

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JnanaSangama”, Belgaum -590014, Karnataka.



## LAB REPORT on

# Object Oriented Modeling and Design

*Submitted by*

**Dhruv Dubey (1BM19CS048)**

*in partial fulfillment for the award of the degree of*  
**BACHELOR OF ENGINEERING**  
*in*  
**COMPUTER SCIENCE AND ENGINEERING**



**B.M.S. COLLEGE OF ENGINEERING**

(Autonomous Institution under VTU)

**BENGALURU-560019**

**April-2022 to July-2022**

**B. M. S. College of Engineering,  
Bull Temple Road, Bangalore 560019**  
(Affiliated To Visvesvaraya Technological University, Belgaum)  
**Department of Computer Science and Engineering**



**CERTIFICATE**

This is to certify that the Lab work entitled “**LAB COURSE OBJECT ORIENTED MODELING AND DESIGN**” carried out by **DHRUV DUBEY (1BM19CS048)**, who is bonafide student of **B. M. S. College of Engineering**. It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the academic year 2021-2022. The Lab report has been approved as it satisfies the academic requirements in respect of **OBJECT ORIENTED MODELING AND DESIGN - (20CS6PCOMD)** work prescribed for the said degree.

**Dr. Latha NR**  
Assistant Professor  
Department of CSE  
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### **Course Outcome**

CO4	Ability to conduct practical experiment to solve a given problem using Unified Modeling language.c
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# **Exercise 1: College Information System**

## 1. Write SRS

College Information System

Institute:

- Should be able to add details of new students
- Should be able to edit & view details of old students
- Should be able to add, edit and view academic results of students

Student:

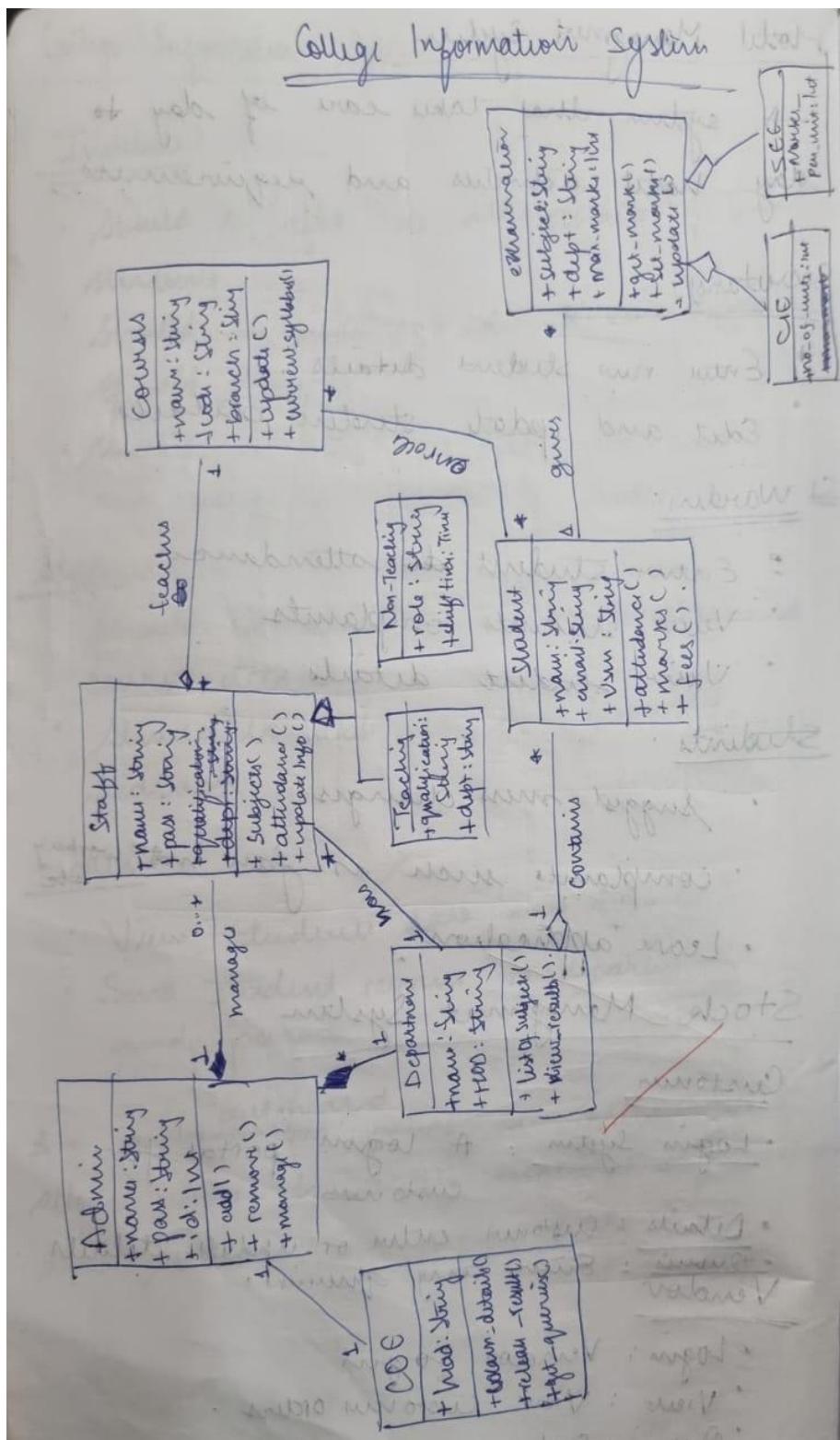
- Should be able to view faculty and course details
- Should be able to give faculty feedback

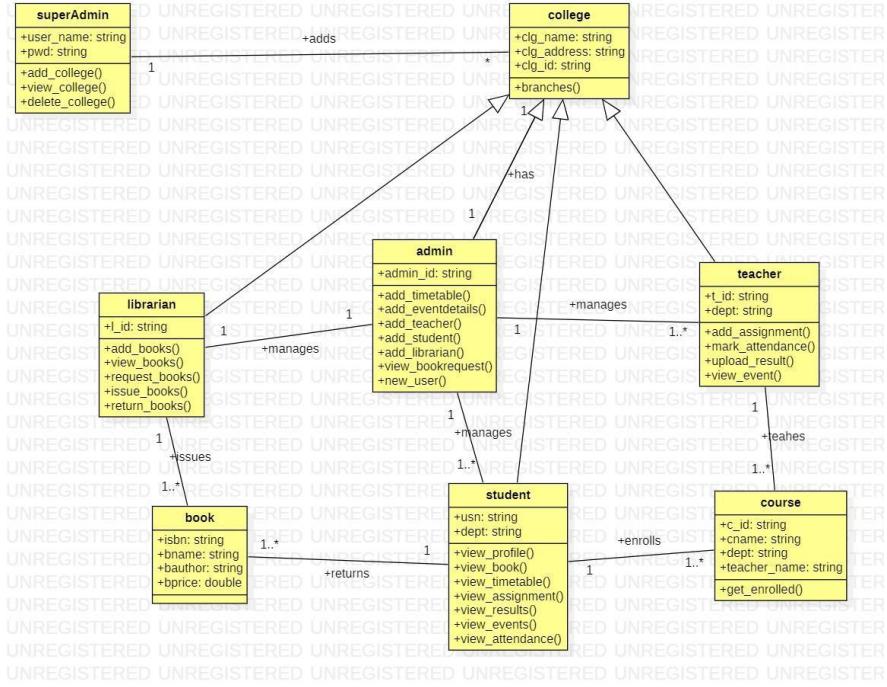
Faculties:

- View students date and details
- Send student reviews to department and parents

