Credit card processing system

1) Introduction

1.1) Purpose of document - P

The purpose of document is to outline the functional and non-functional requirements for a credit card processing system. The goal is to provide clarity on this scope, features and design of system.

1.2) Scope of document-

The system will allow merchants to process credit card payments securely. It will handle authorization, capture and settlement of payments.

1.3) Overview

The credit card processing system will enable merchants to process payments using credit cards through securely transmit data to the financial institution. for settlement.

2) General Description

The system will provide merchants with the ability to process payments through variety of credit card networks. The system will cater to online and in-store transactions.

3) Functional requirements

- Card authorization - validate the card details and confirm available credit.
- payment capture - Record and authorize payments initiated by the merchant
- Refund processing - Allow partial or full refunds.

4) Interface requirement

The system must interface with the merchants pos system and e-commerce platform. It should communicate with external API's for card authorization and processing

5) performance requirements

All transaction logs should be stored securely for atleast 5 years.
Payment processing should be completed within 3 seconds.

6) Design constraints

The system must comply with PCI-DSS standards for secure card processing. Hardware requirements include servers with high-performance configuration to handle peak loads.

7) NFA

Security - Encryption and secure connections for all transactions and mandatory

Reliability - The system should have an uptime of 99.9%

Data Integrity - Transactions should be logged and verified to ensure no data loss.

8) preliminary schedule and budget

Development time - 8 months
Estimated cost - $120,000 dollars

Milestone - Phase 1 (3 months) - system design
Phase 2 (4 months) - core development
Phase 3 (1 month) - Testing

Hotel Management System

1) Introduction

1.1) Purpose of document

This document defines functional and non-functional requirements of the Hotel management system (HMS). It aims to ensure that the software development team understands the projects objectives and its deliverables helping maintain the quality of the system and meeting customer expectations

1.2) Scope of this document

The HMS will manage hotel operations such as reservations, check-in/check-out processes, billing, room allocation and customer data management. The system will reduce manual effort and ensure efficient management of Hotel systems.

1.3) Overview

The HMS will streamline hotel operations by automating reservations, guest check-ins/check-outs, room services and billing. It will provide user friendly interfaces for hotel staff and customers.

2) General Description

The HMS will allow hotel staffs to manage reservations, room assignments, and customer data efficiently. It will have features for for guest management, billing and invoices, and reporting.

3) Functional requirement

- Guest check-In / check-out - Allows hotel staffs to register guests, assign rooms and process checkouts.
- Reservation system - Manages room reservation and ensures availability
- Billing - Automatically generates and processes guest bills, including room charges, additional services and taxes.
- User management - Manages hotel staffs credentials and access levels.

4) Interface requirements

The systems must integrate with the hotel's online booking website. It should support data import/exports in CSV formats. It will communicate with external payment gateways for processing transactions.

5) performance requirements

- The error rate should not exceed 0.01% for billing and room assignments.
- The system should process guest check-in/check-out operations within 2 seconds.

6) Design constraints

system should be built using web-based technologies like JavaScript and MySQL.
specific algorithm for room allocation based on guest preferences.

7) Non-functional attributes

- security - user authentication is required for all system actions.
- Reliability - The system needs have an uptime of atleast 99.9%.
- scalability - The system should handle future expansions.

8) Preliminary schedule and budget

- Development time : 6 months
- Estimated cost: $80,000 Lobby, including design, development and testing.
- Milestone - phase1(2 months) - Requirement gathering
  phase 2(3 months) - Development
  phase 3(1 months) - Testing

Library Management System

Introduction

The document outlines the requirements for a library management system aimed at automating library operations to enhance efficiency in cataloging, borrowing and managing resources. The LMS will serve librarians and patrons to manage books, user accounts and borrowing process.

General Description

User Roles: Librarians, patrons, system administrators.

Key features - Book cataloging and management, user account management, lending and return tracking, reporting and analytics.

Functional requirements

- User Management - Register, update and delete user accounts.
  Authenticate users via username and password.
- Catalog management - Add, update, delete book records.
  Search for books by various criteria.
- Lending system - check out and return books.
  send notifications for due dates and overdue books.

Interface Requirements

UI - web based interface for librarians and patrons.
Responsive design for accessibility on various devices.

API - Restful API for integration with external systems.

Performance Requirements

The system should support up to 500 concurrent users without performance degradation.

Response time for searching a book should be under 2 seconds.

Design constraints

Must be developed using web based architecture.
Database must comply with standards SQL database.

Non Functional Attributes

usability - UI friendly interface with intuitive navigation.
security - Implement SSL encryption mechanism
scalability - Ability to handle increased load as library grows.

Preliminary schedule constraints

Initial development: 6 months
Testing phase: 2 months
Deployment: 3 months
cost estimation - 1 lakh

Stock Maintenance System

Introduction

The document describes the requirements for SMS to manage inventory levels and track stock movements efficiently.

General Description

Warehouse Managers, stock auditors, staff

Key features - Inventory tracking and management
stock movements recording
Reporting and analytic.

Functional requirements

Inventory management - Add, update, and delete stock items.
Track current stock levels, and set alerts for low stock

Stock Movements - Record incoming and outgoing stock transactions.

Functional requirements

Inventory Management - Add, update and delete stock items
Track current stock levels and set alerts for low stock.

Stock movement - Record incoming and outgoing stock transactions.
Manage returns and record damaged goods.

Interface Requirements

UI - web-based dashboard for easy access to stock information

API - RESTful API for integration with ERP systems

Performance Requirements

The system should handle up to 1000 stock transactions per hour.
Search for stock items should return results in under 2 seconds.

Design constraints

The system must be compatible with existing inventory management system.
- Must use a relational database for data storage.

Non Functional Attributes

- Usability - Intuitive interface with minimal training required
Reliability - 99.9% uptime expected for the system.

Preliminary schedule ~~reconstraints~~

Development phase - 5 months
User acceptance testing - 1 month
Go-live target - 6 months from project start.
Cost estimation - 3 Lakhs

Passport Authentication system

Introduction - This document provides the requirements for a PAS designed to automate the passport application and processing workflow.

General Description -

User roles - Applicants, Government officials, Administrators.

Key features - online application submission.
Document upload and verification
status tracking

Functional Requirements

User registration - create and manage user accounts
secure login for applicants and officials.

Application processing - submit passport applications online
upload supporting documents and photos

Reporting - Generate application status reports and processing times

Interface Requirements

UI - Accessible web portals for applicants and officials

API - Integration with national database for identity verification

Performance requirements

The system should support up to 2000 concurrent users during peak application times.

Application processing status updates should occur in real time.

Design constraints

Must comply with government data protection regulations.
should integrate with existing identity verification system.

Non functional Attributes

usability - Easy to navigate interface for users of all technical backgrounds.
security - High level encryption for sensible personal information.

