1.10.24

Software Requirement Specifications (SRS)

I Hotel Management System:

1) Introduction

1.1) Purpose of this document

The purpose of this document is to outline the software requirements for hotel management system. It serves as a guide for stakeholders to understand features, functionalities and constraints of the system.

1.2) Scope of this document

The HMS aims to streamline hotel operations enhance guest experiences and facilitate efficient management process.

1.3) Overview

The HMS is a software solution designed to automate and manage hotel operations.

2) General Description

2.1) User Objectives

hotel staff: efficiently manage reservations, check ins/outs and billing.

Management: Access reports, analytics

guests/users: Easily make reservations and access services.

2.2) User Characteristics

Staff: have knowledge about basic computer operations and hotel management processes.

Management: proficient in decision making

guests: frequent travelers.

2.3) Feature & benefits
Reservation Management: Streamlines booking process
Booking System: Automated payment processing
User friendly interface: enhance user experience and reduce time

2.4) Importance
The HMS is crucial for optimizing hotel operations, improve customer satisfaction and increasing revenue through effective management.

3) Functional Requirements
3.1) User Authentication
3.2) Reservation Management
3.3) Billing and invoicing
3.4) Reporting
3.5) Room Management
3.6) guest services.

4) Interface Requirements:
4.1) User Interface
Staff: Dashboard for staff for guest check-ins and housekeeping tasks

guests: User friendly booking portal which allow easy reservations.

5) Performance Requirements:
5.1) Respons Time
5.2) Scalability

5.3) Memory Usage
5.4) error rate

6) Design Constraints
The system must support multiple platforms. It should be built using scalable technologies like cloud databases to accomodate future expansions constraints also include budget limitations and compliance with hotel Industry standards.

7) Non-functional Attributes
7.1) Security
7.2) Portability
7.3) Reliability
7.4) Data Integrity

8) Preliminary Schedule & budget
8.1) Initial Schedule
8.1.1) Requirement gathering - 2 weeks
8.1.2) Design - 6 weeks
8.1.3) Development - 10 weeks
8.1.4) Testing & Debugging - 4 weeks
8.1.5) Deployment & training - 2 weeks
Total Duration - 22 weeks

8.2) Preliminary Budget
8.2.1) Development costs - $50000
8.2.2) Testing costs - $15000
8.2.3) Deployment costs - $5000
Total estimated budget - $70,000

II Credit Card processing System

1) Introduction

1.1) Purpose

The purpose of this document is to provide overview of the requirements for credit card processing system. It guide stakeholders to understand functionality and constraints of system

1.2) Scope

This document covers the complete functionality of the CCPS including User ~~into~~ interaction, Security measures and integration with other systems.

1.3) Overview

The CCPS is designed to facilitate secure and efficient transactions between customers and Merchants

2) General Description

2.1) User Objectives:

Merchants: enable secure payment processing and manage transaction records.

customer: Make quick and safe payments

Administrators: Monitor transactions and make reports

2.2) User Characteristics

Merchant familiar with e-commerce platforms and basic transactions

customers: Varied levels of tech savviness primarily seeking ease of use.

Administrators: Technical knowledge of payment processing

2.3) Features and benefits

Secure transactions

Real-time processing

User - friendly Interface

2.4) Importance
essential for enabling smooth and secure transactions reduce risks.

3) Functional Requirements
3.1) user authentication
3.2) Transaction prossig
3.3) Payment gateway Integration
3.4) Fraud Detection
3.5) customes support Interface

4) Interface Requirements
4.1) User Interface
Merchant Dashboard for transaction Managmt
customer payment Interface
4.2) Software Interfaces
API's for Integration with third-party payment gateways.

5) Performance Requirements
5.1) Response Time
5.2) Scalability
5.3) Error rate
5.4) System Availability

6) Design constraints
6.1) encryption for card-holder data & transaction
6.2) handle millions of transactions per day

7) Non- functional Attributes

7.1) Security

7.2) Portability

7.3) Reliability

7.4) Data Integrity

8) preliminary schedule and budget

8.1) Initial Schedule

Total duration - 24 weeks

8.2) preliminary Budget

Total estimated Budget - $ 100,000

III Library Management System

1) Introduction

1.1 purpose of this document

This document outlines the objectives and necessit
of the library management system (LMS) proje
It serves as a comprehensive guide for
stakeholders to understand this systems
requirements, functionality and overall
value proposition.

1.2 Scope of this document

The document details the operational goals
of the LMS, providing an overview of its
capabilities and expected outcomes. It
address the development cost, estimated
timelines and the benefits it offers to users

and stakeholders ensuring clarity and alignment among all parties involved.

1.3 Overview

The LMS is ~~assigned to~~ designed to stream-line library operations, including cataloging, circulation, and user management. It aims to enhance the efficiency of library services and improve user experience through automated processes.

2) General Description

The LMS is tailored for librarians library staff and patrons enabling them to interact seamlessly with library resources.

User Management: registration membership management and user profiles.

Catalog Management: Adding, updating and searching for library material.

Circulation: check-out and return process, tracking overdue items.

Reporting: generation reports on usage, status and inventory.

3) Functional Requirements

The System's functional requirements include

1. User registration and Authentication
users must be able to register and log in securly.

2. Catalog search and Browsing :users should be able to search for materials by title, author or genre

3. Circulation Management : Functions for checking out and returning materials

4. Fines Management : calculations of fines for overdue items.

5. Reporting tools : generation of various reports

4) Interface Requirements
The LMS will feature a user interface for patrons and staff, designed for navigation.

A database interface for data storage and retrieval

5) Performance Requirement
- support at least 100 Concurrent users without performance degradation
- Return search results within 2 seconds
- Maintain uptime of 99.5%

6) Design constraints
use open source technologies for development.