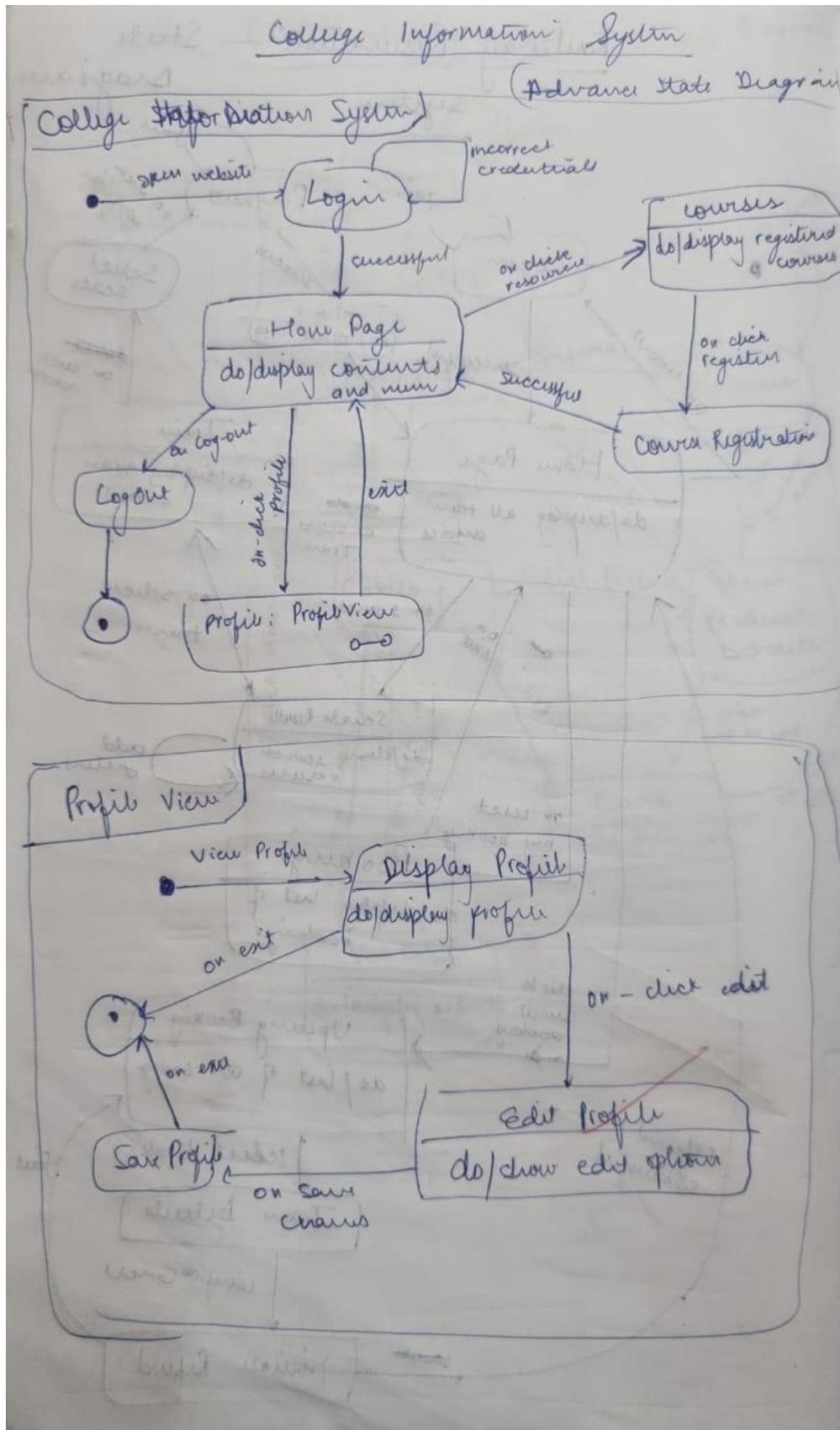
An ~~autonomous~~ <sup>automated</sup> ~~subtraction~~ system that allows user to access required information and stores required data.

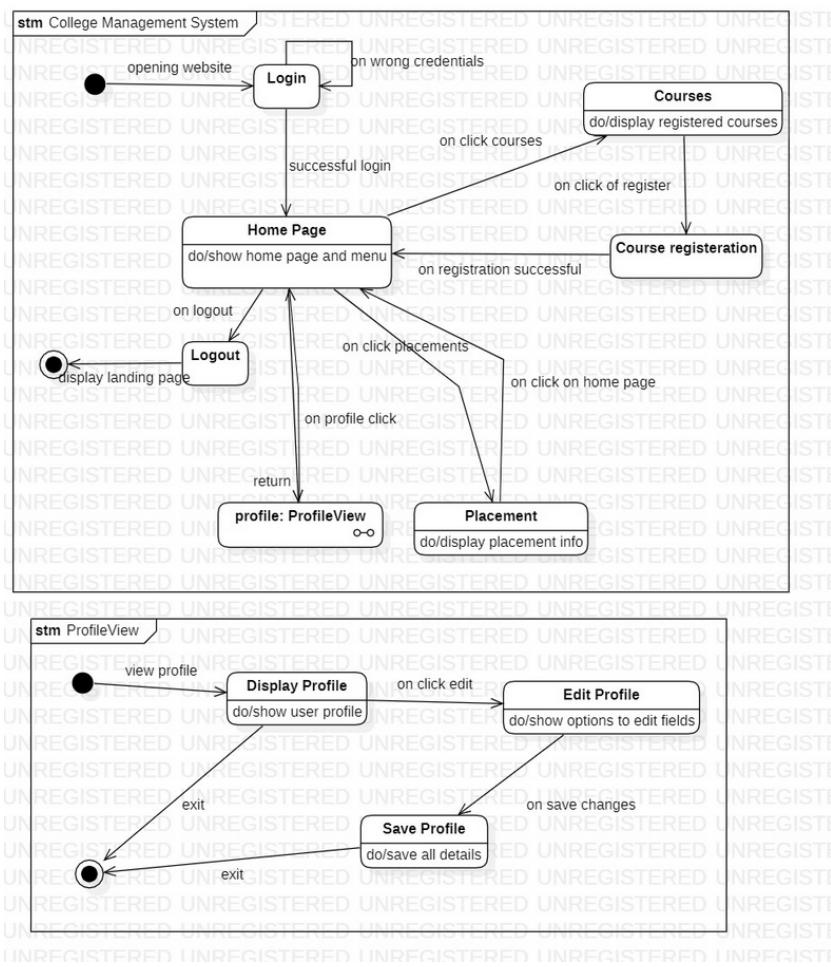
## **2. Draw the advanced class diagram**