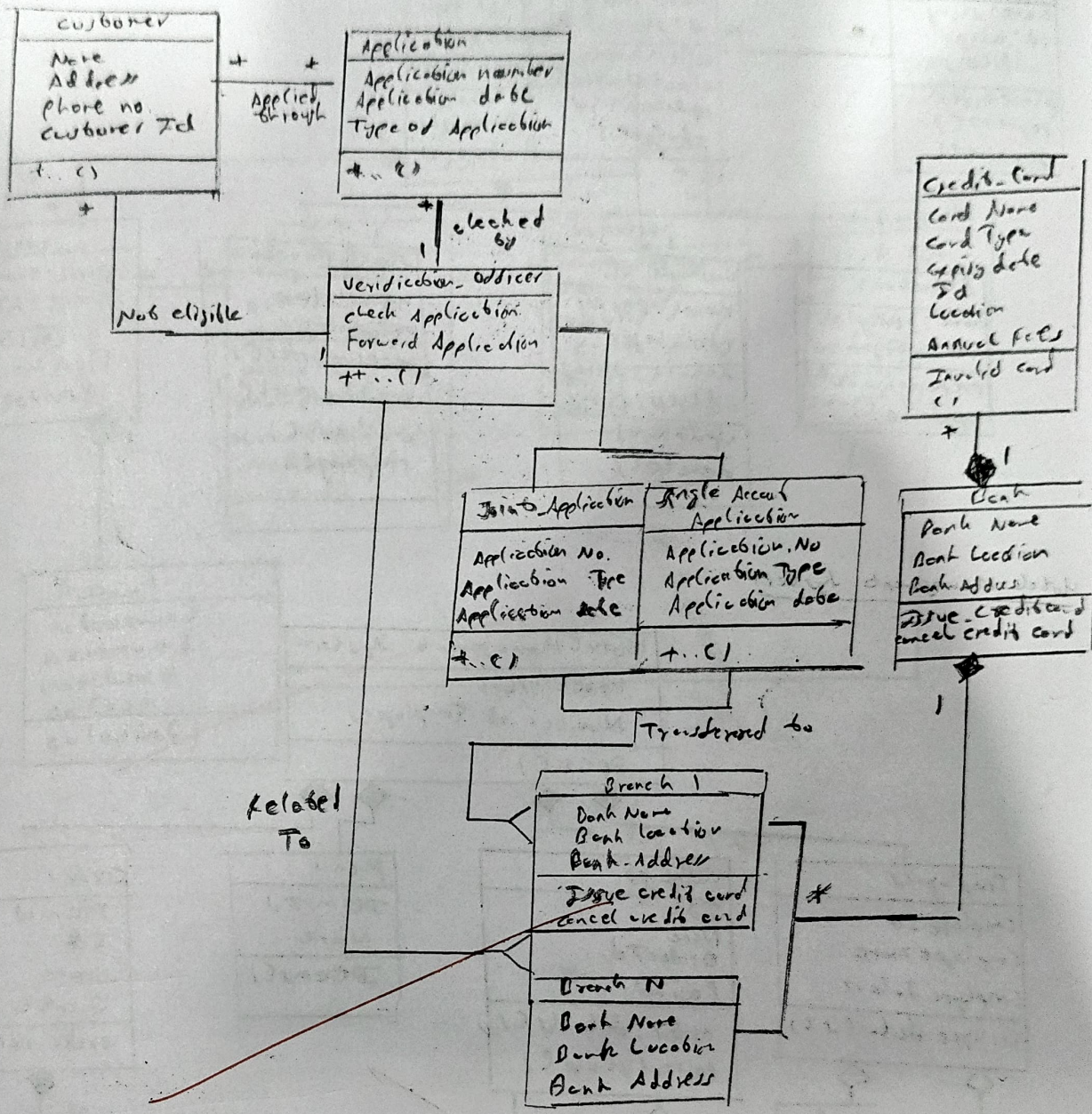
Preliminary schedule Constraints

Development duration - 8 months
Testing and validation - 2 months
Expected deployment - 10 months from projection initiation
cost estimate - 4 lakh

