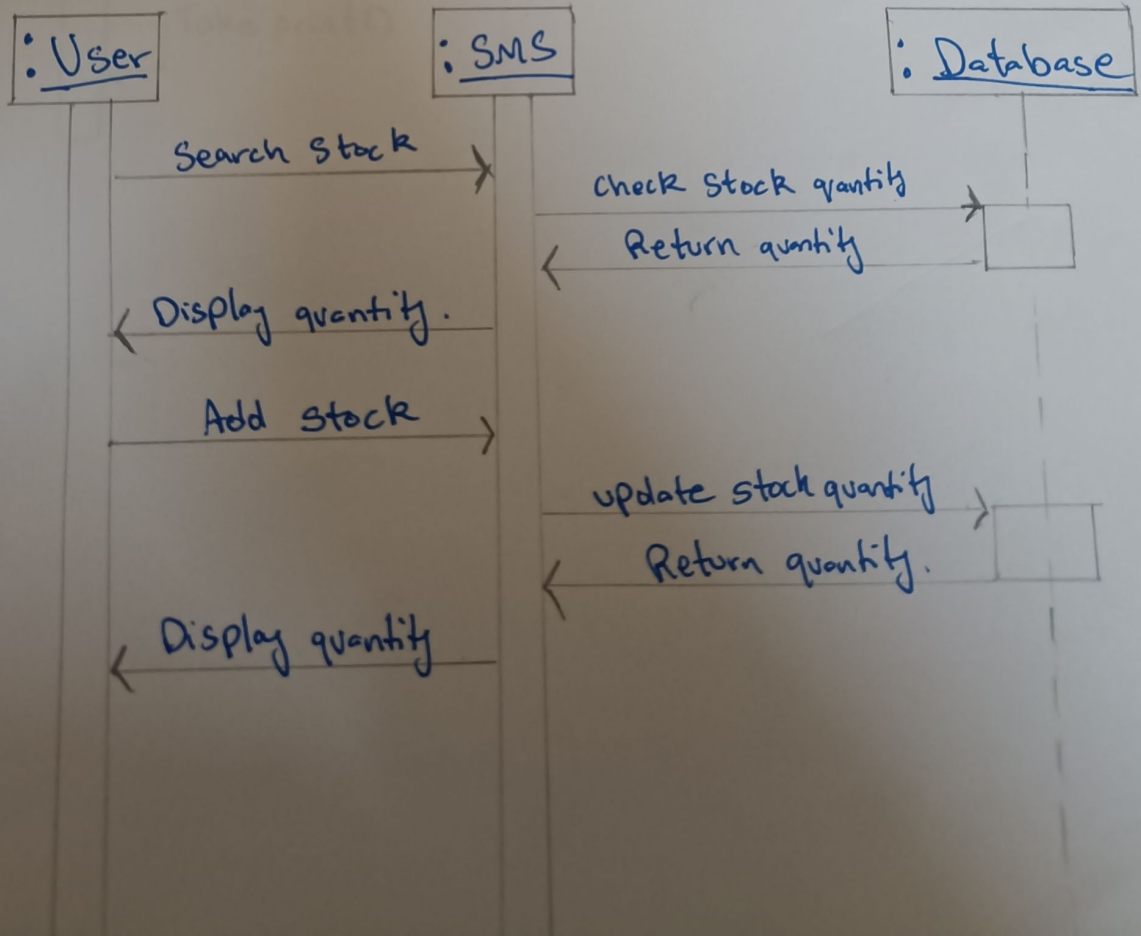
1) Hotel Management syst