- compatability with existing hardware and software within library infrastructure

7) Non - fnctional attributes
security
portability
Reliability
Scalability

8) preliminary schedule and budget
The intial project timeline is estimated at 6 months with a budget of ₹ 500,000 covering development and testing.

IV Stock Maintenance System

1) Introduction

1.1) purspose of this document
The stock Maintenance System will automate inventory tracking, sales, re-ordering and reporting to help business manage stock efficiently

1.2) scope of this document
The system will manage stock, track sales generate reports and send alerts for low stock and expiring products

2) overall description
2.1) product Functions
- stock management: Add, update, remove stock and set reorder levels.

Sales tracking : record sales and adjust stock levels.
- Reporting - real-time reports on stock and sale trends
- Alerts - for low stock and expiring products

User characteristics
- Admin - Manage the system and users
- Staff - handle stock operations

3). System Requirements :

3.1 Functional requirements
- stock management
- sales management
- reporting
- notifications

3.2 Interface requirements
User Interface.
- Clean, responsive UI accessible on both desktops and mobile devices.
- Role-based dashboards: Admin can see full system data, while staff only see relevant stock operations.
- search and filter functionality for stock items and sales records.

3.2.1) hardware Interface : Compatible with standard PC's, tablets and mobile devices
3.2.2) software Interface :
- Integration with existing billing systems

4) performance requirements
- Transaction processing
- Stock updates and sales transaction should be processed within 2 seconds under normal load
- Scalability
- The system must be handle up-to 10,000 stock items and proces 500 sales transaction per hour without degradation in performance

5) preliminary schedule
1. Requirement Gathering : 2 weeks
2. System Designs : 3 weeks
3. Development : 8 weeks
4. Testing : 4 weeks
5. Deployment : 2 weeks
6. Post-deployment support : 2 weeks

Total project Timeline : 21 weeks (approx 5 months)

6) Budget
6.1) Development costs :
- Developers (2) : $50,000
- UI/UX designers : $10,000
- Testers : $8000
- Project manager : $12000

6.2) Infrastructure :
- Cloud hosting & servers : $ 5000/year
- Software Licenses : $ 3000

6.3) Miscellaneous :

- Contigency (10% of total cost): $9000

Total estimated Budget: $97000

7#) Notifications and Alerts

- Real-time alerts for low stock and expiring items via email or SMS
- Configurable thresholds for stock level and expiration.

V. Passport Automation System

1) Introduction

1.1) purpose and Scope of this document.

The passpor automation system will automate the passpord application processing, and insurance workflows. It allows applicants to apply online, upload documents, track their application status and schedule appointments while enabling goverment offcals-to verify documents, schedule interviews and issue passports. The system aims to prove efficiny, reduce manual errors and provide a seamless Experience for both applicants and officials.

2) User Interfaces:

- Applicants: Online forms for application, document uploads, appointment scheduling and tracking of passpord status.

- officials - Administration dashboards for reviewing and verifying applications, scheduling interviews and passport issuance.
- Accessibility The system will be available on desktops and mobile platforms with a user-friendly interface.

3) Performance -
- Applications and document uploads processed within 3 seconds.
- Capable of handling 10,000 concurrent users during peak periods (eg. application deadlines or holiday seasons).

4) Software and hardware Interface
Integrates with government databases such as national ID and police verification systems.

Support desktop PC's, tablets and mobiles for applicants and officials.

5) ~~Preliminary~~ schedule.

1.	Requirement analysis	: 3 weeks
2.	System Design	: 4 weeks
3.	Development	: 12 weeks
4.	Testing	: 5 weeks
5.	Deployment	: 3 weeks

Total duration : 27 weeks (Approx (6.5 months))

6) Budget

Development : $ 100,000

Infrastructure and licensing : $ 20,000

Contigency and Miscellaneous costs : $ 15,000

Total estimated Budget : $ 138,000

7) Security and compliance

- ensure encrypted data transmission and secure storage for sensitive personal information
- Role - based access for officials with multi - factor authentication
- compliance with national data protection laws and international Standards for passport issuance.

8) Notifications and Alerts

- Real - time notifications via email or SMS for application status, appointment reminders and document verifications
- automated alerts for incomplete applications or expiring deadlines.