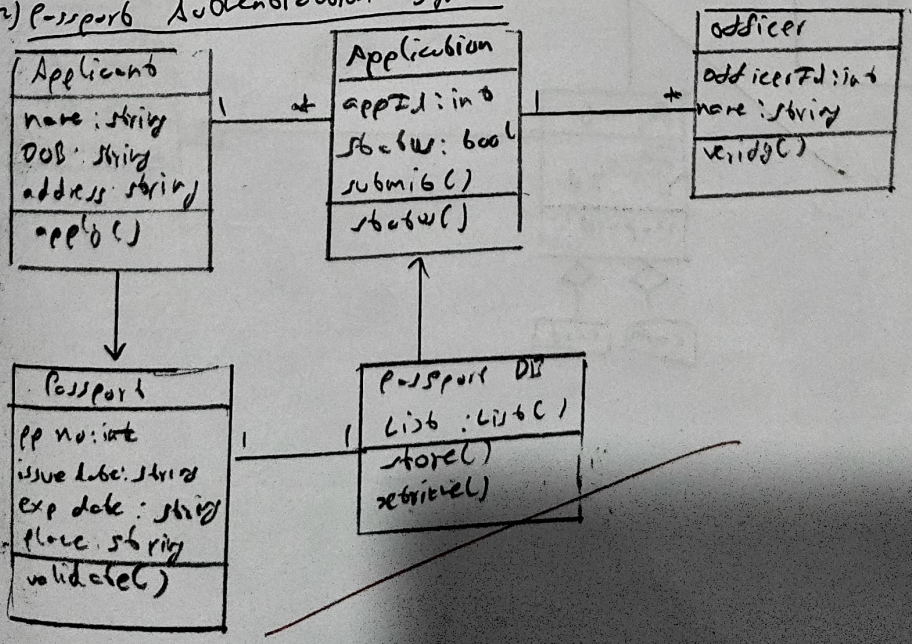
Done 1/10/25

UML Diagram

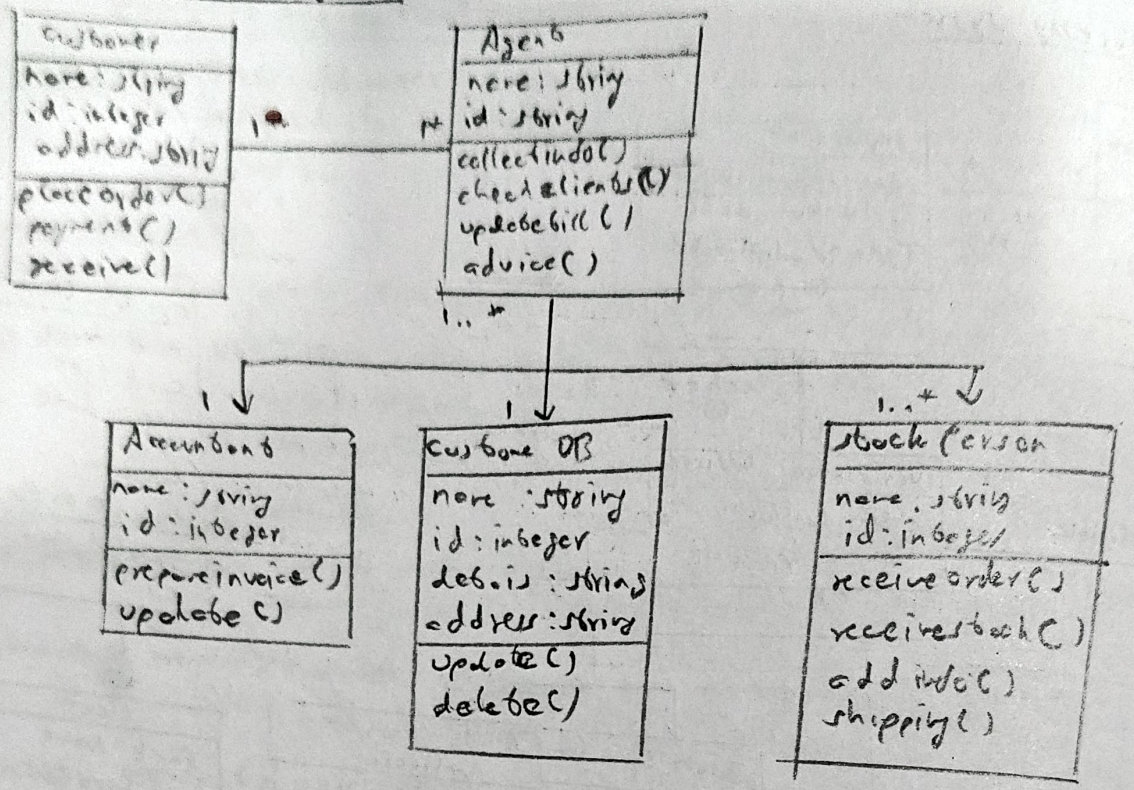
1) credit card processing system



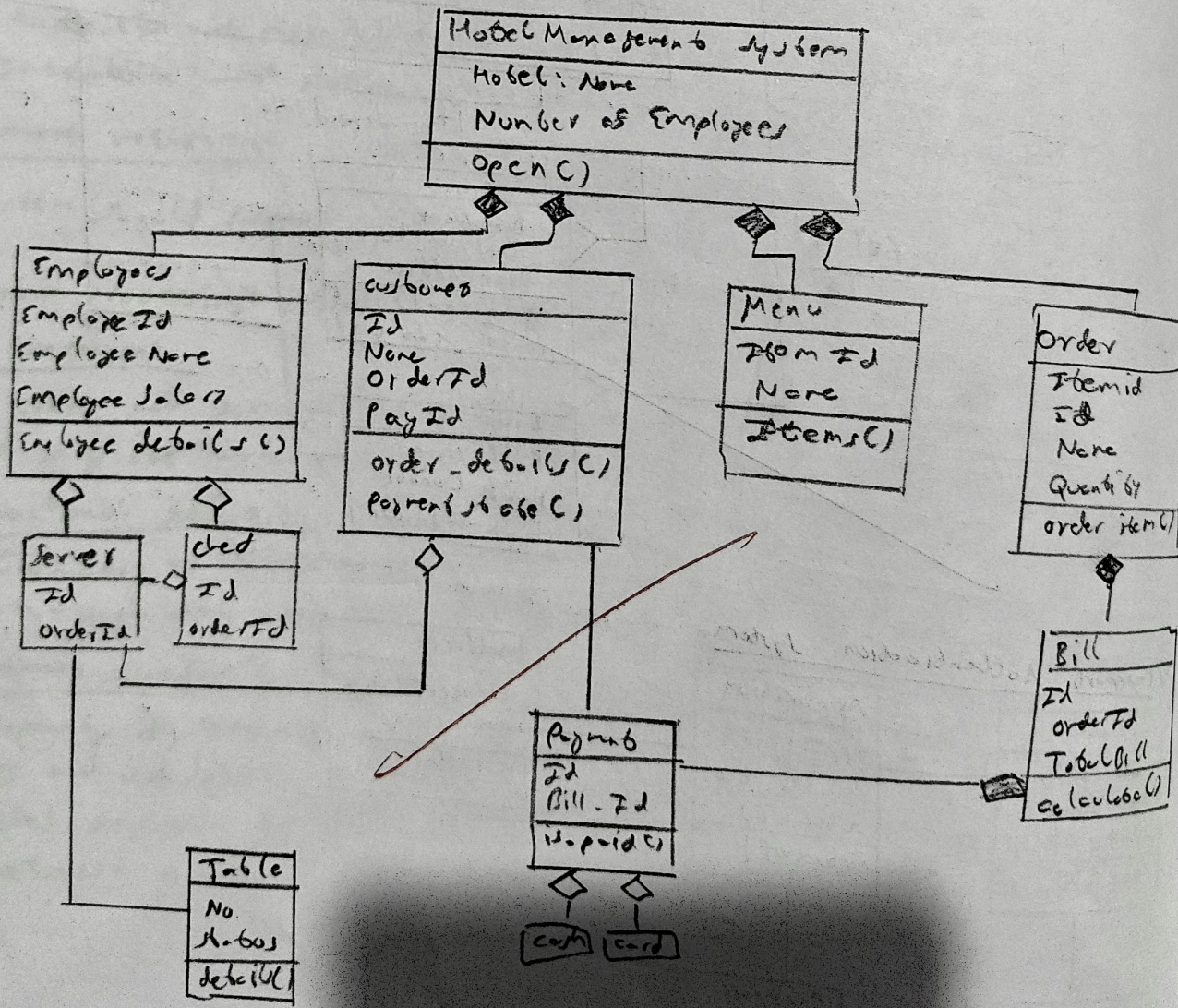
2) Passport Authentication System



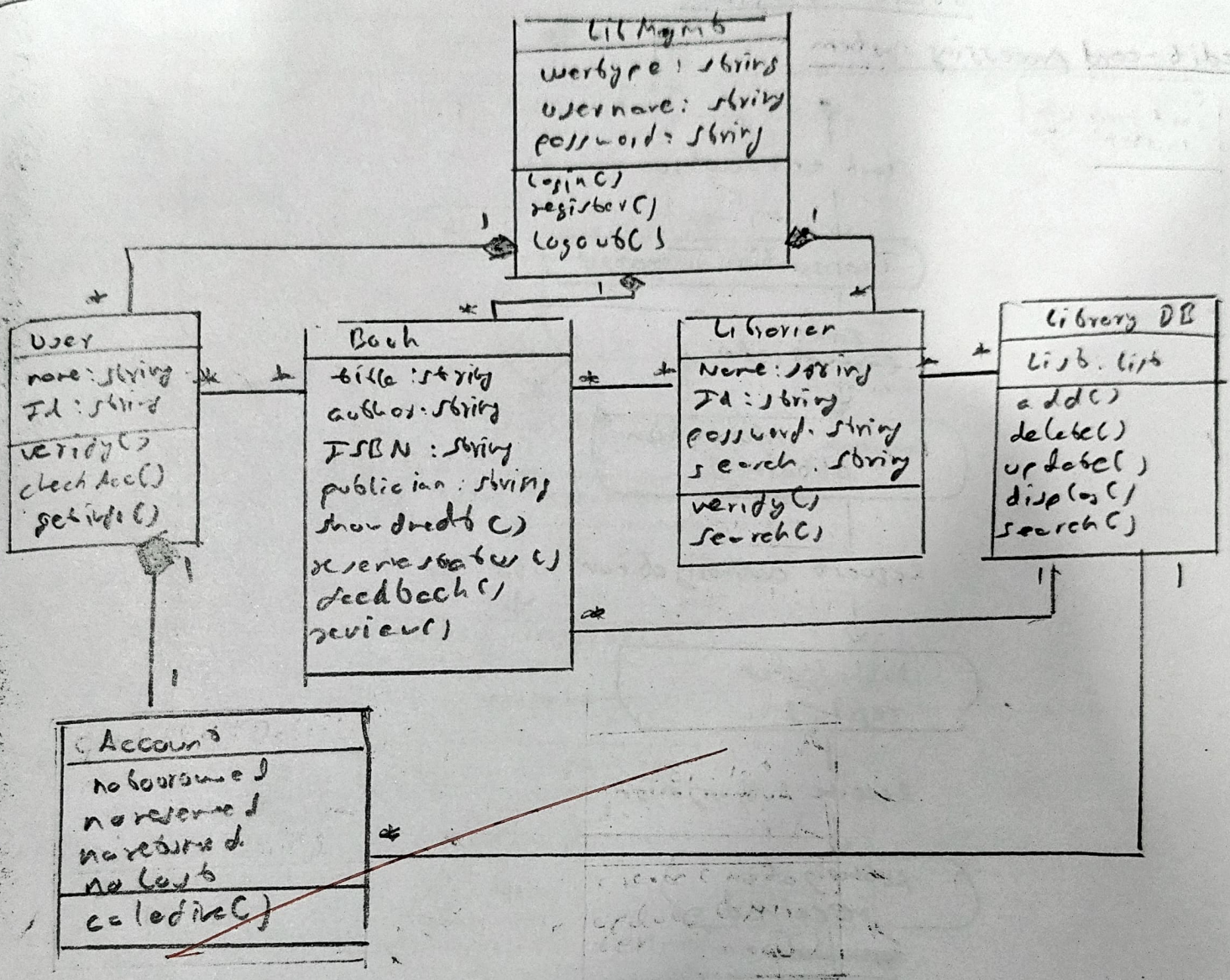