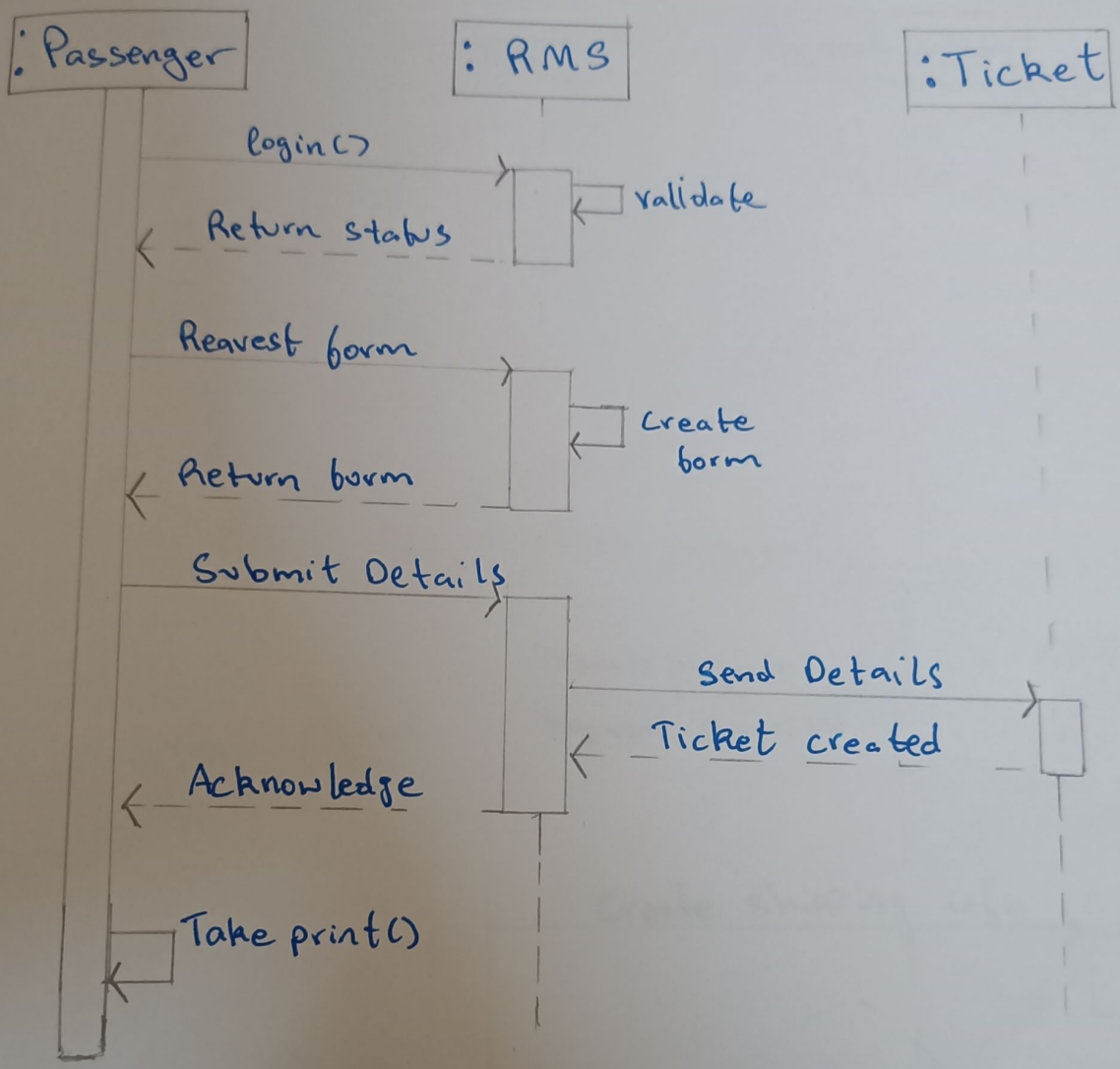
2) Library Management System (LMS