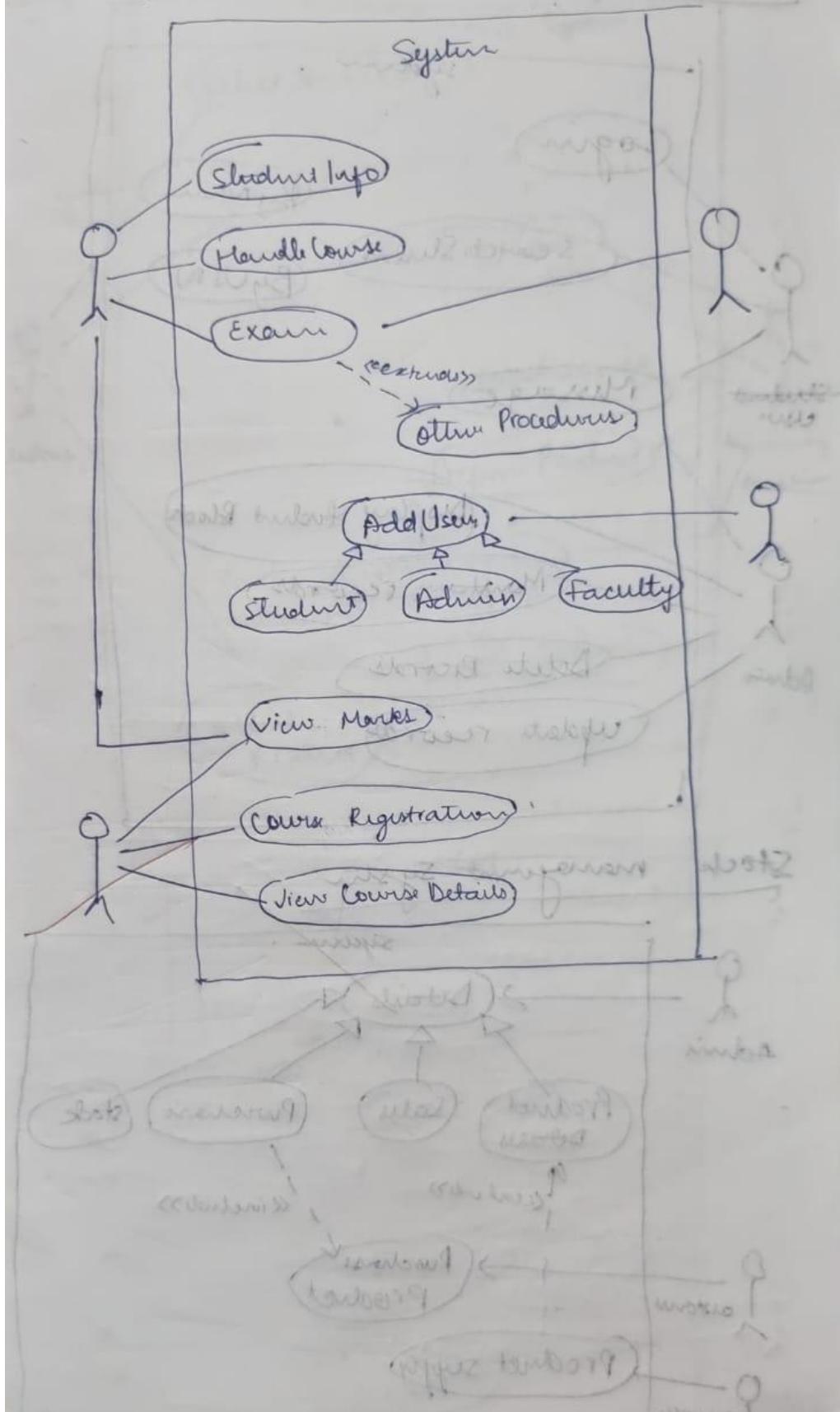
### 3. Draw the advanced state diagram

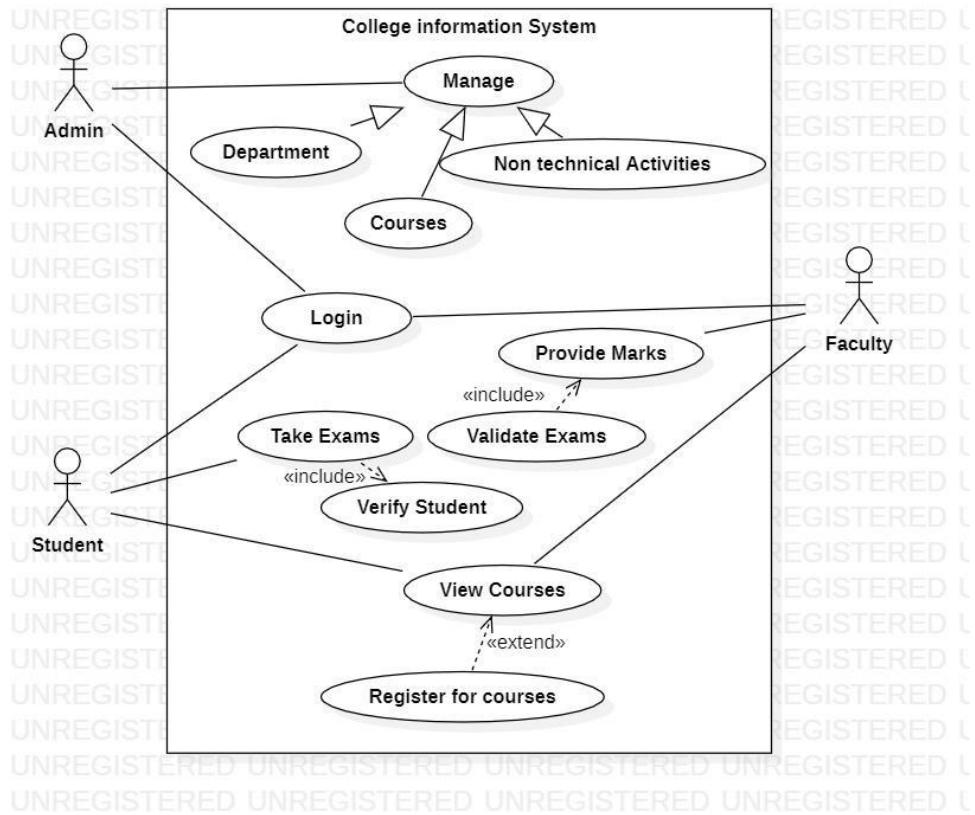




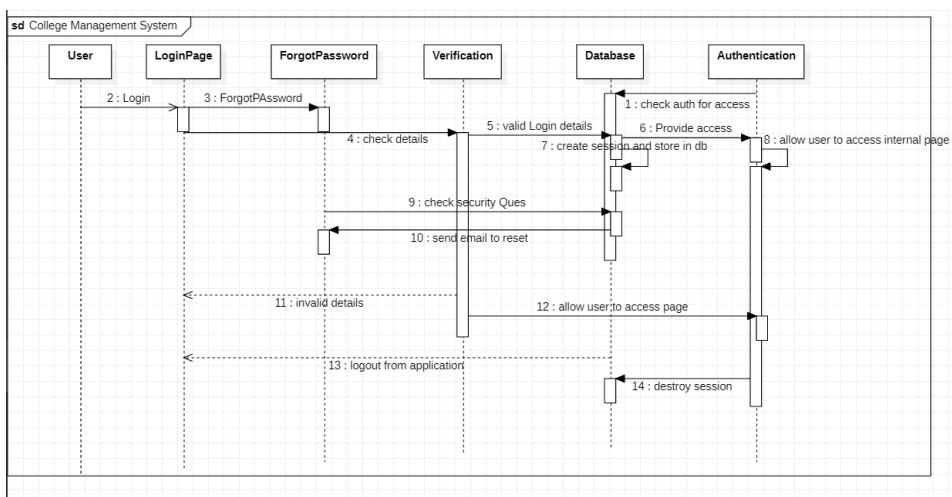
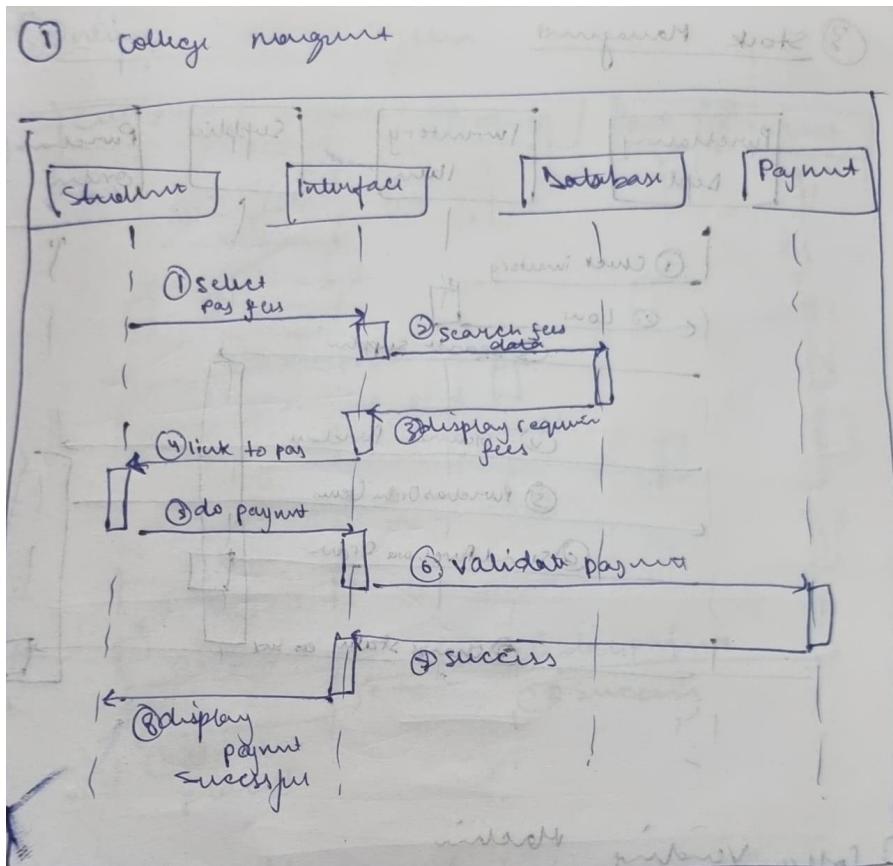
#### 4. Draw the advanced use case diagram