Stock Maintenance System



Hotel Management System



Library Management System



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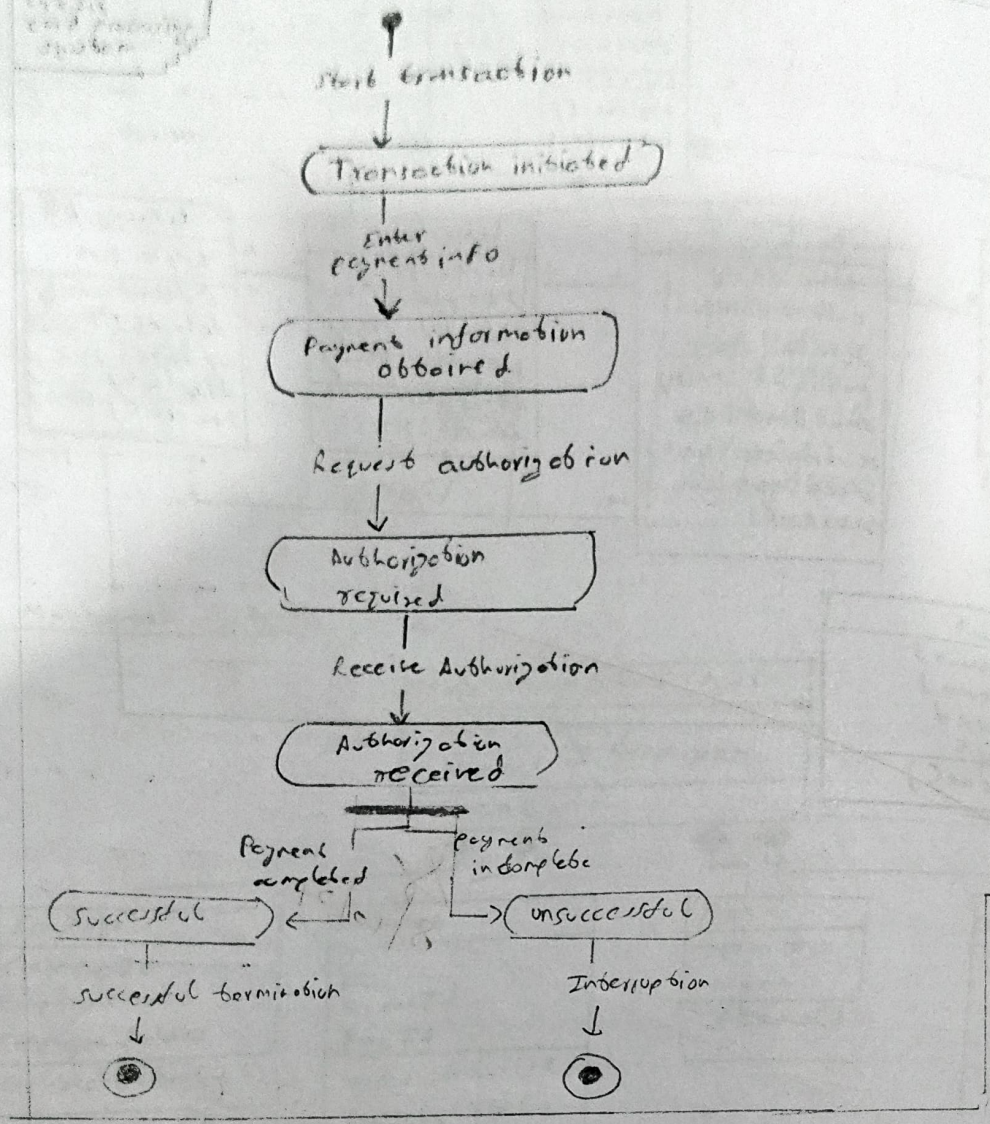
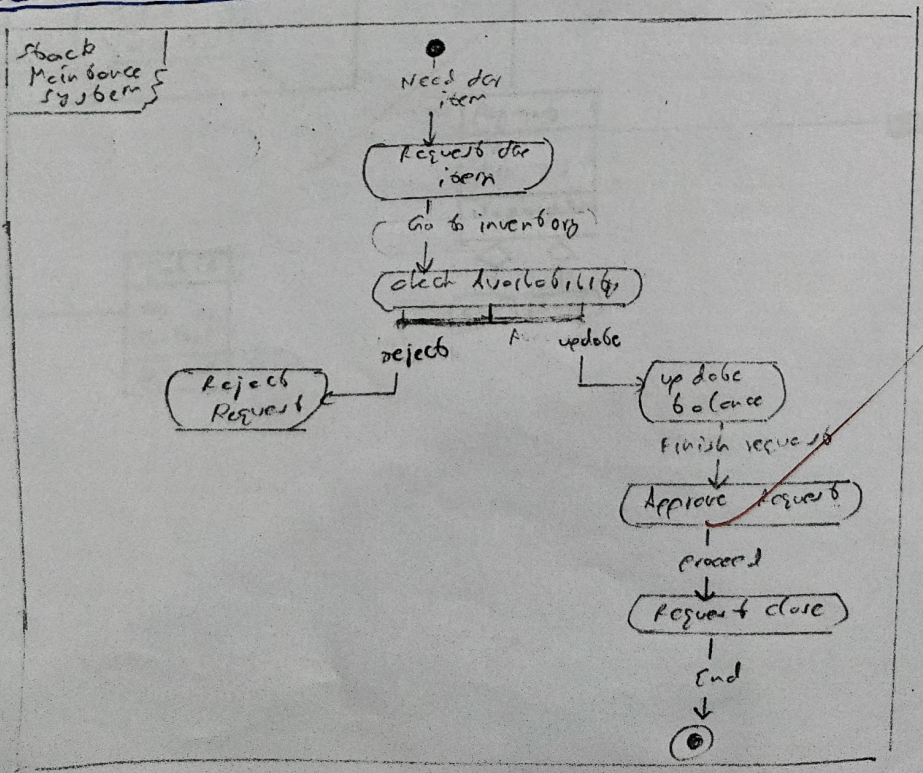
State Diagram