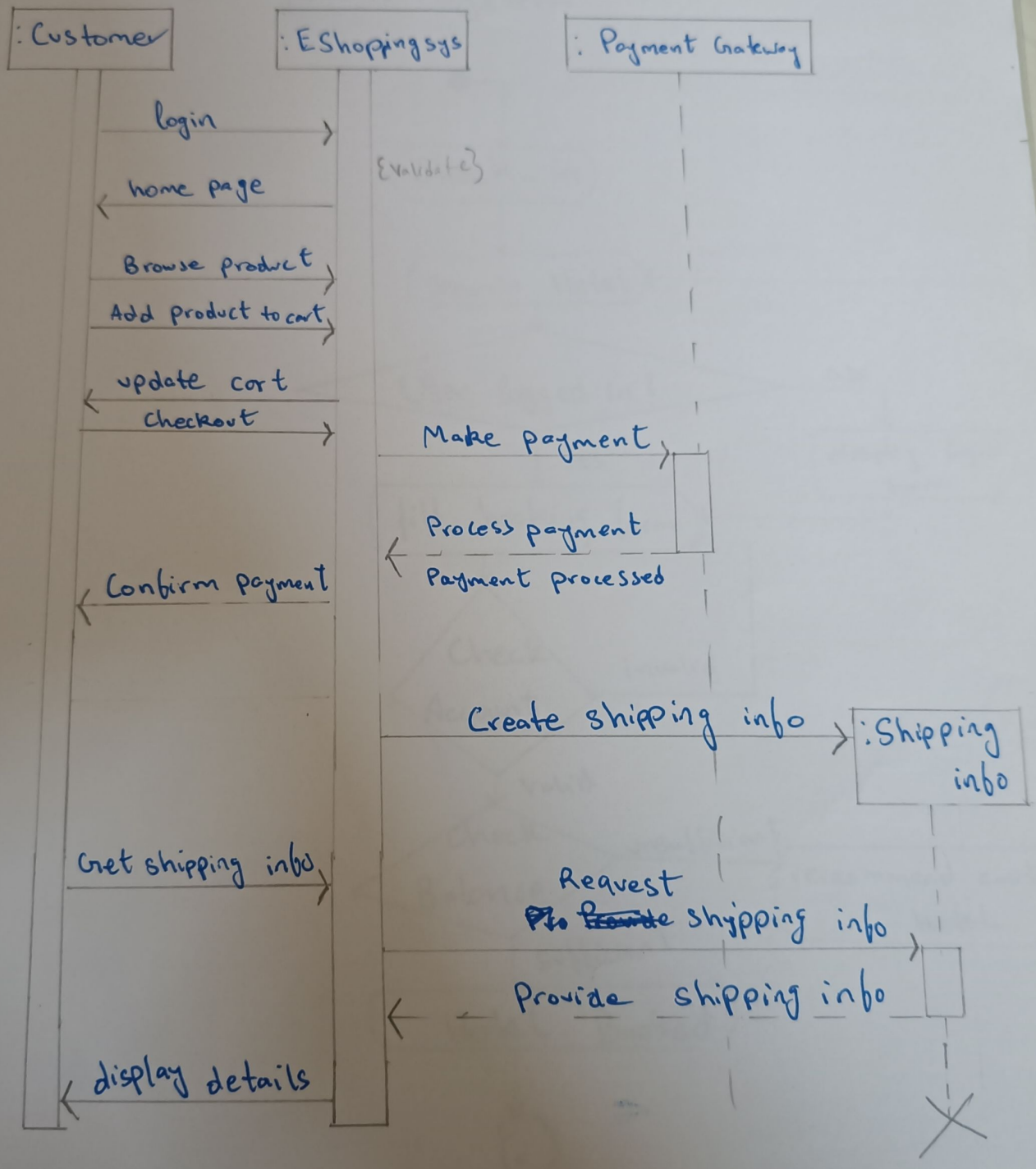
3) Stock Maintenance System (SMS)