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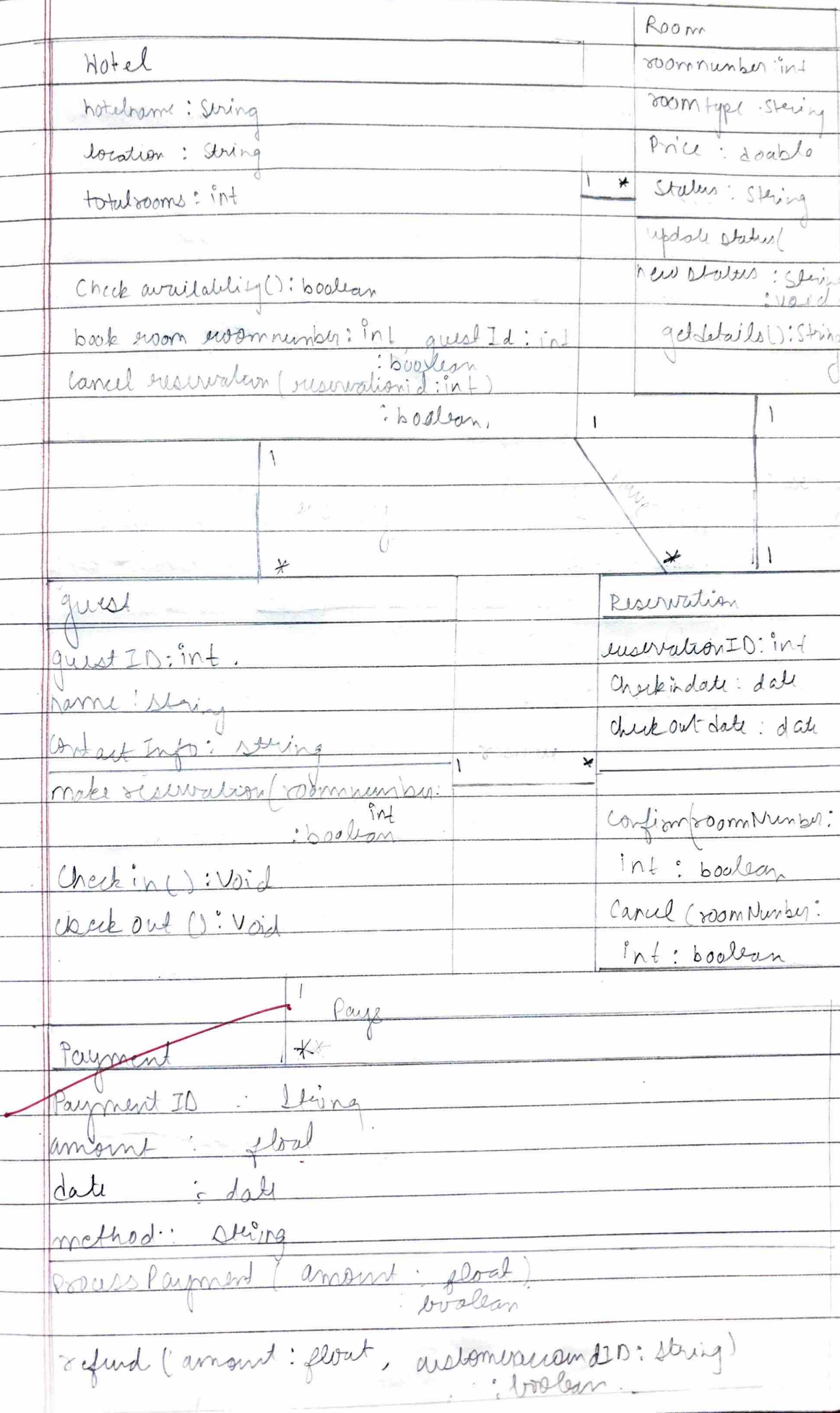