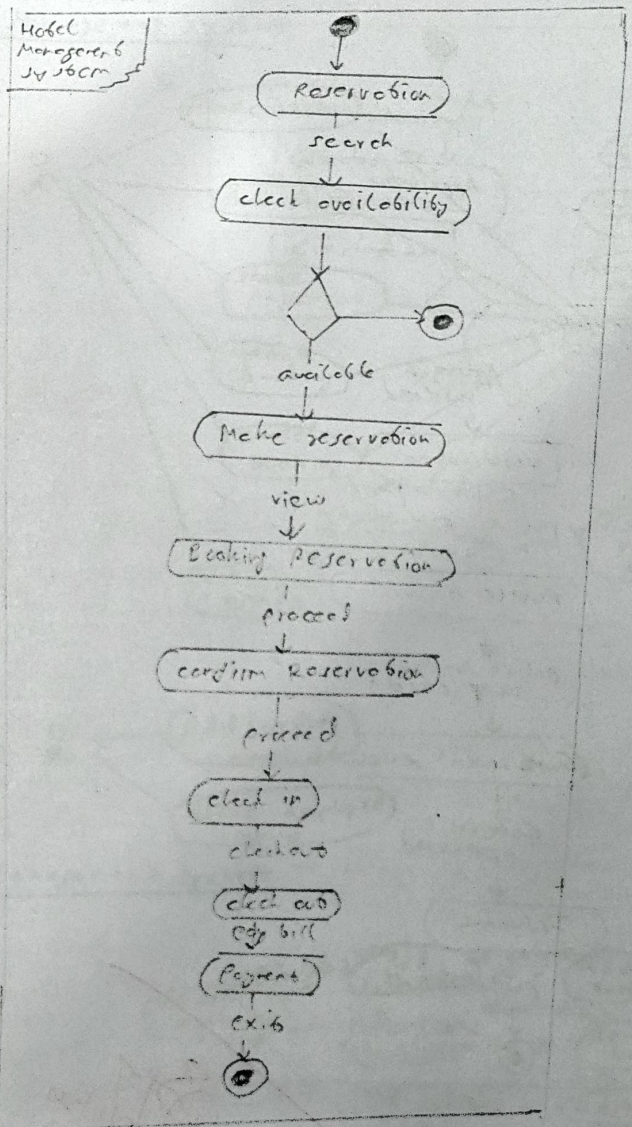
1) credit-card processing system



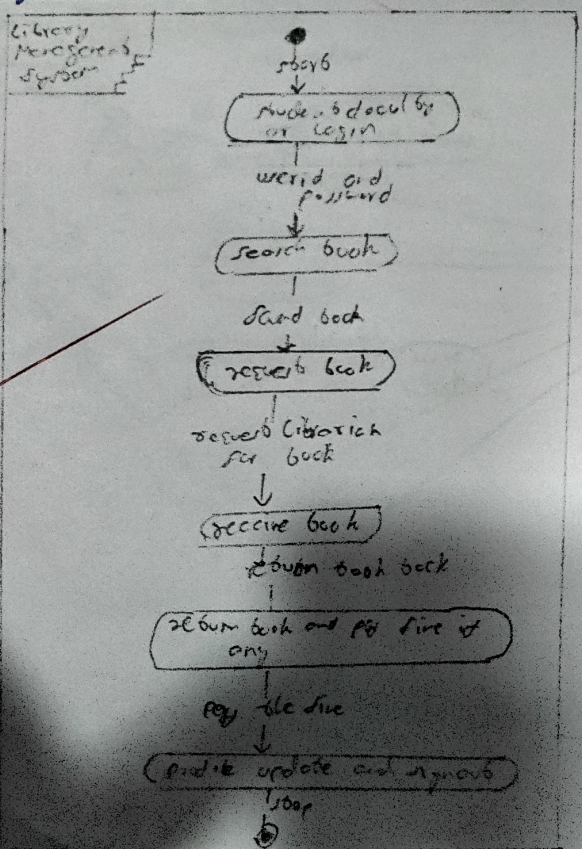
2) ~~Hotel~~ stock maintenance system



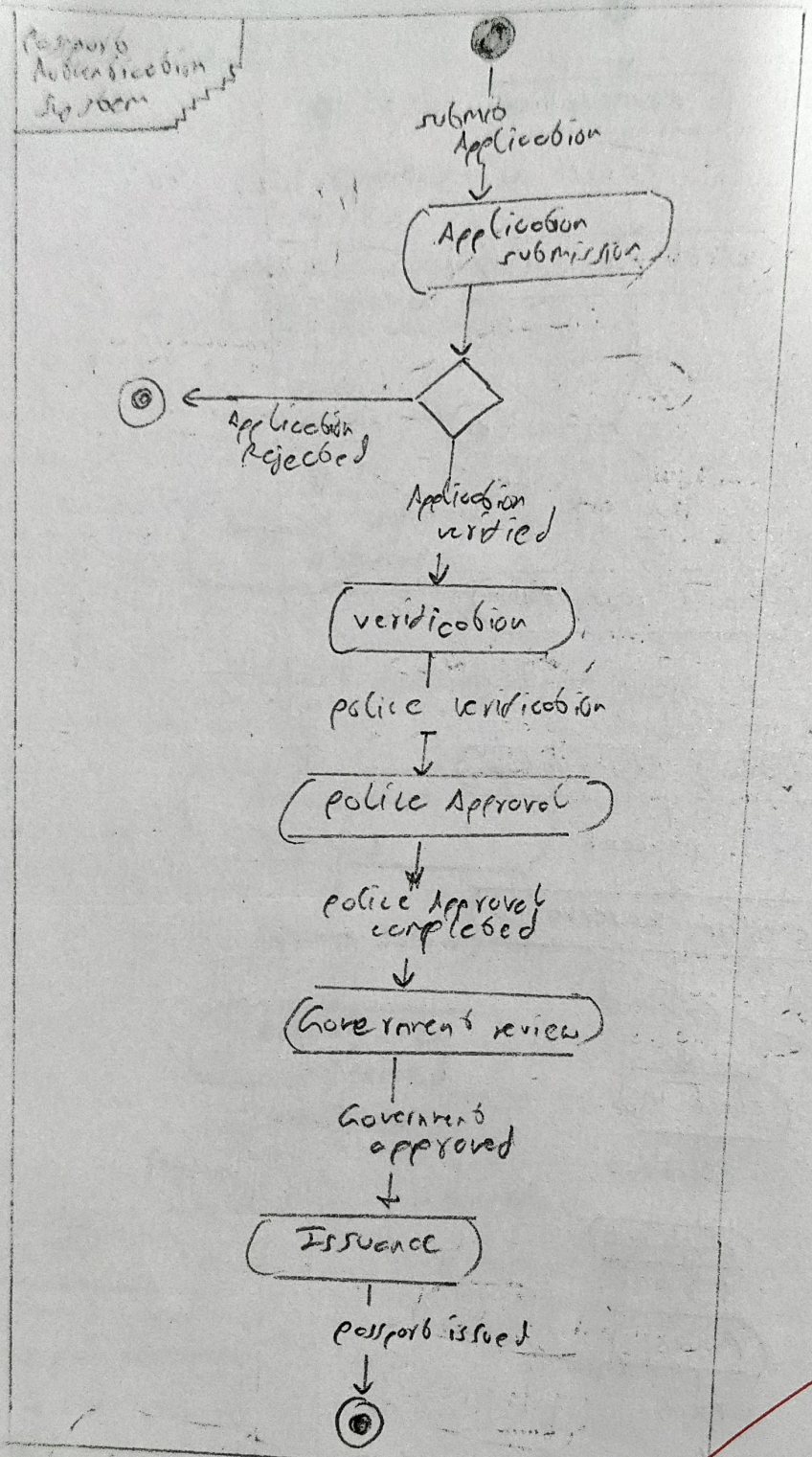
3) Hotel management system



4) Library Management System

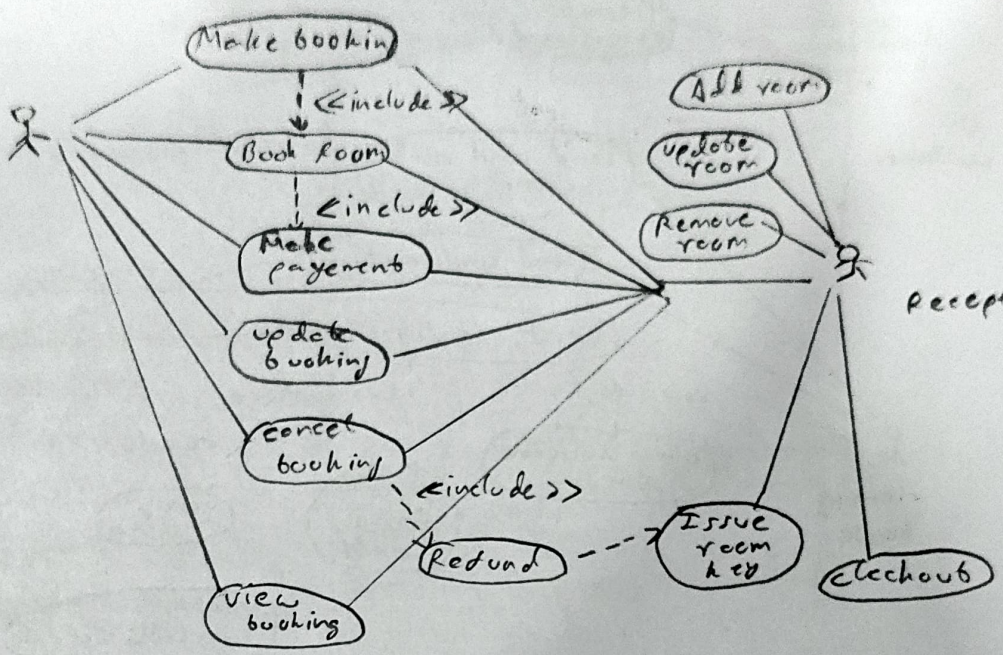


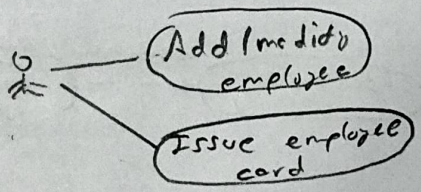
5) Passport Publication System