# College Information System





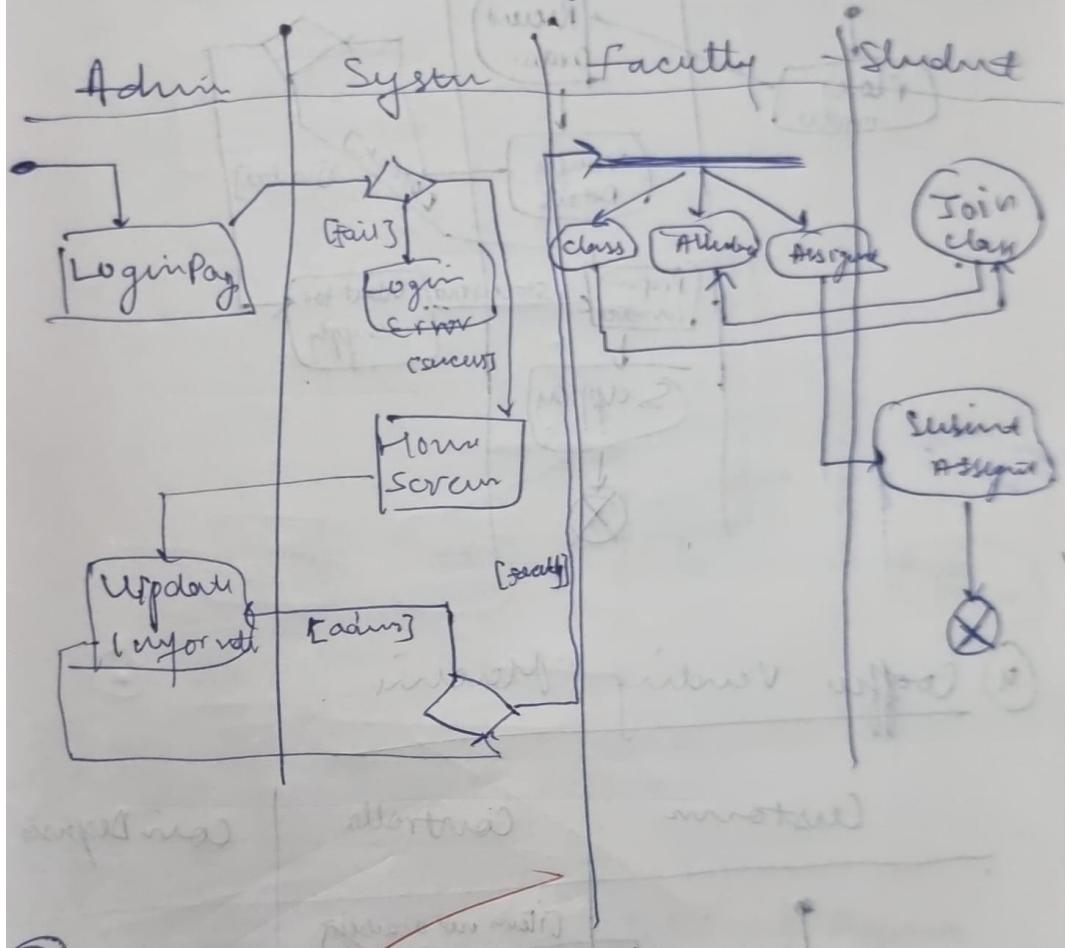
## 5. Draw the advanced sequence diagram

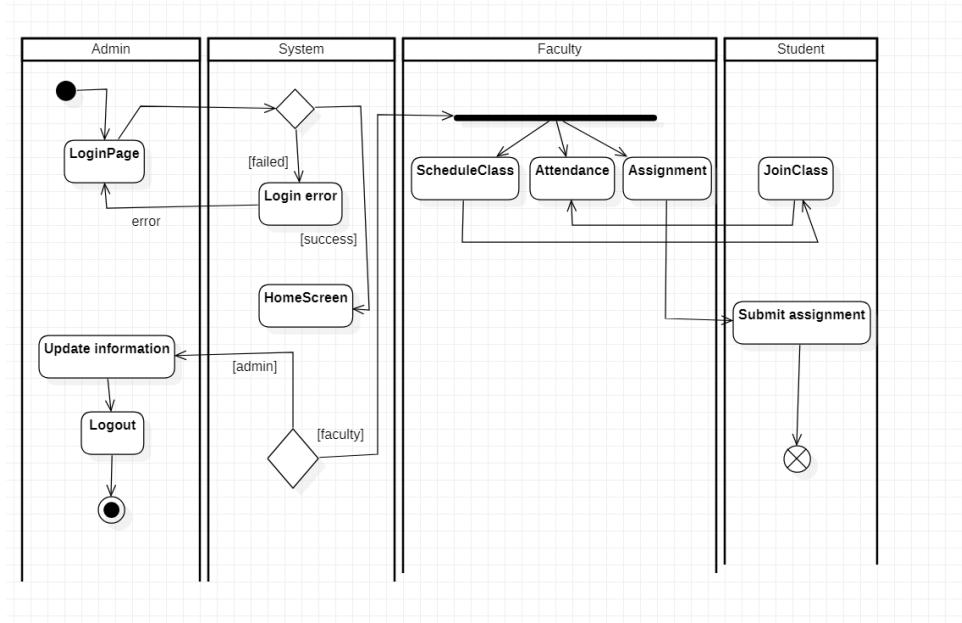


## 6. Draw the advanced activity diagram

## Activity Diagram

### ① College Management System





## Exercise 2: Hostel Management System

### 1. Write SRS

## Hostel Management System

→ system that takes care of day to day hostel activities and requirements.

### Secretary:

- Enter new student details.
- Edit and update student details

### St Warden:

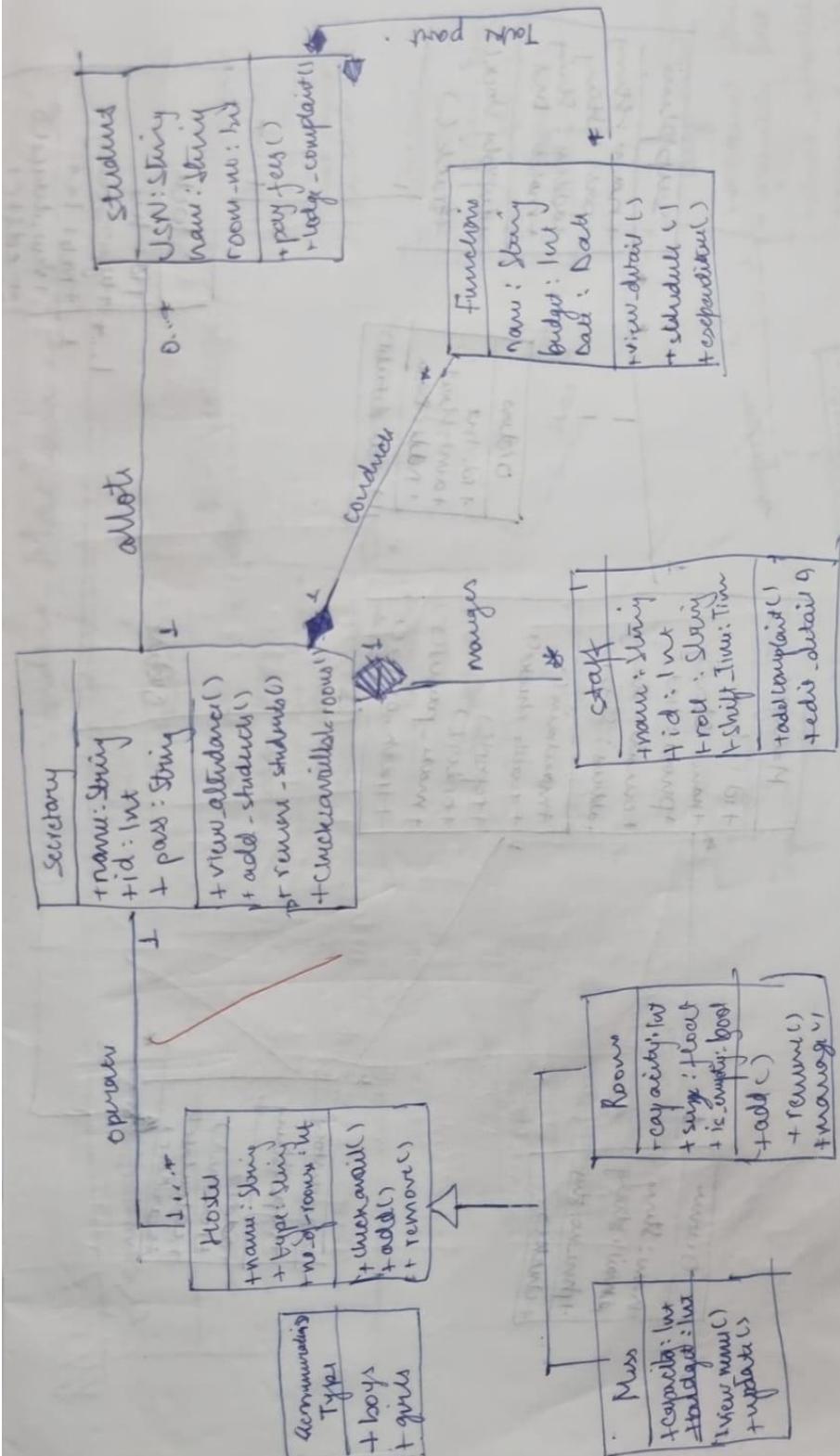
- Enter student attendance
- View students complaints
- View student details