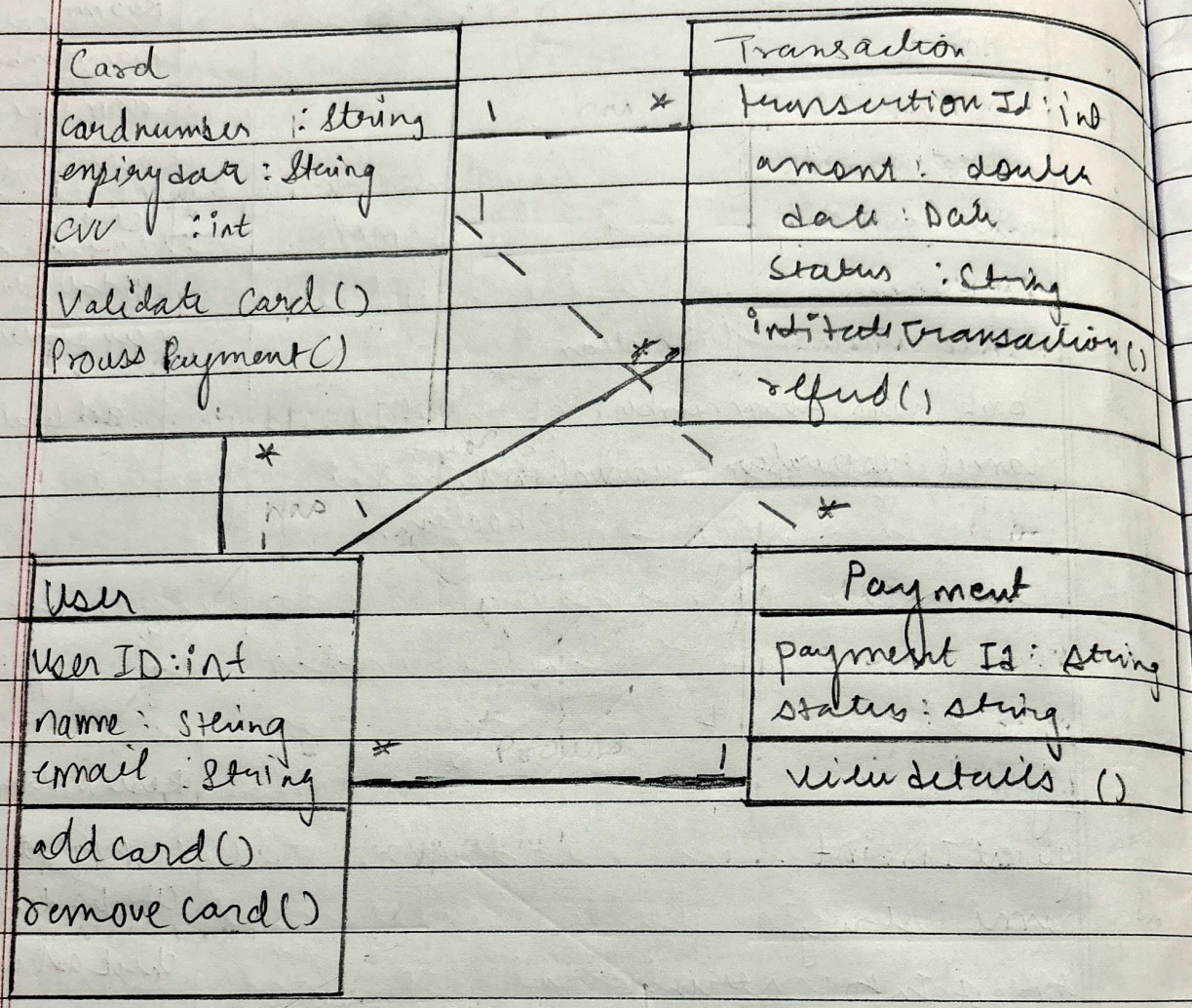
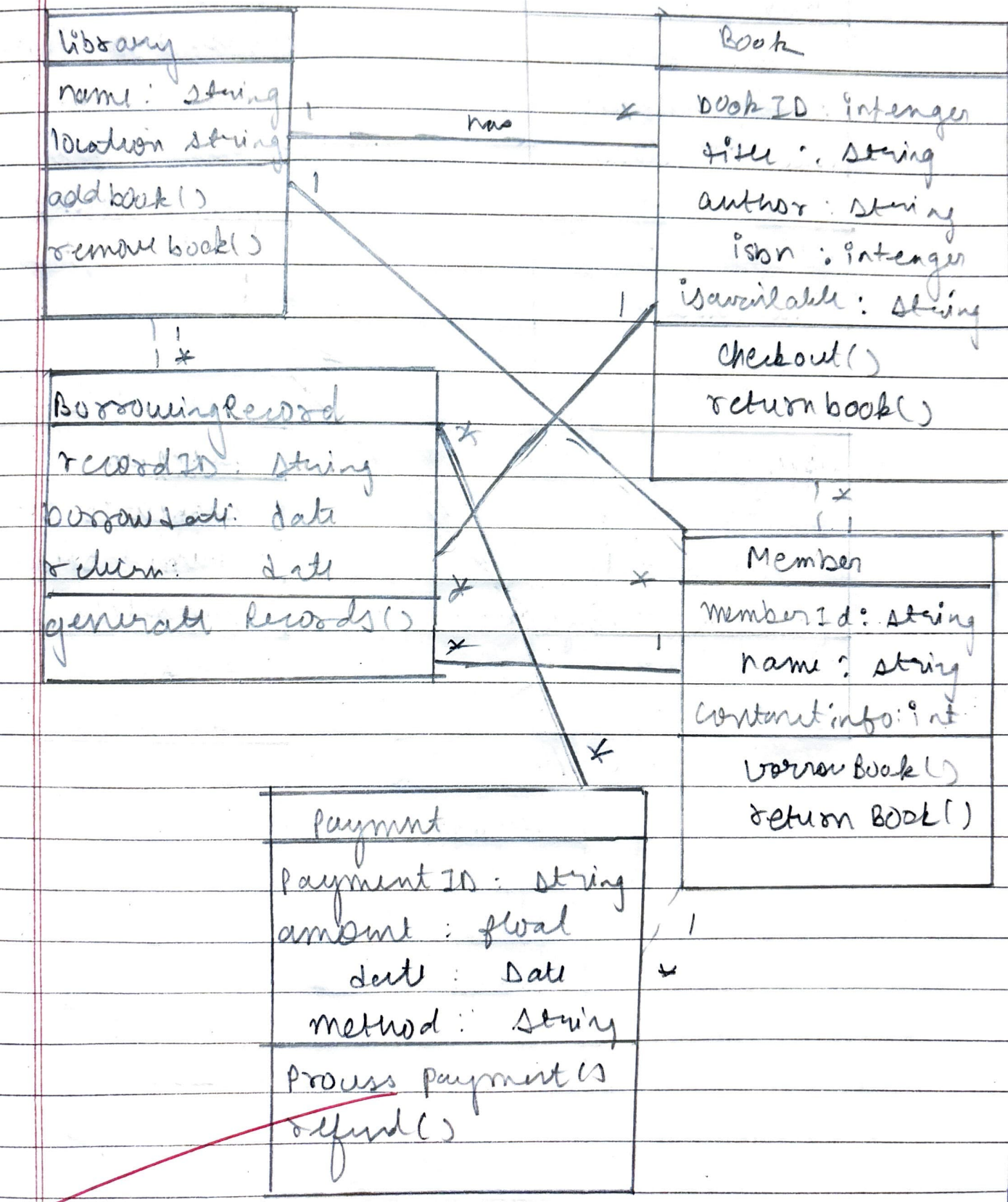
Class Diagram for Hotel Management System