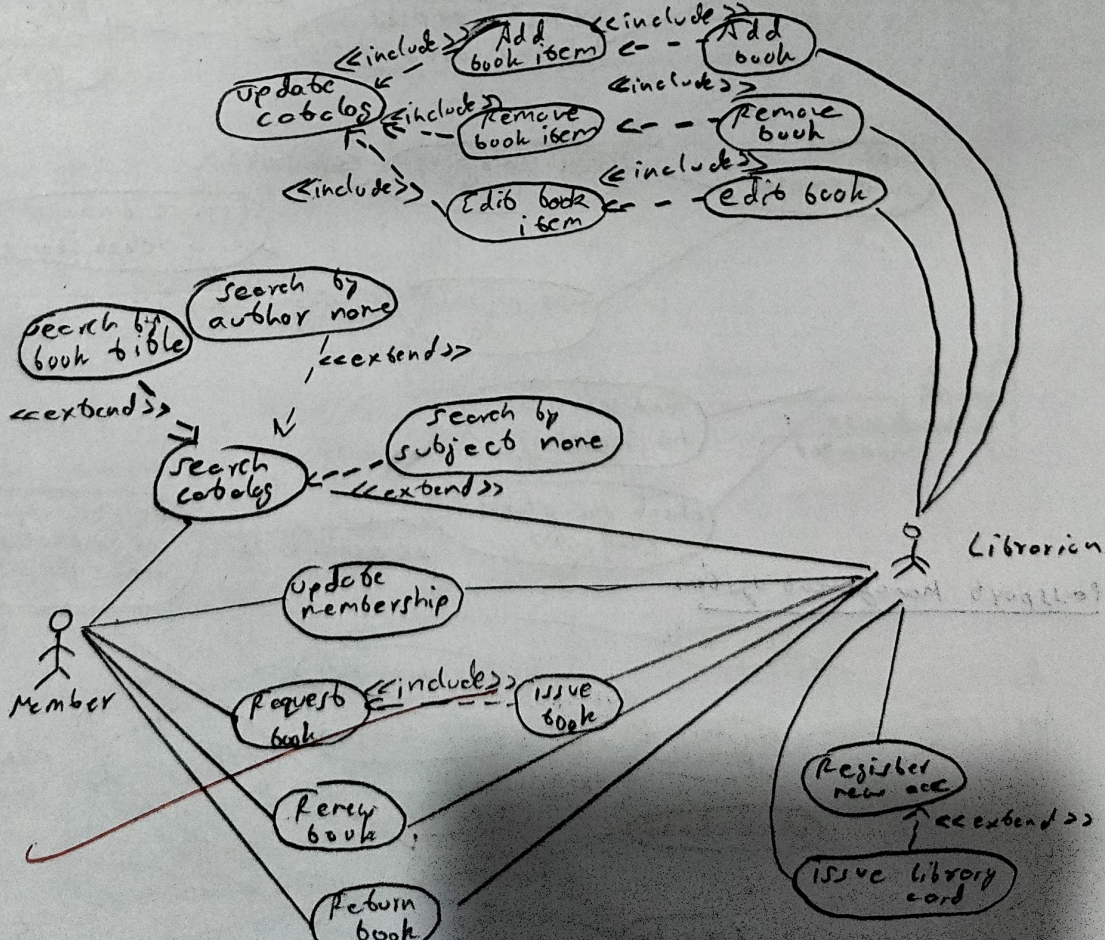
> Usecase diagrams

1) Hotel Management system

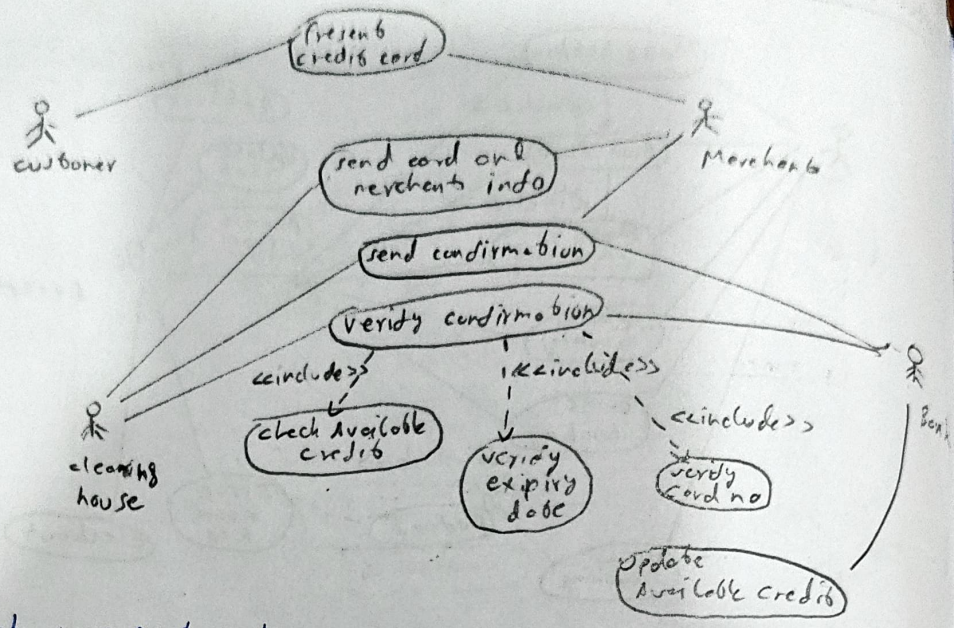




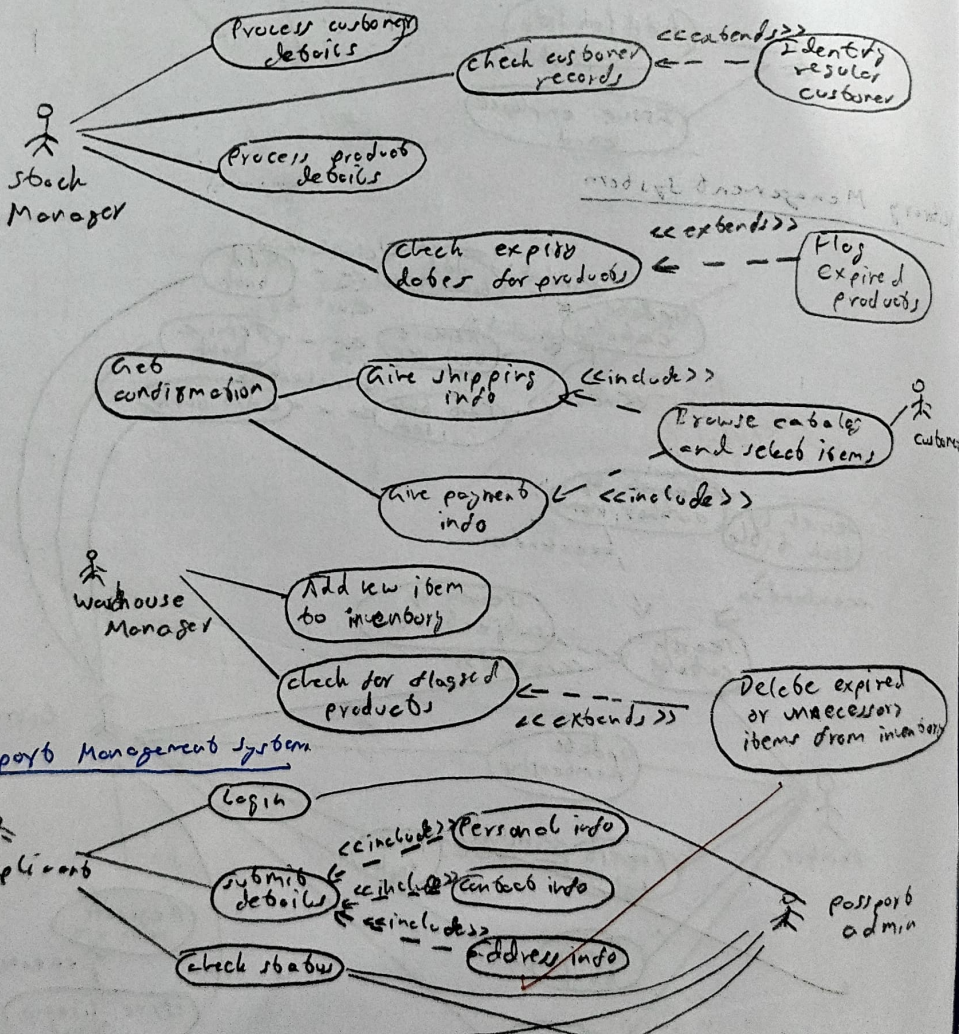
2) Library Management system



3) credit card system management



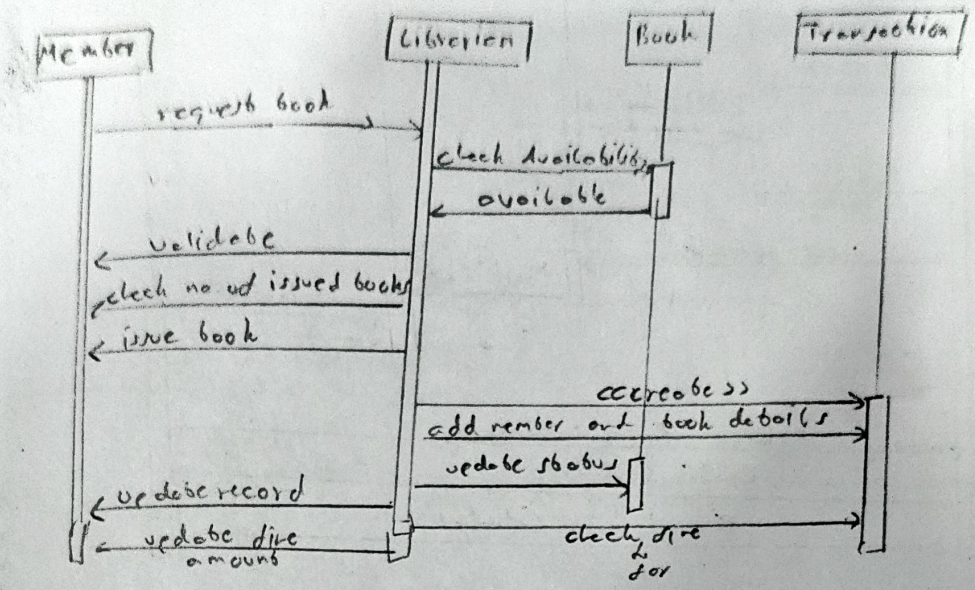
4) stock management system



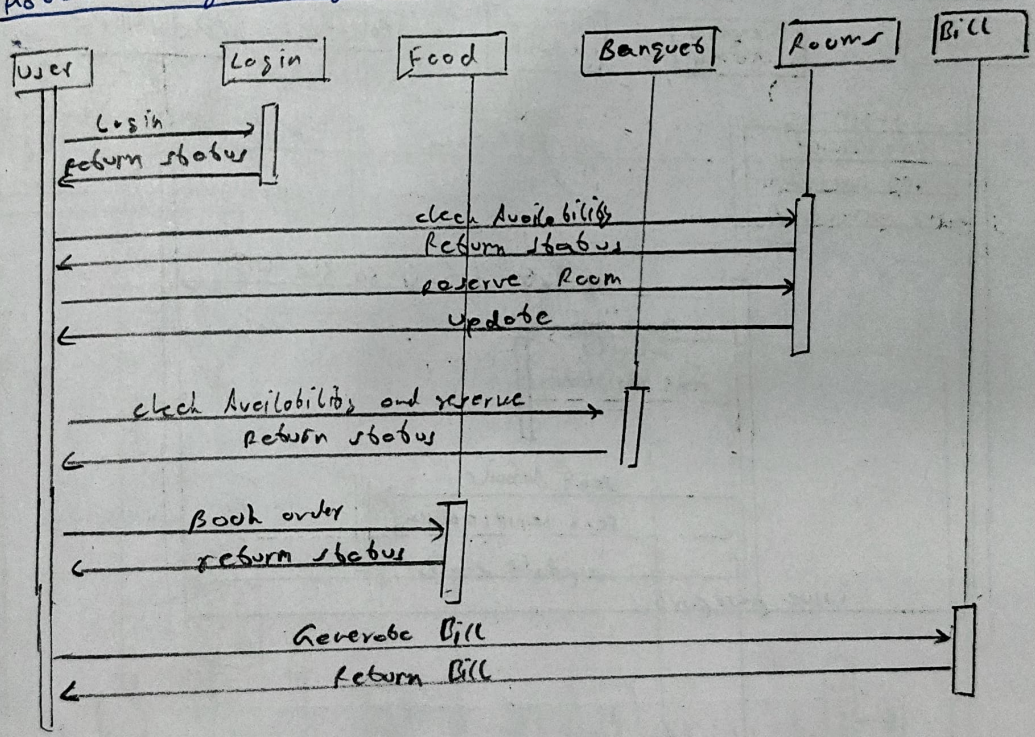