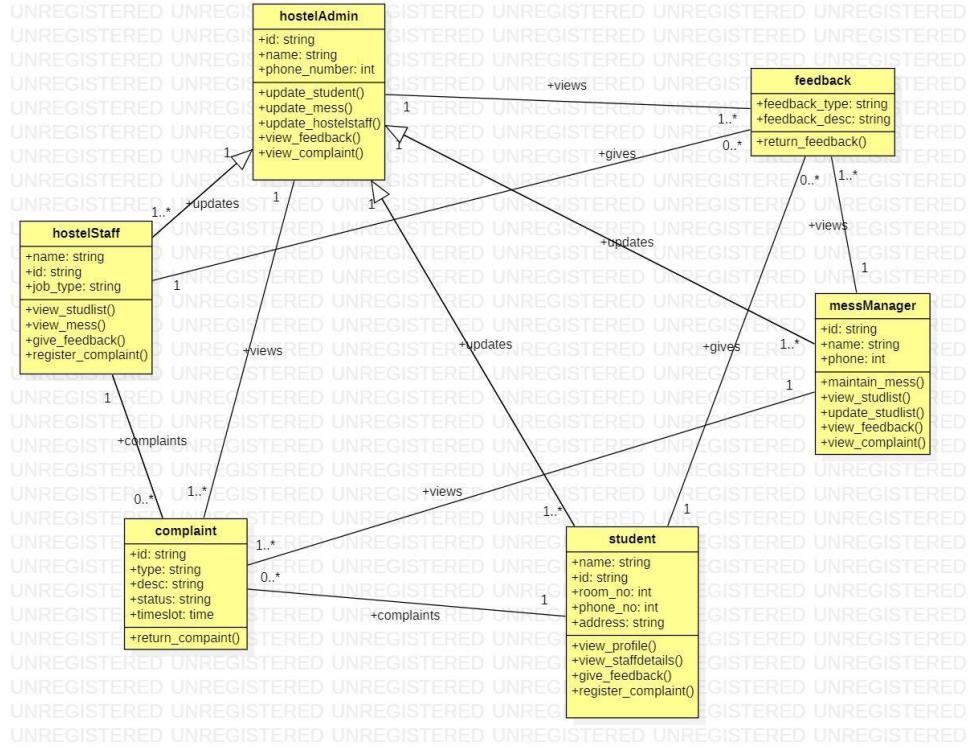
### Students:

- suggest mess changes
- complaints such as fan not working etc
- Leave application