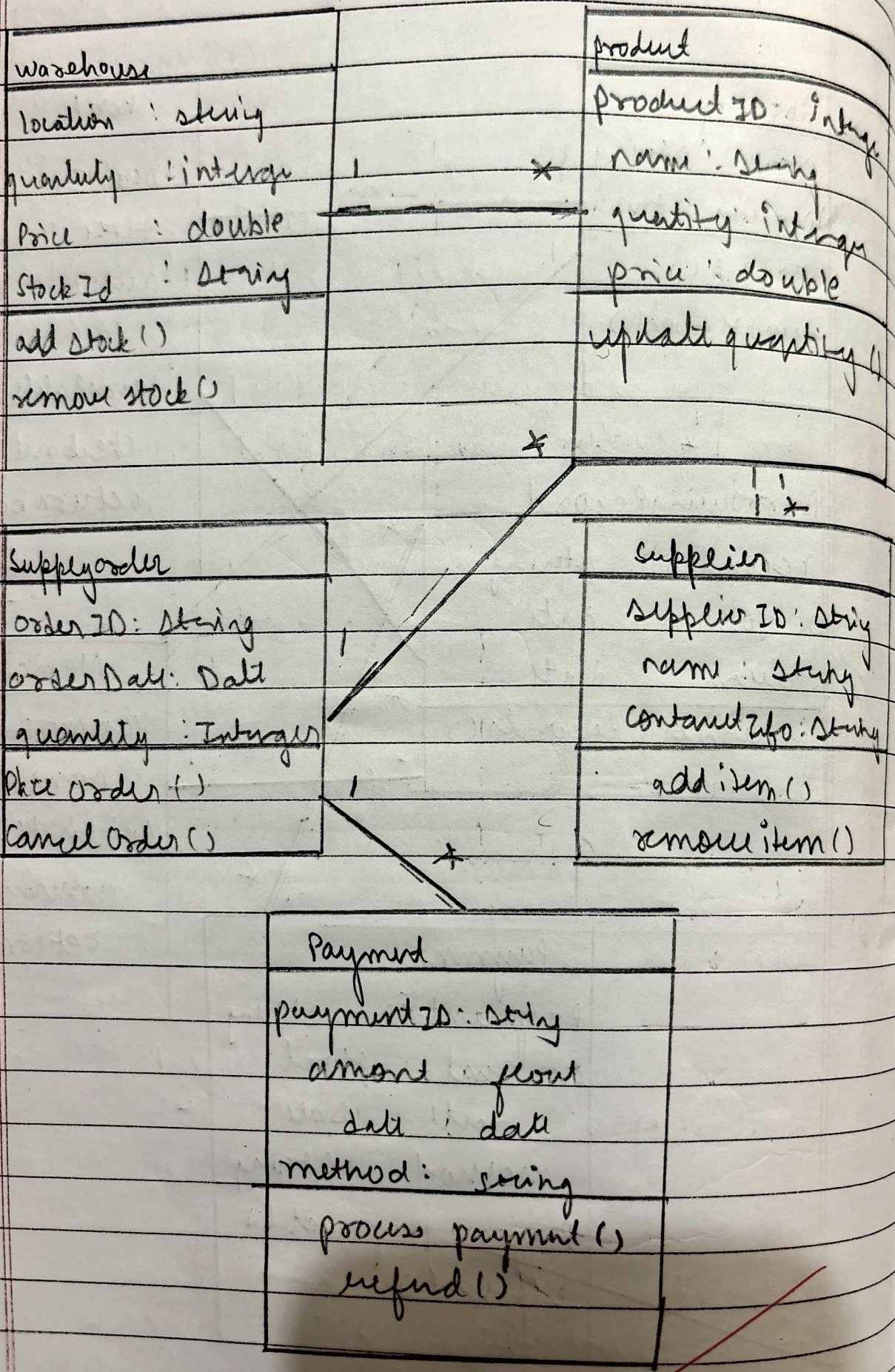
Class Diagram for credit card processing