5) Passport Management system

Sequence Diagram

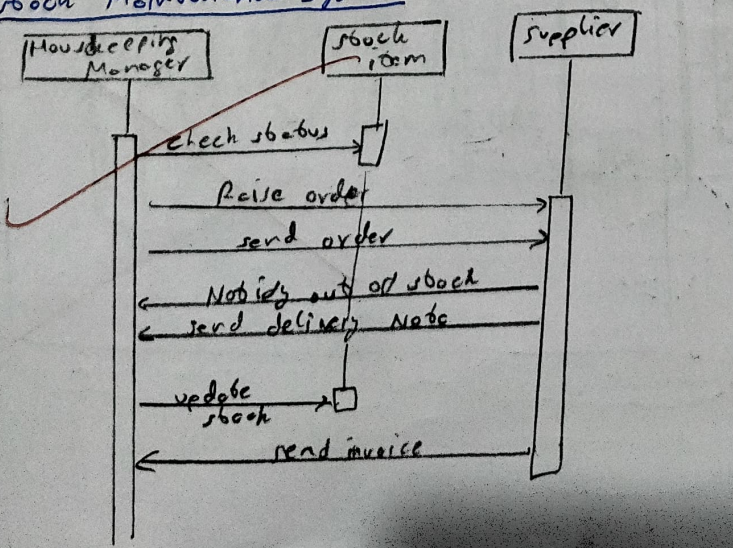
1) Library Management system



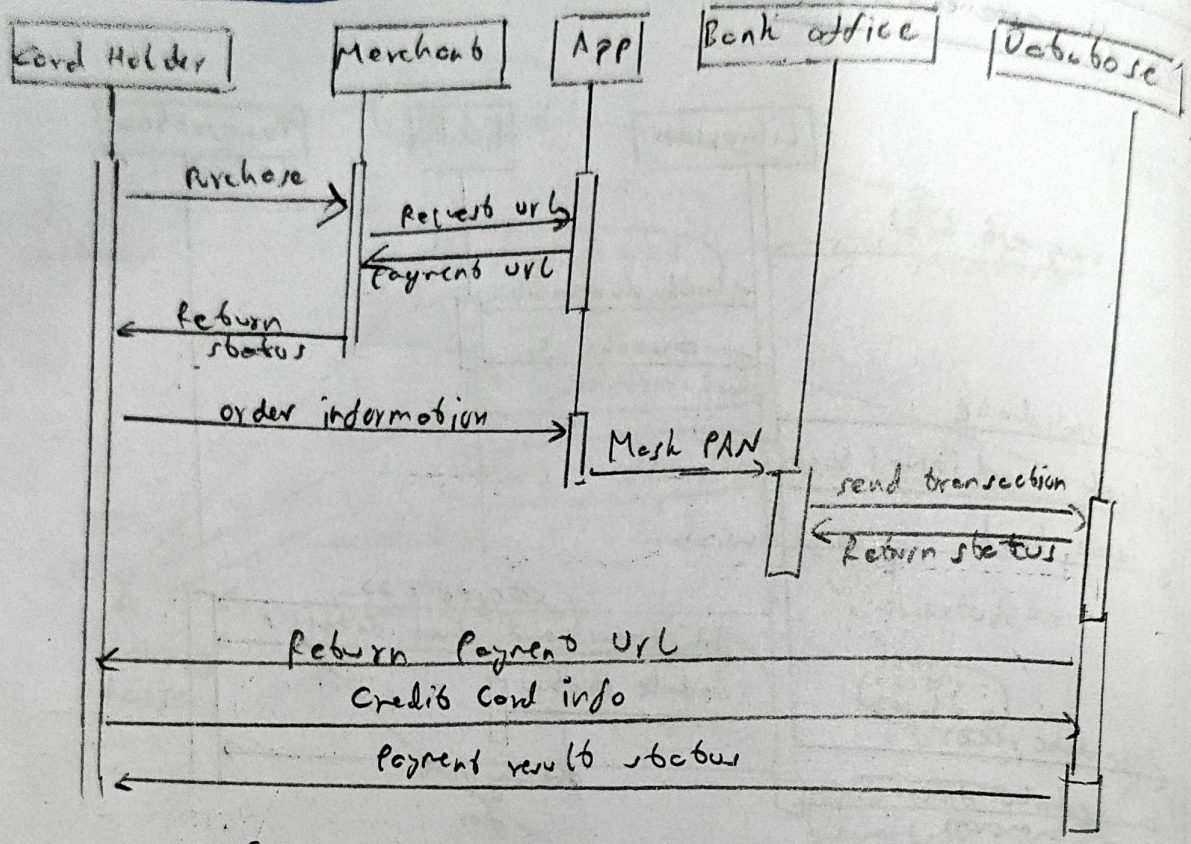
2) Hotel Management system



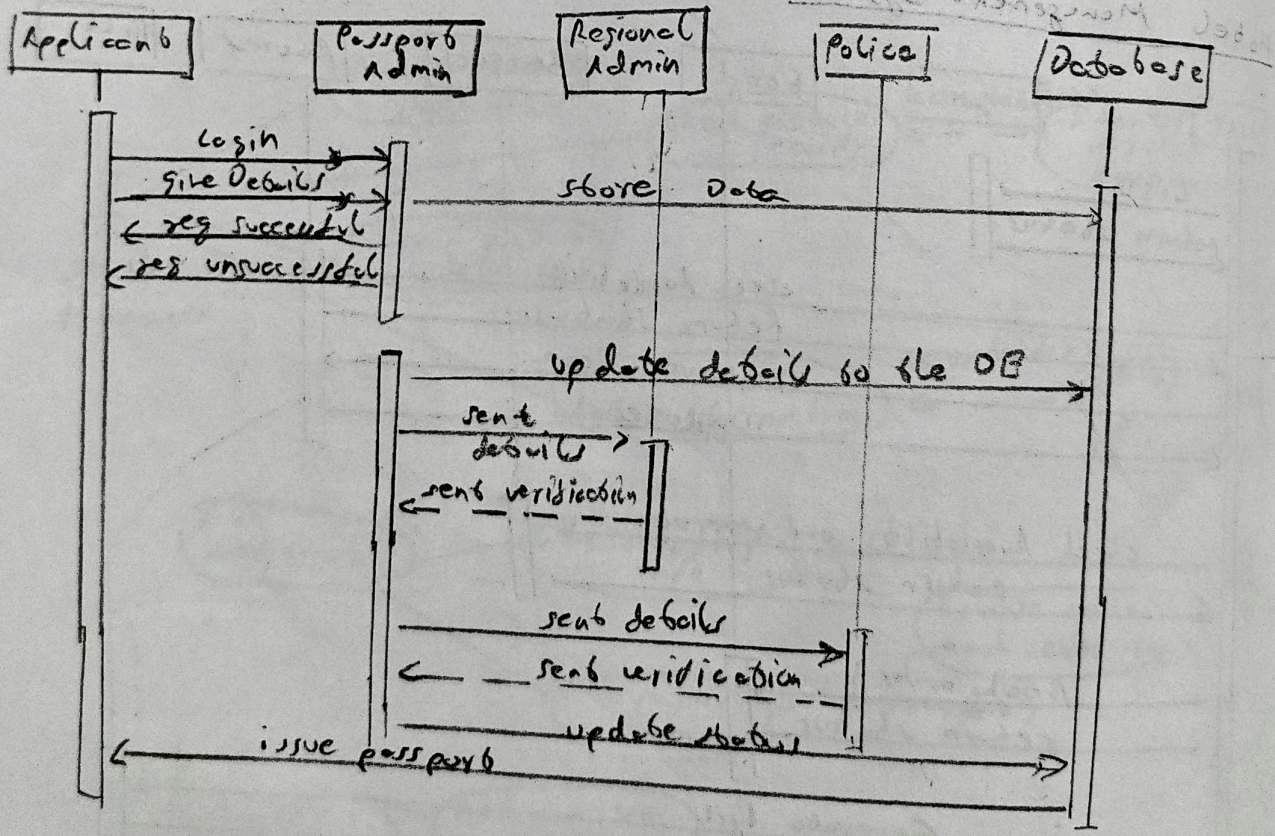
3) Stock Maintenance system



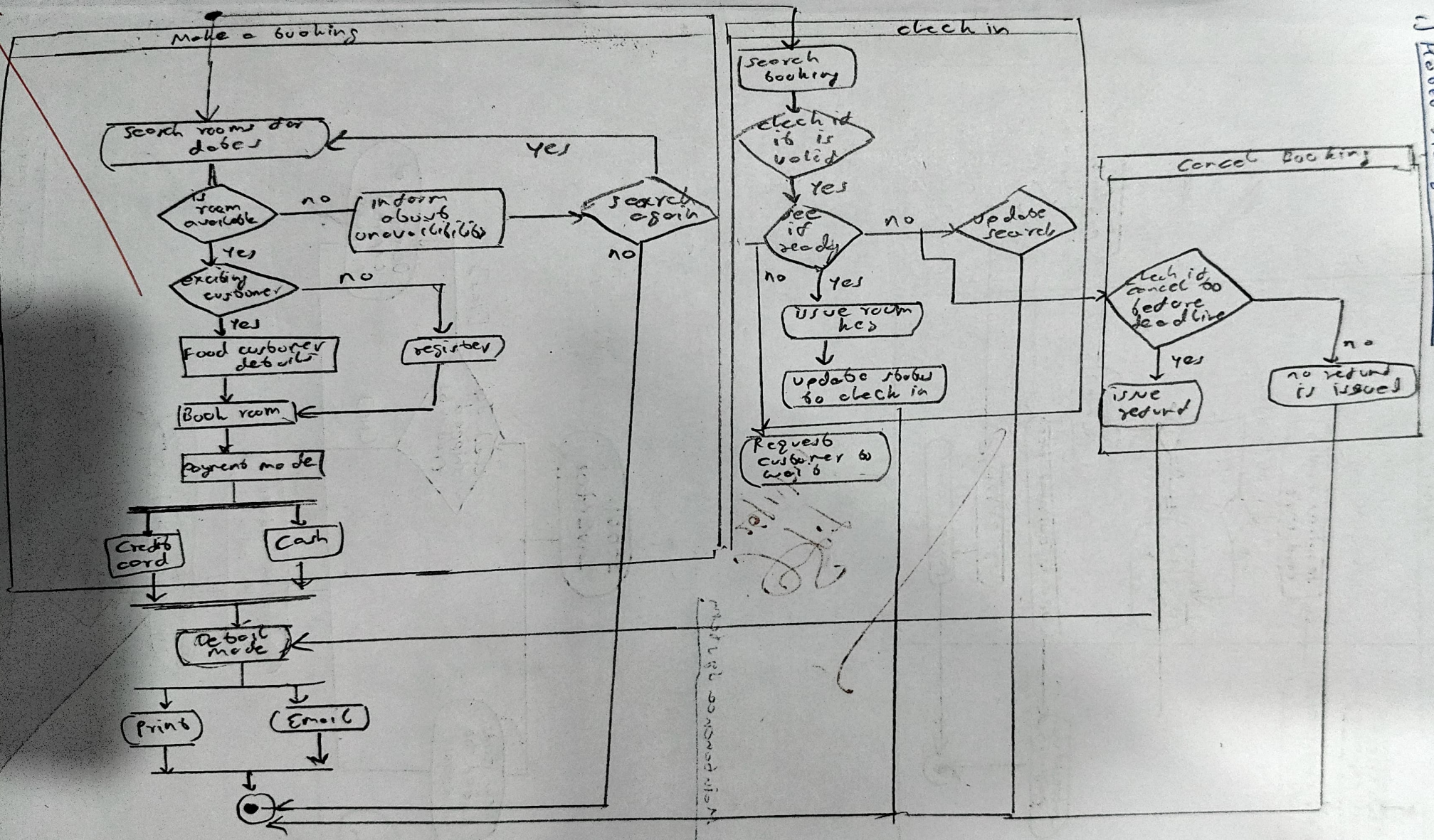
4) Credit card processing system