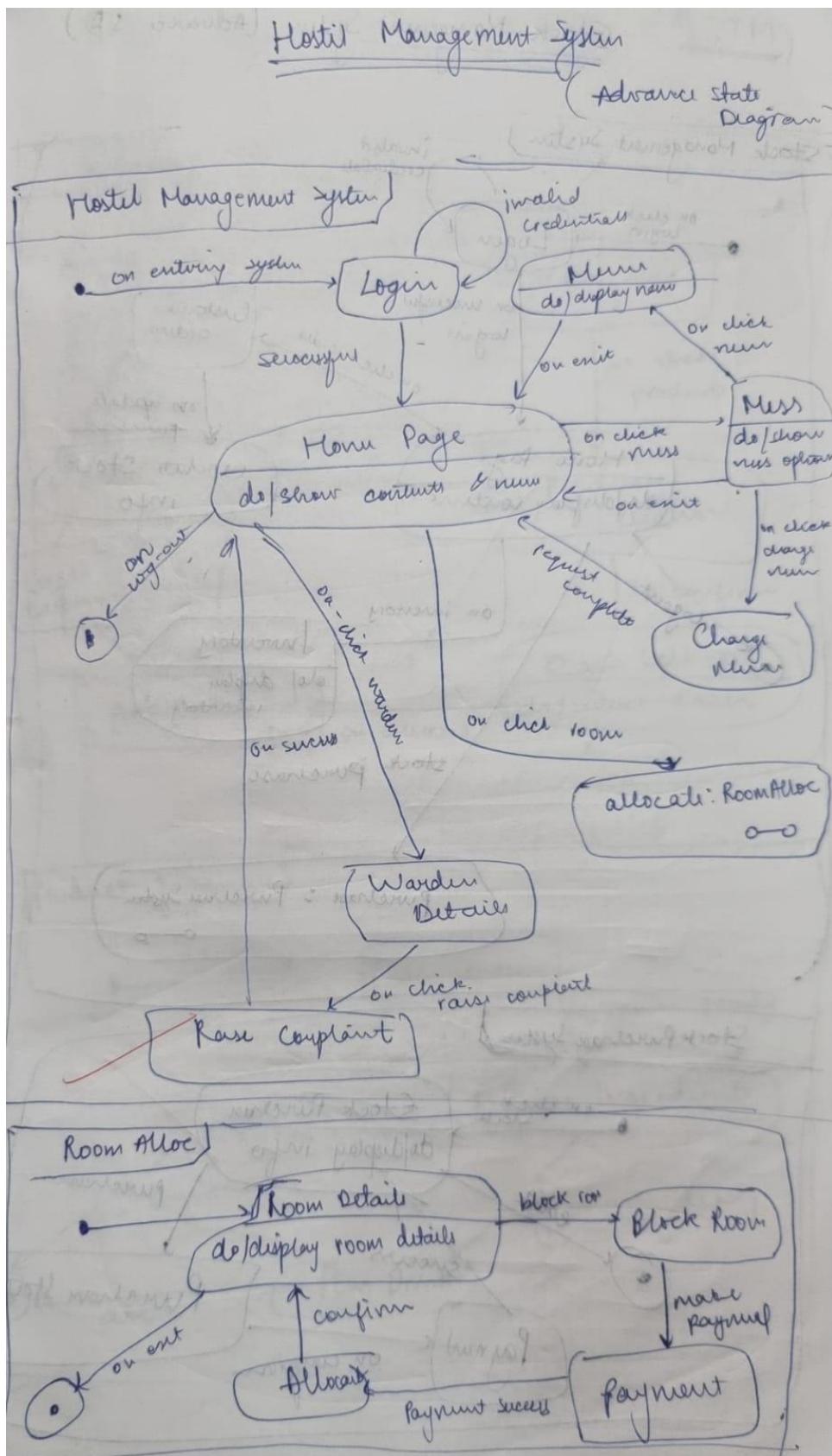
## 2. Draw the advanced class diagram

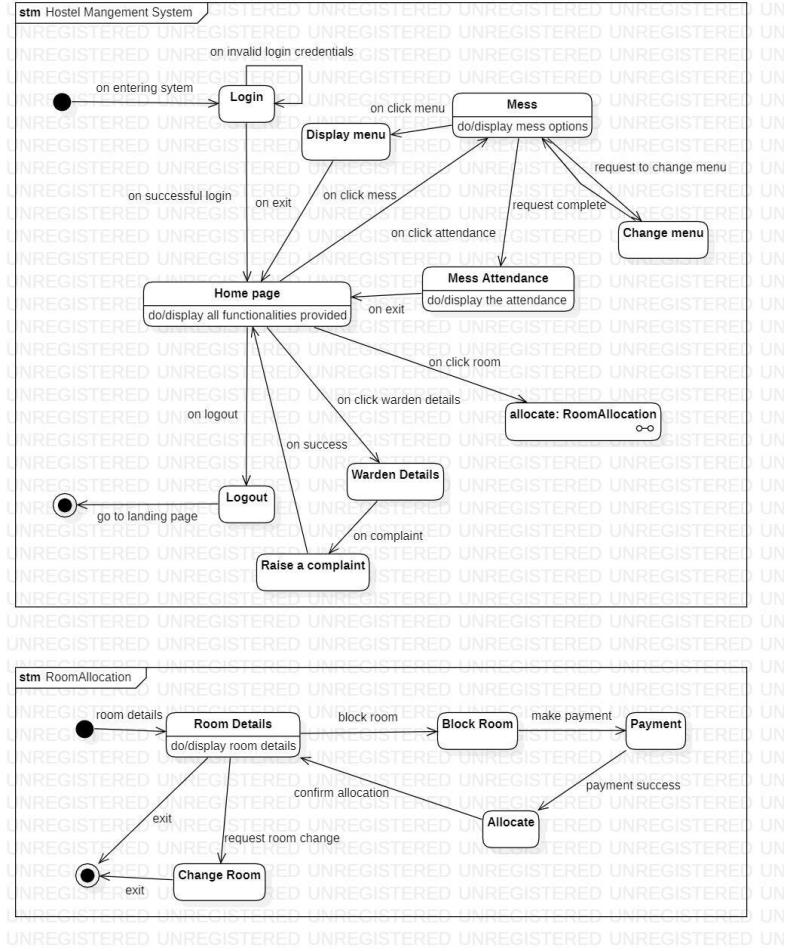
## Hostile Management System





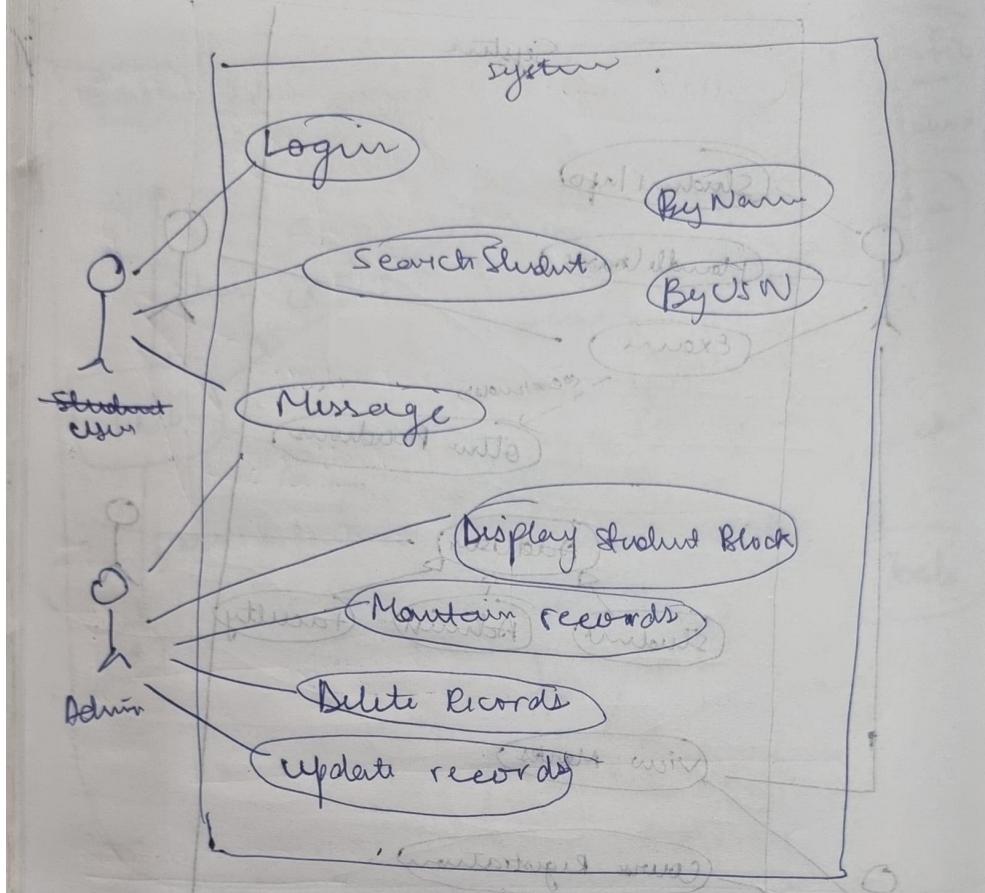
### 3. Draw the advanced state diagram

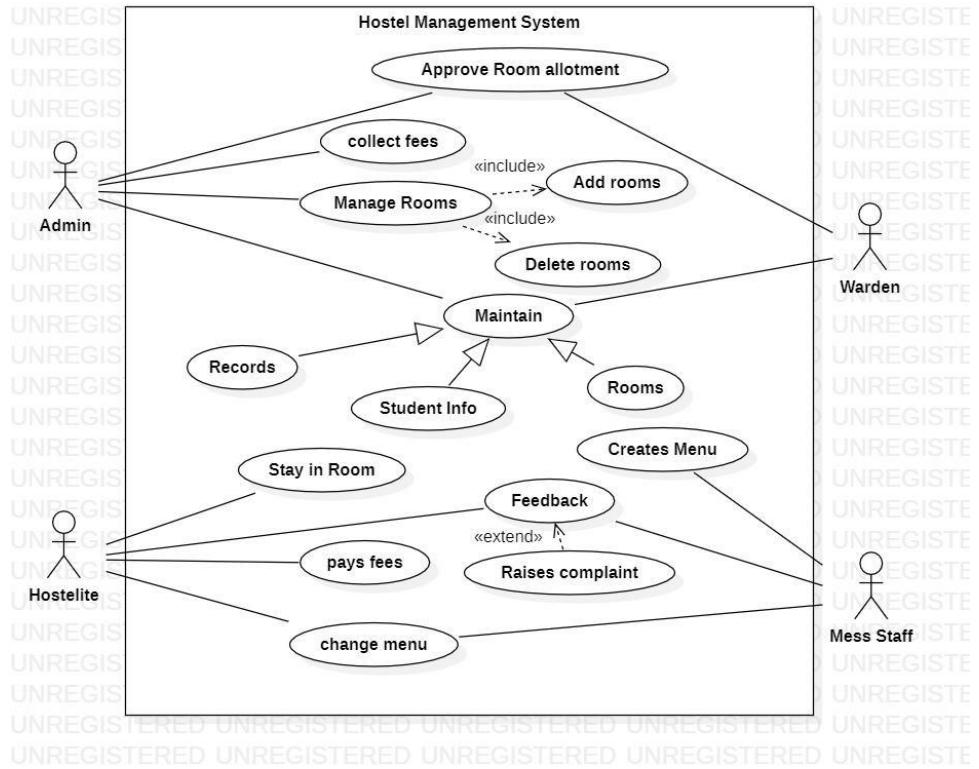