Class Diagram for Library Management System



Class Diagram for Stock Maintainance System



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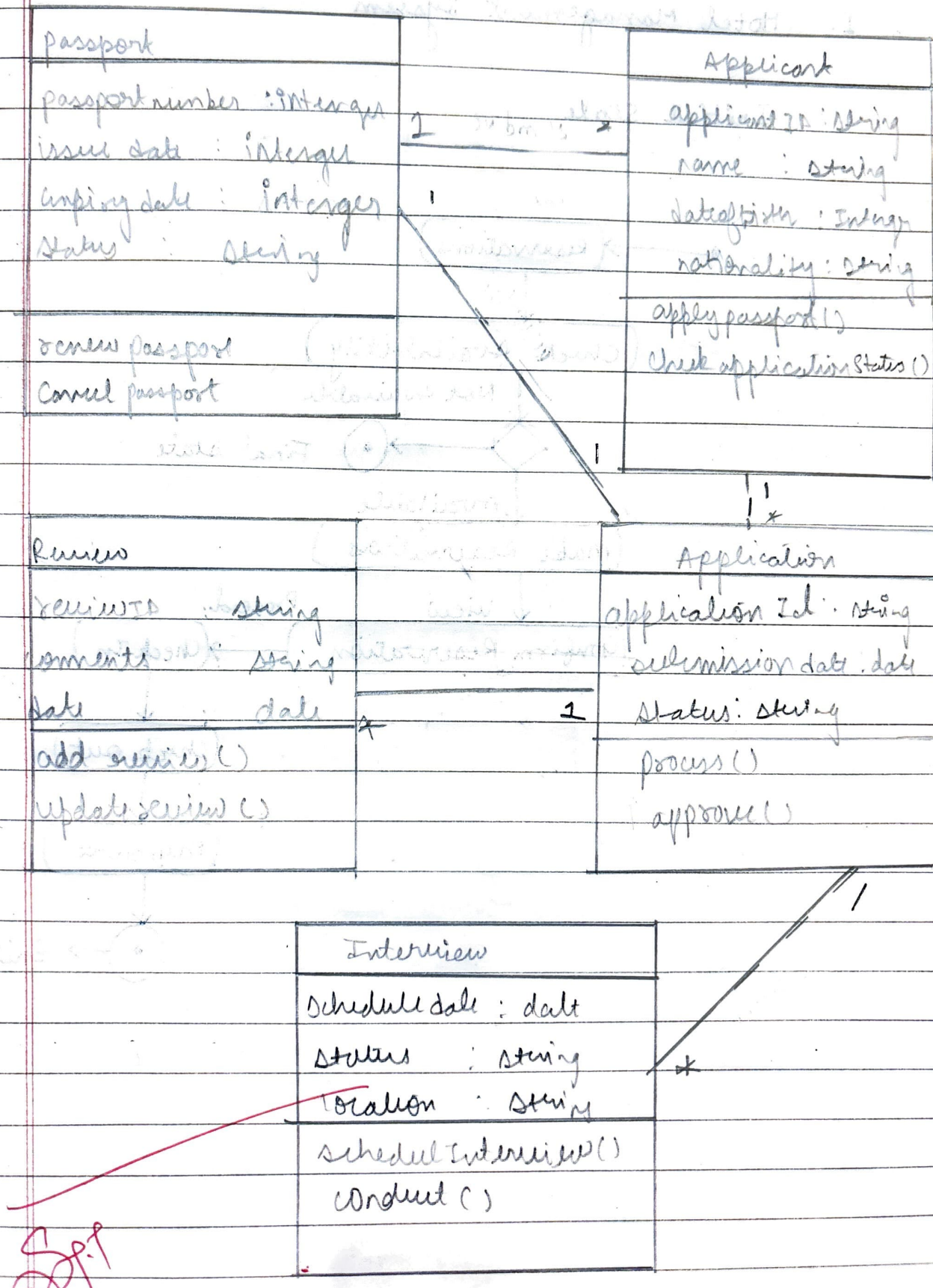
Class Diagram for passport automation system