4) Railway Reservation System

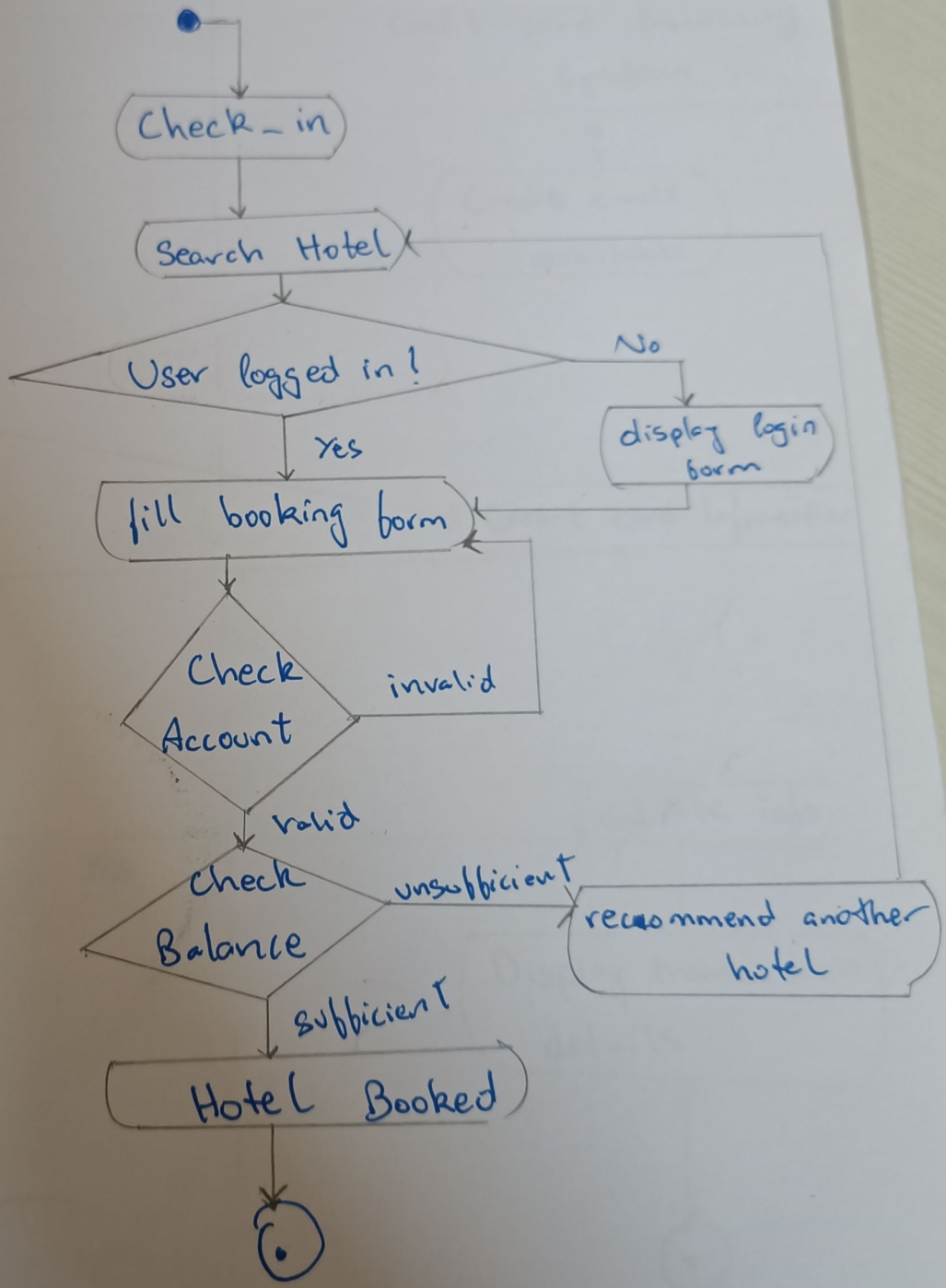


5) Online Shopping System

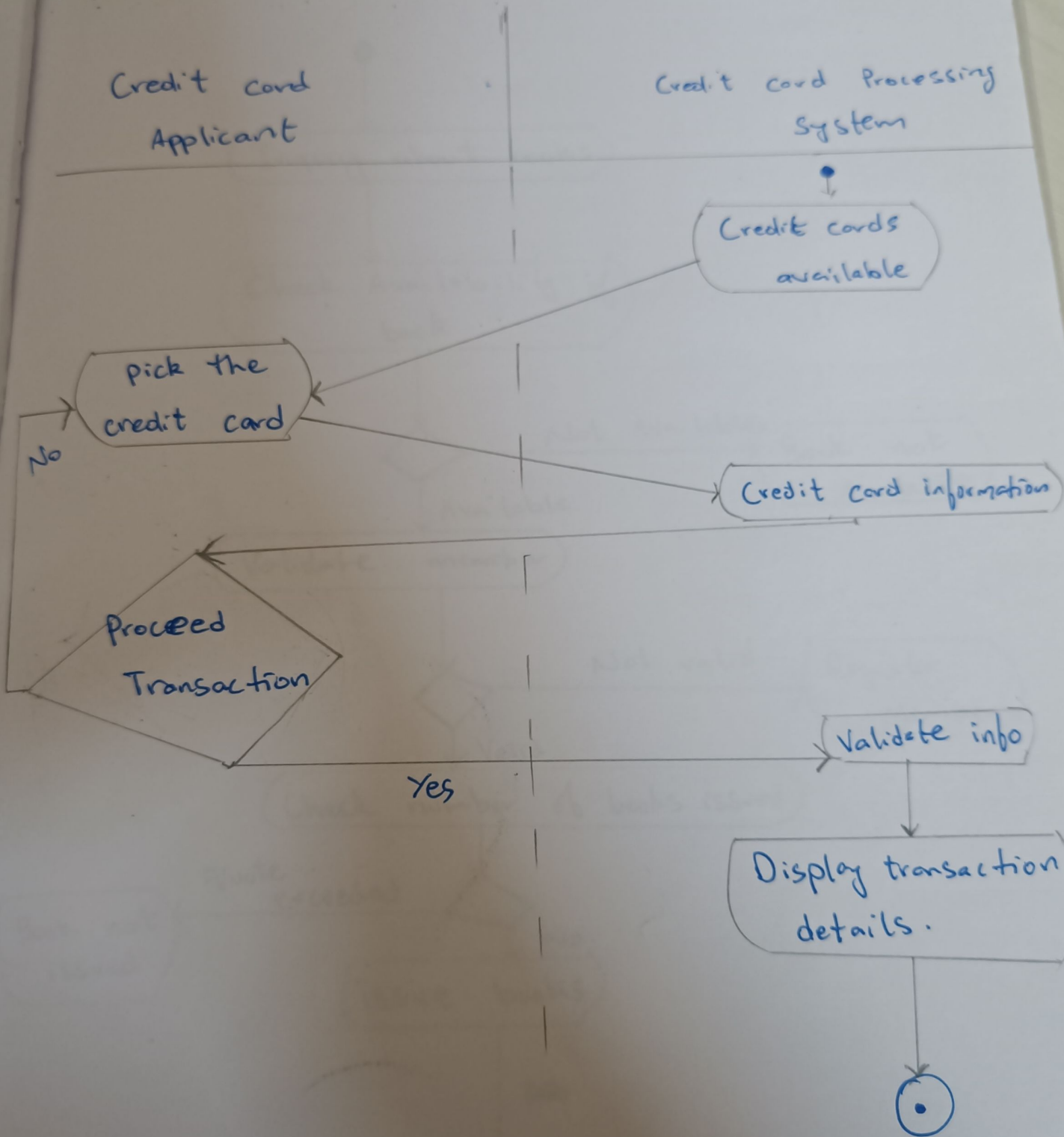