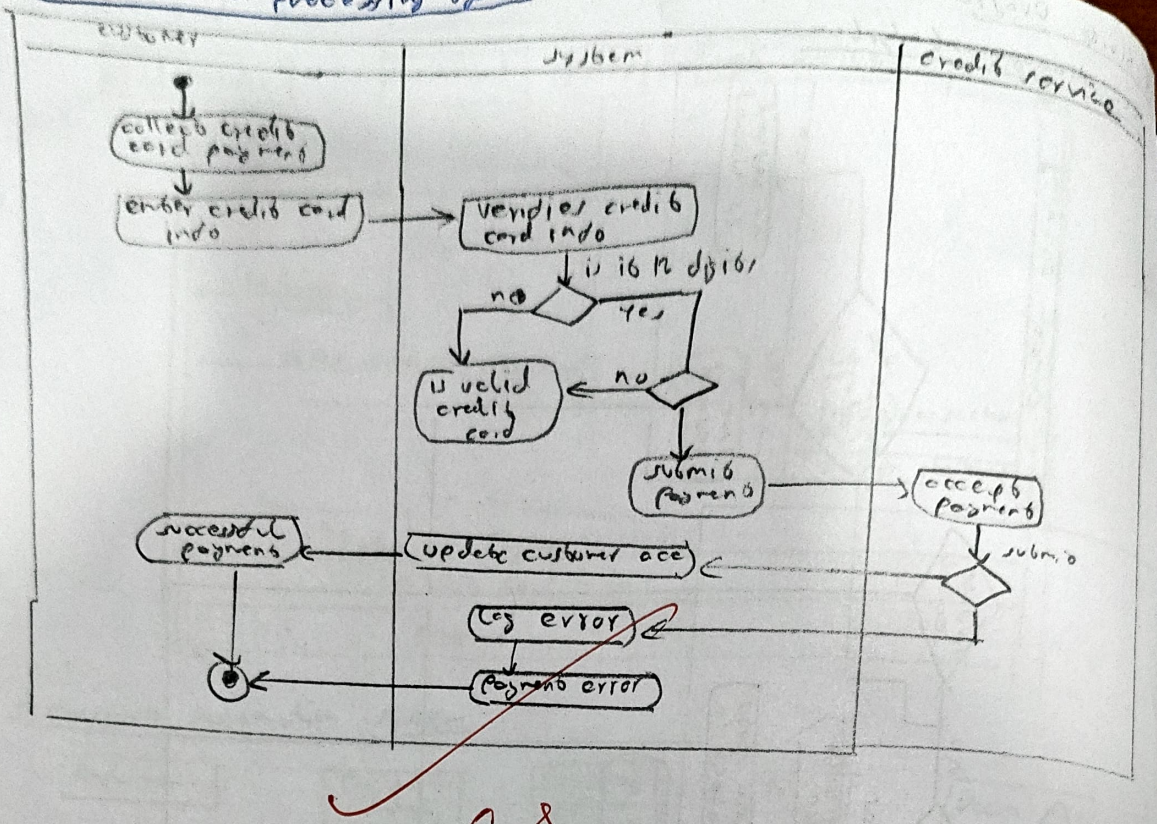
5) Passport Automation system



Activity Diagram
Hotel Management System



2) credit card processing system



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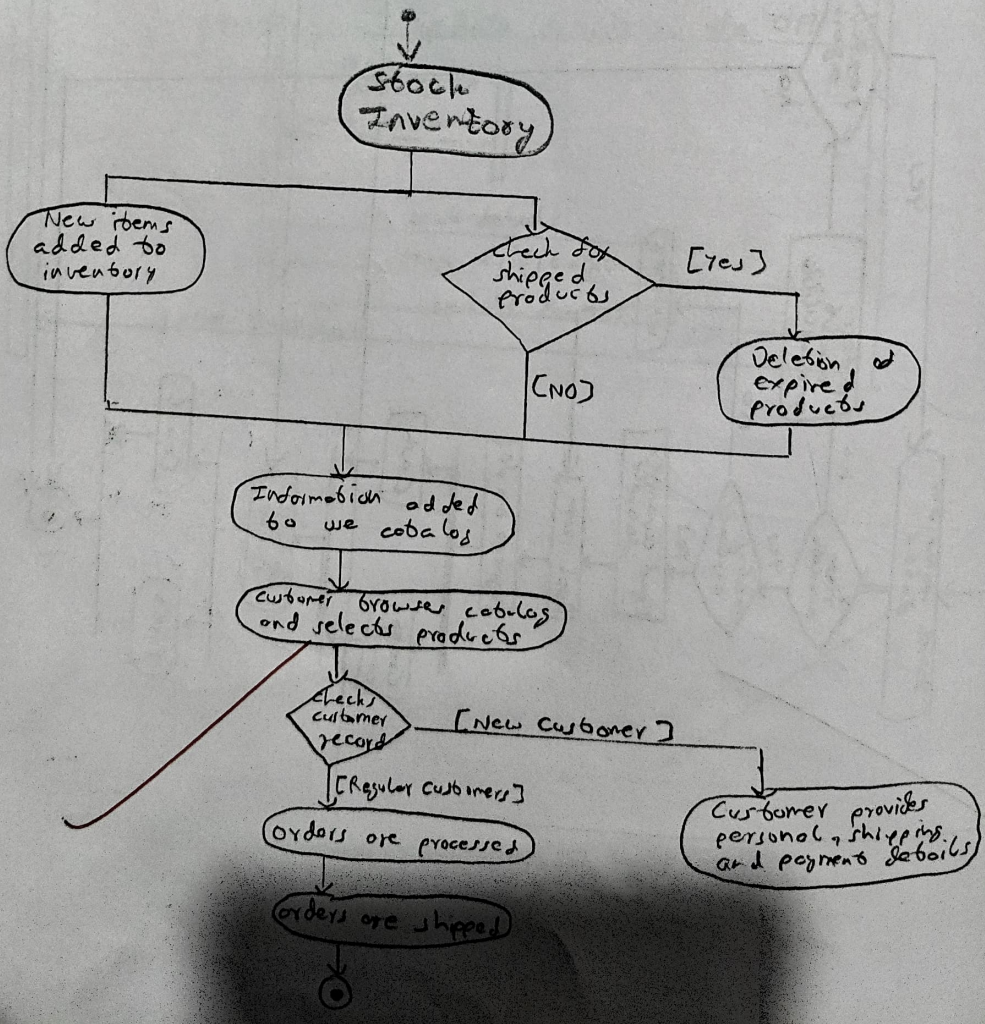
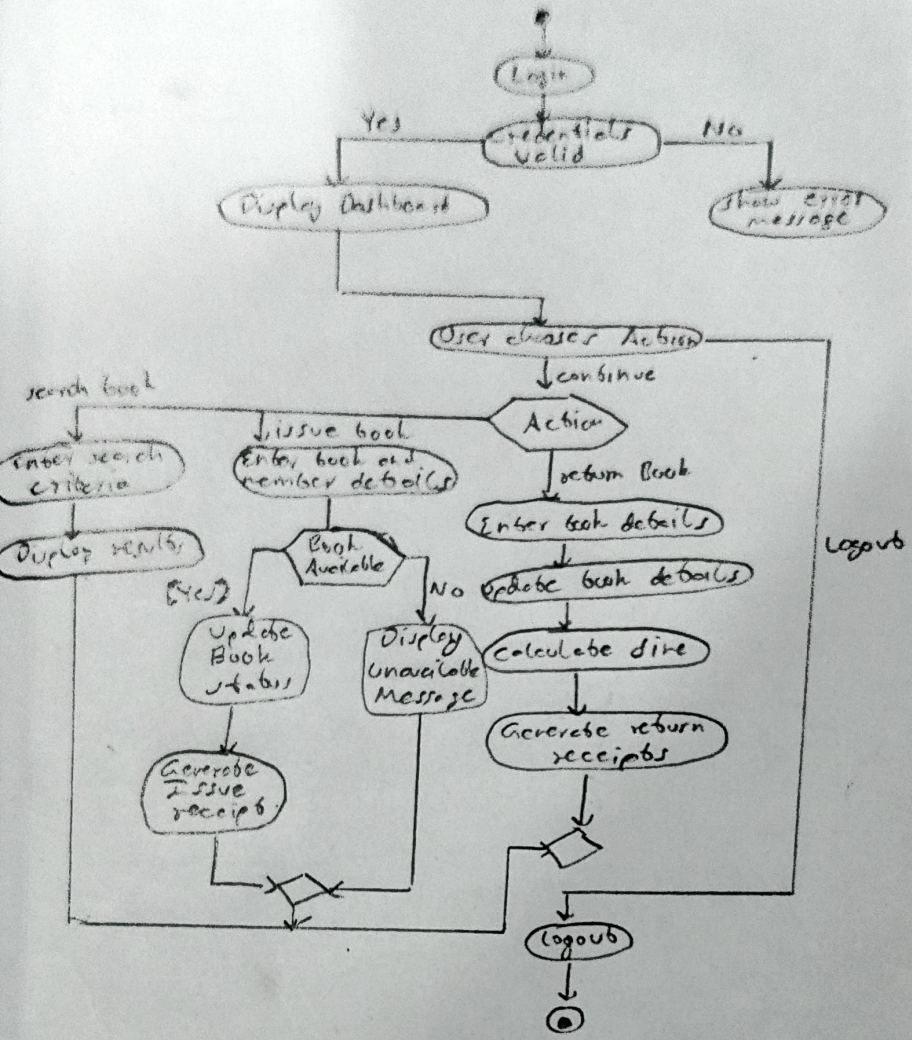
3) stock Maintenance system



4) Library management system



5) Passport Automation System