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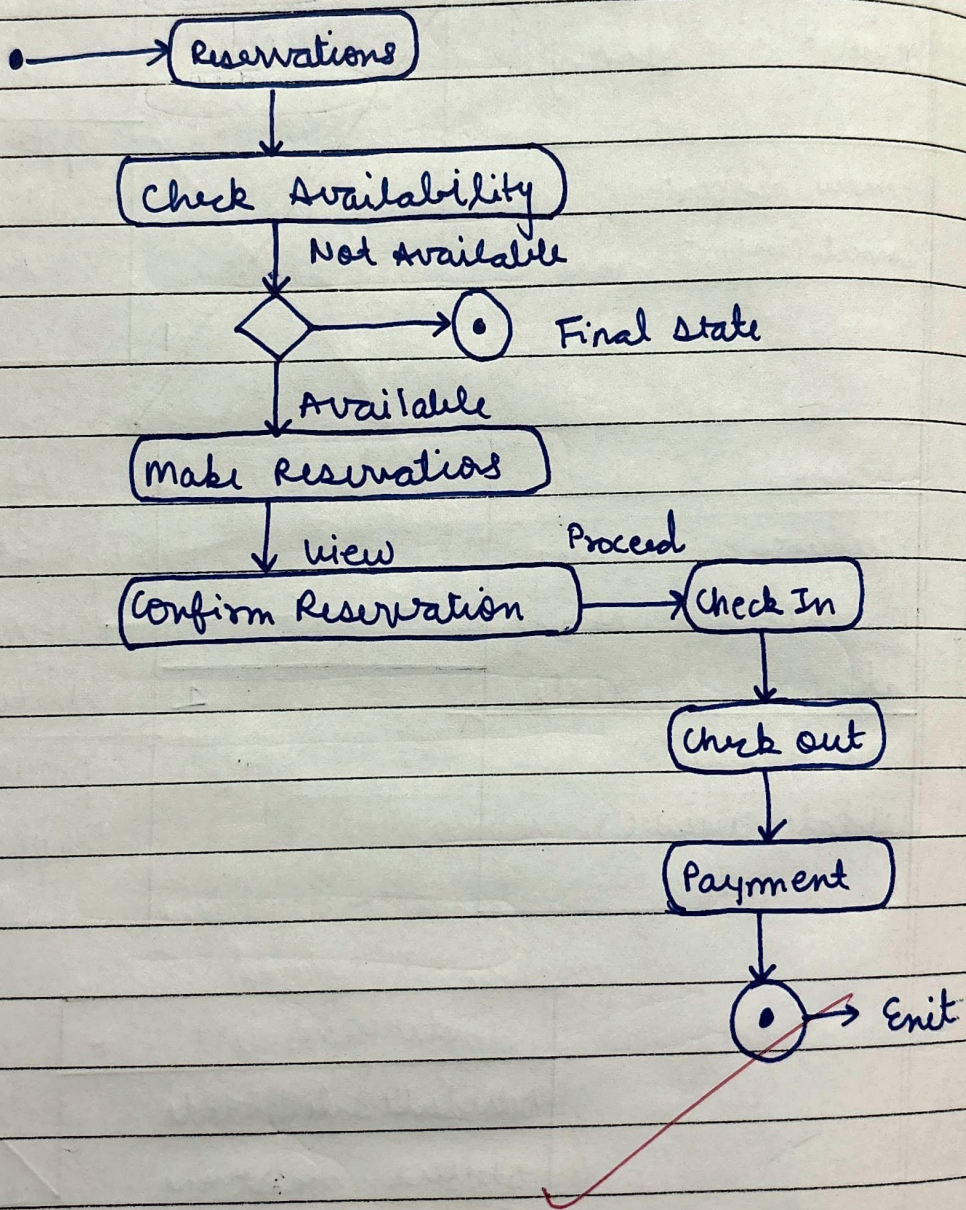
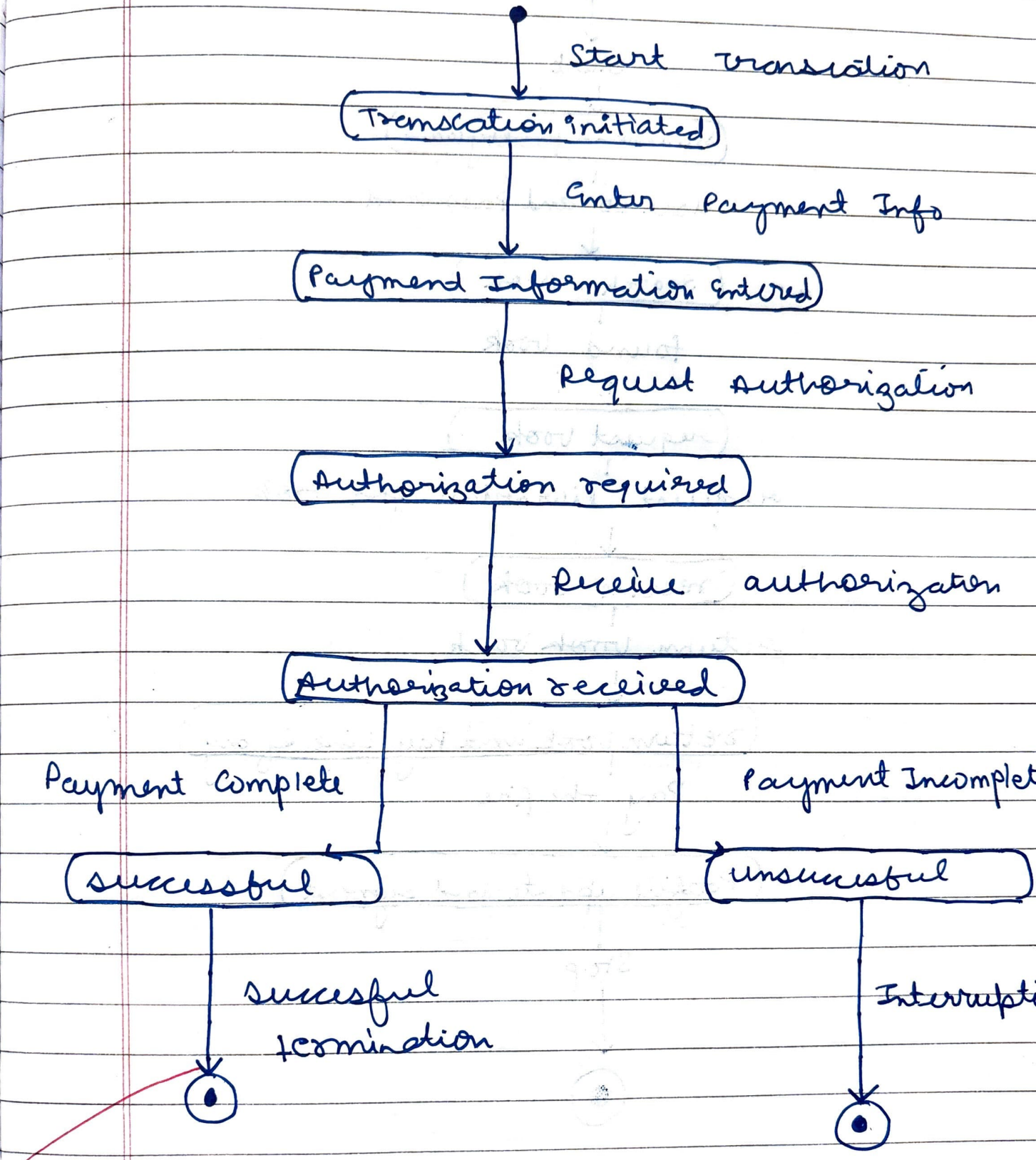
Q Draw State Diagrams for the following applica