Activity Diagrams

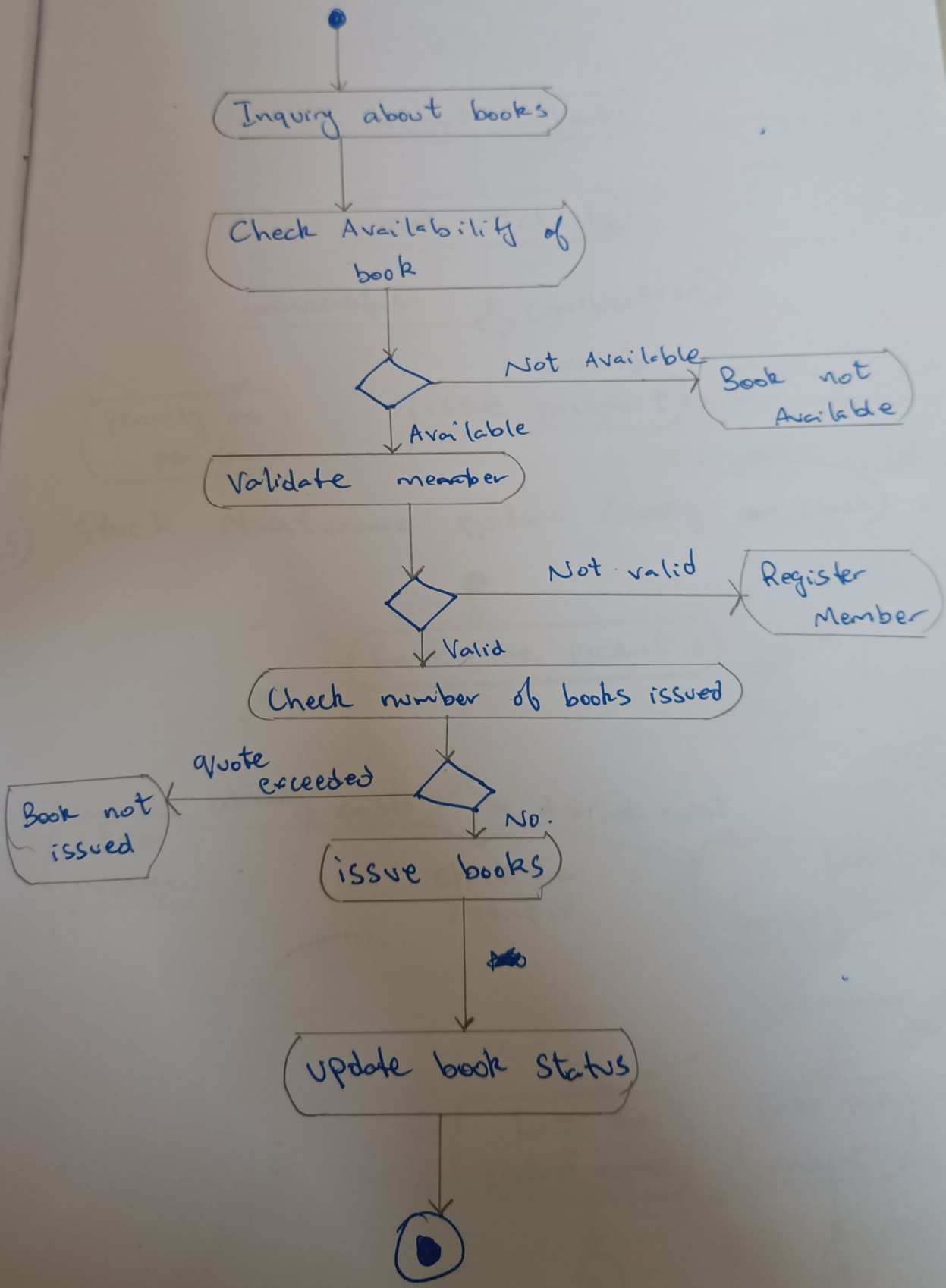
1) Hotel Management System



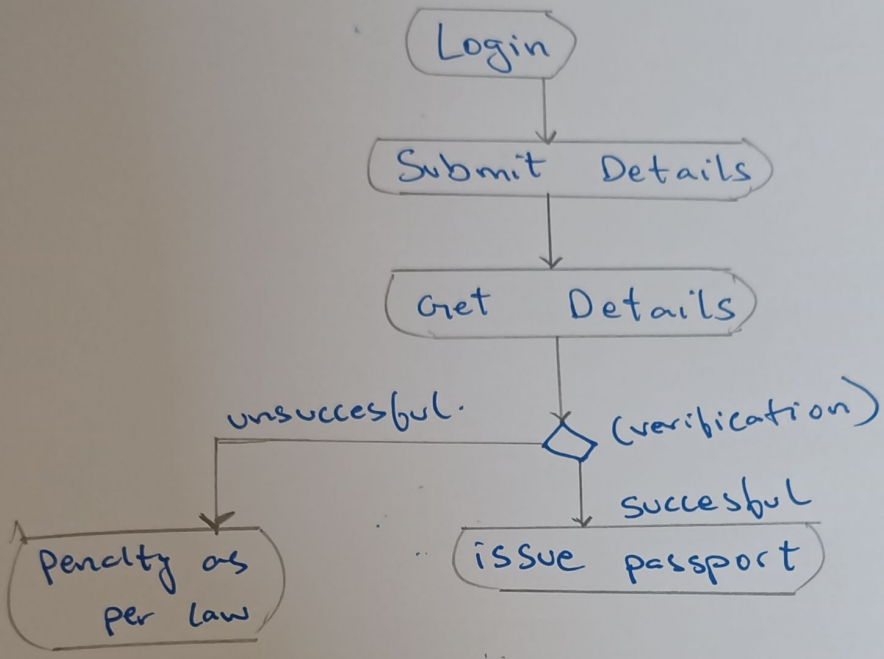
2) Credit card processing system



3) Library Management System



4) Passport Automation System



5) Stock Maintenance system (Adding ~~&~~ stock)