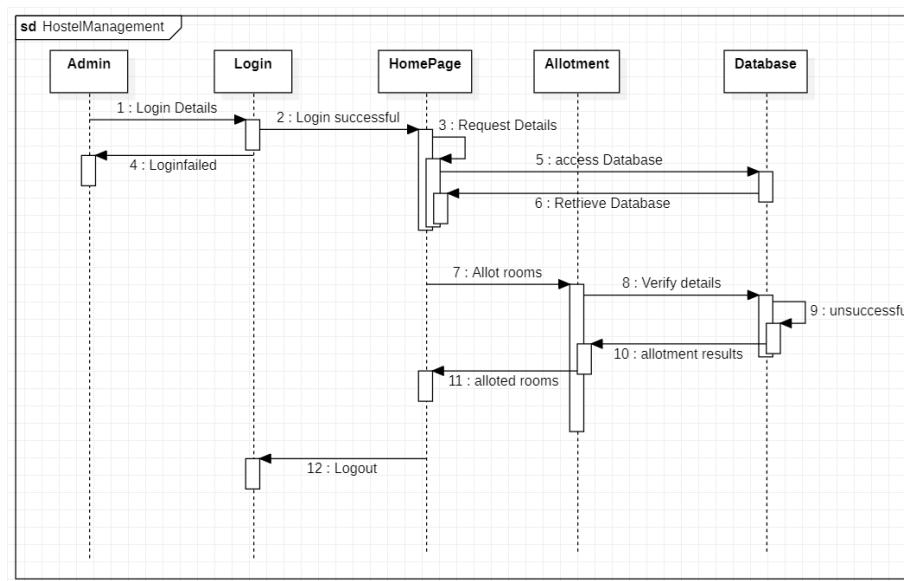
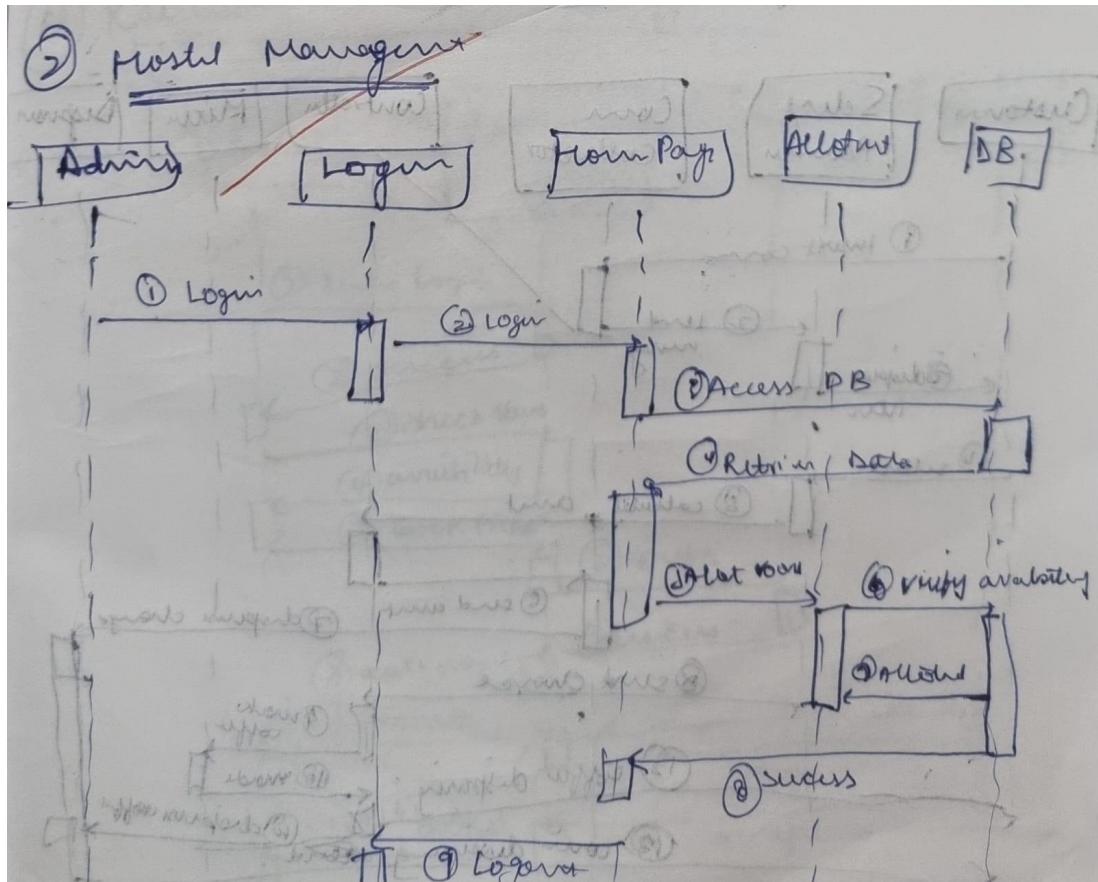
#### 4. Draw the advanced use case diagram

## Hostel Management (case case)

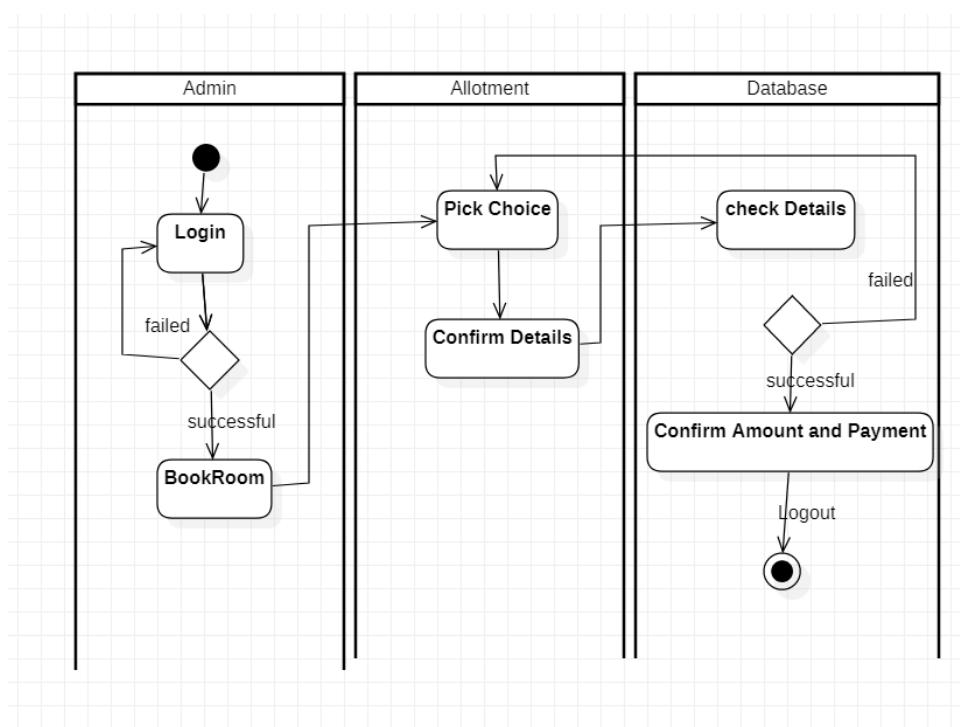
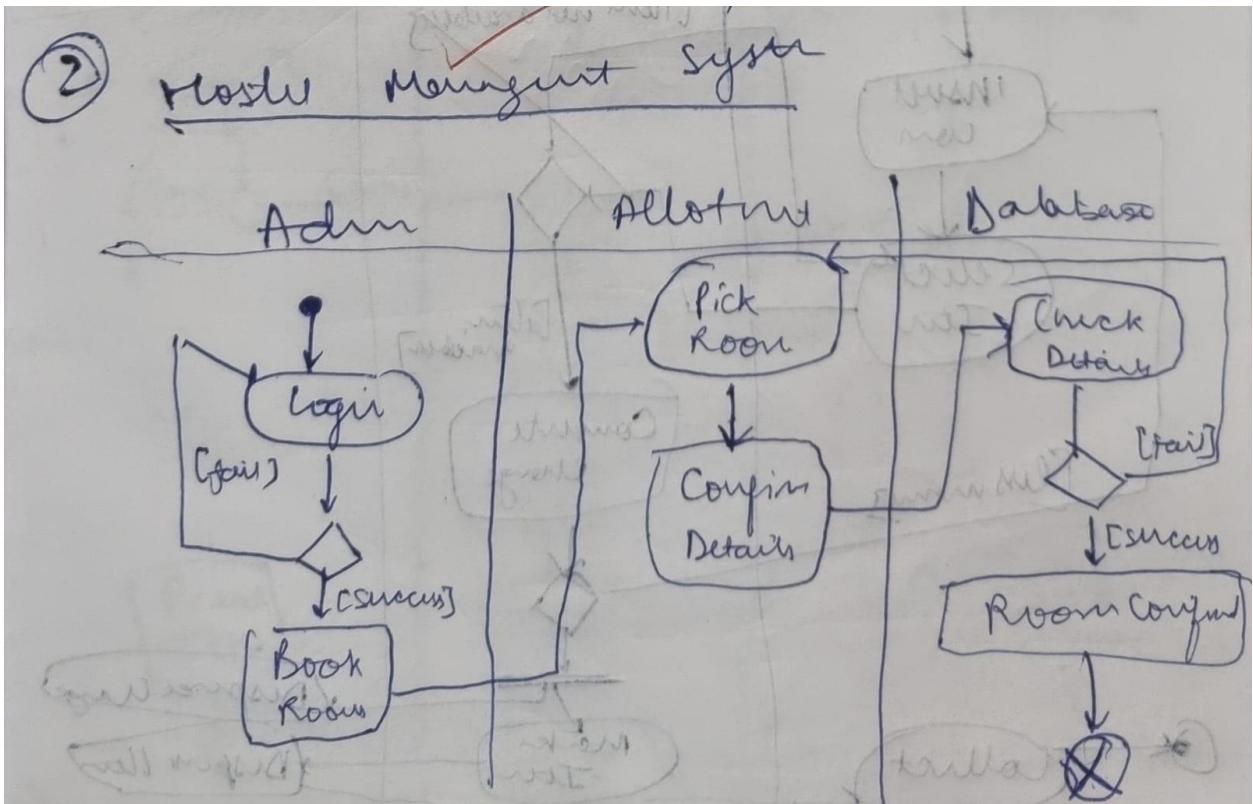