1. Hotel Management System

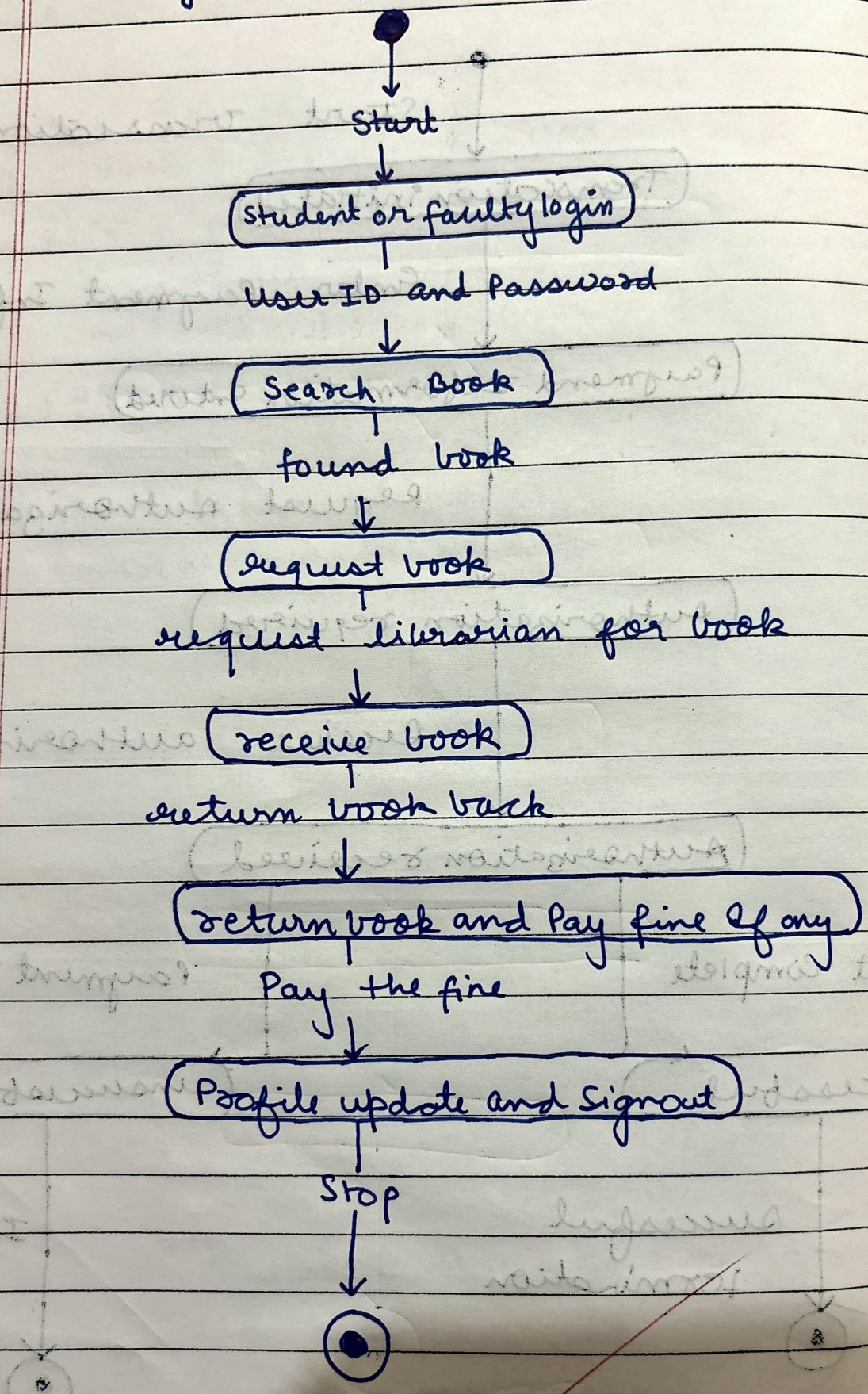
Initial State



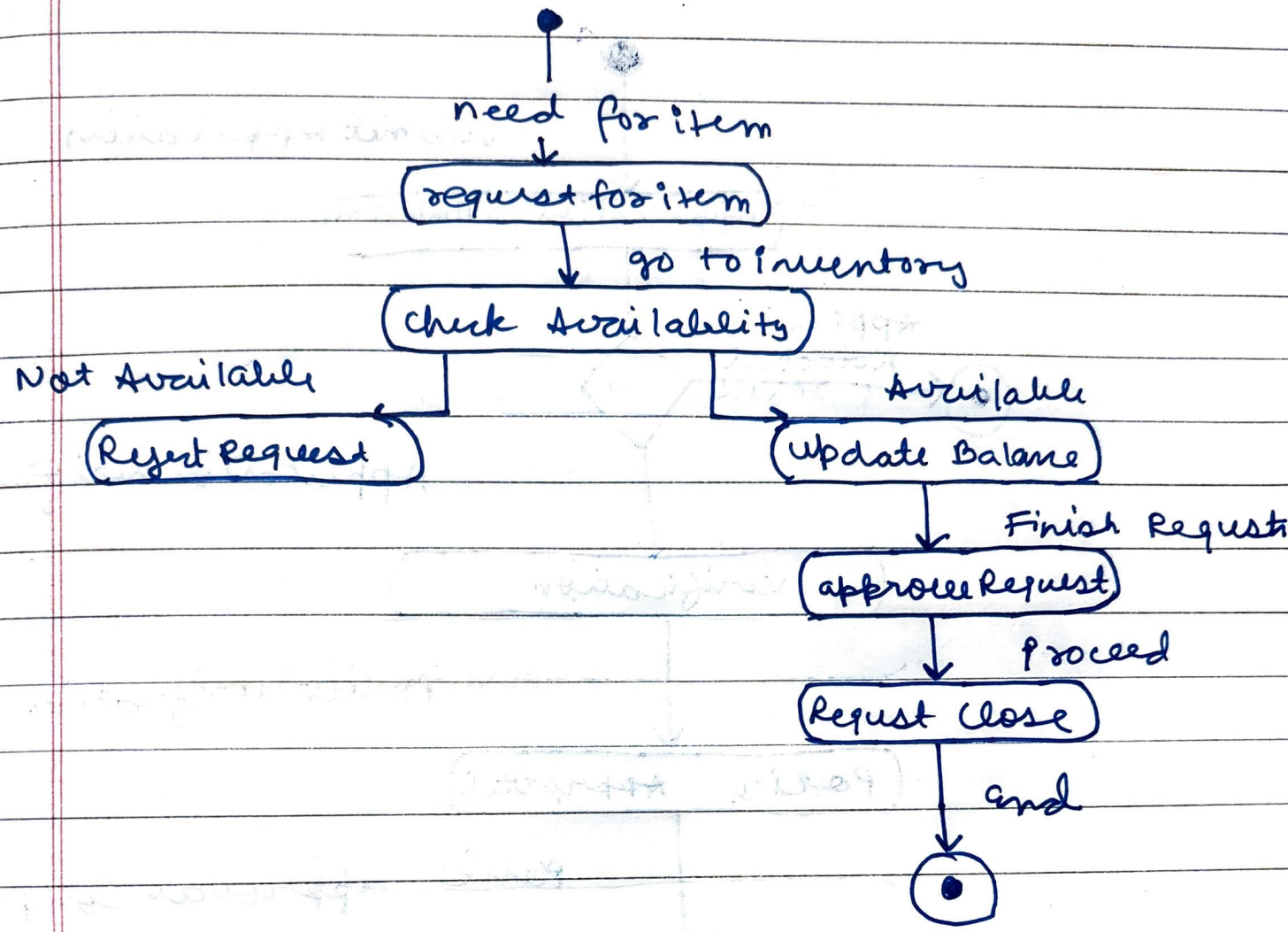
2. credit card processing



3. Library Management System



4. Stock Maintenance System



passport Automation System