## 5. Draw the advanced sequence diagram

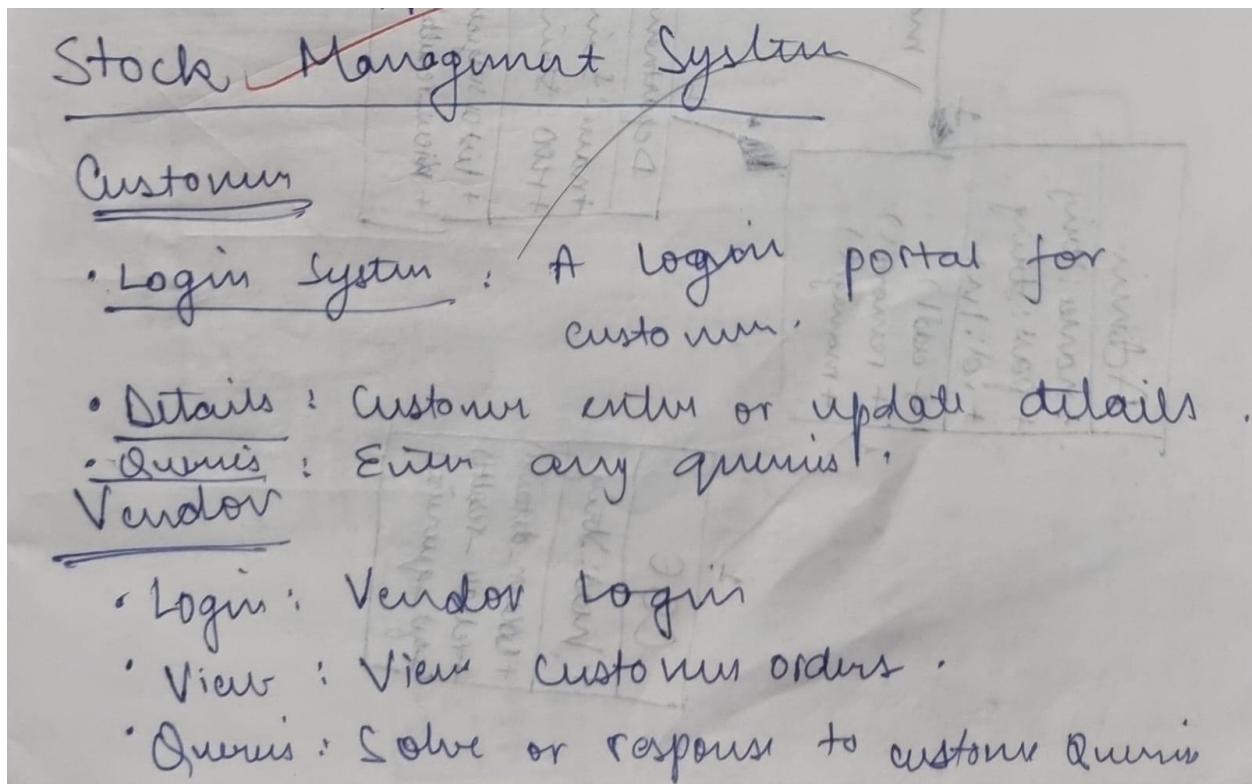


## 6. Draw the advanced activity diagram



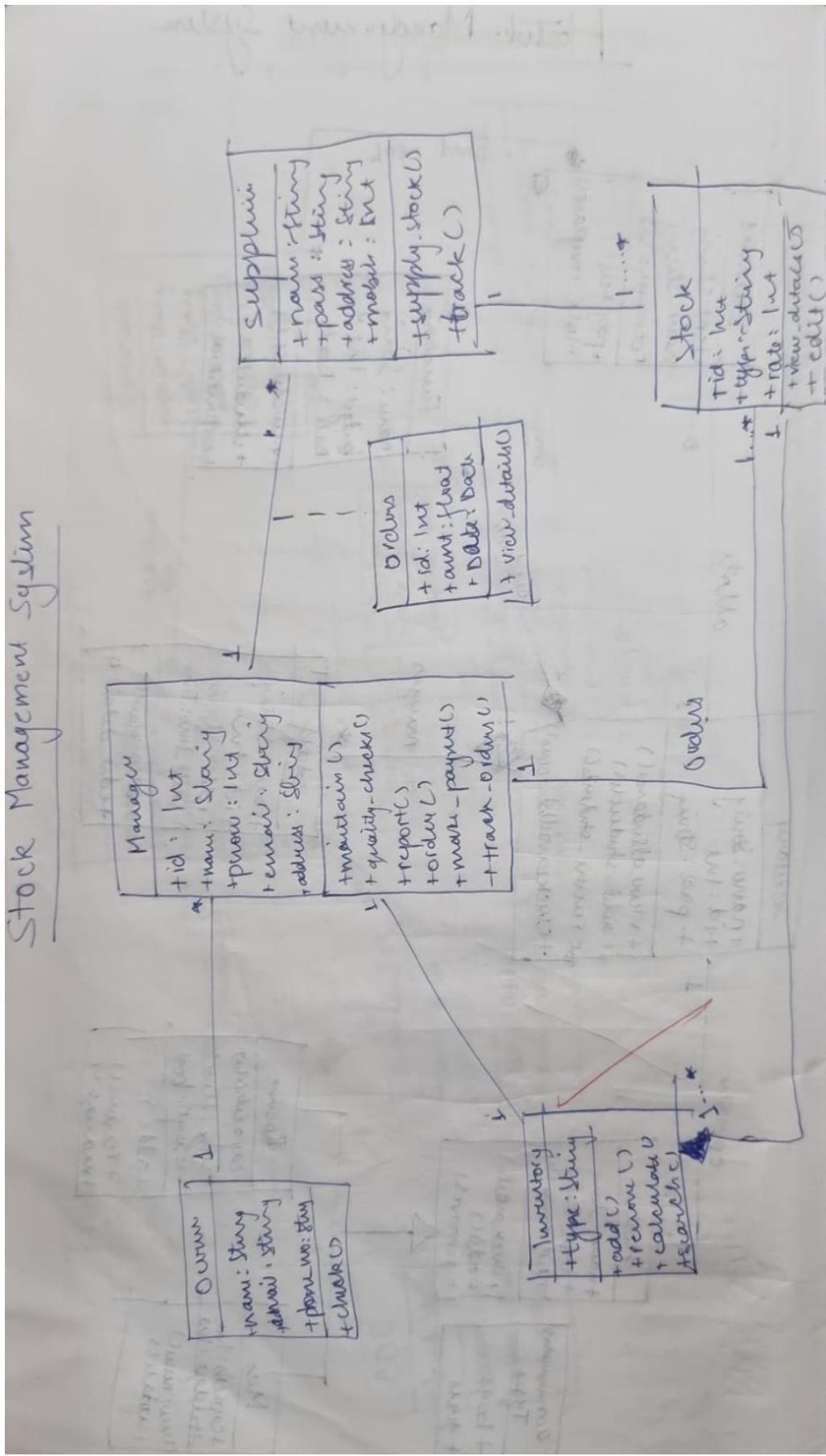
## **Exercise 3: Stock Management System**

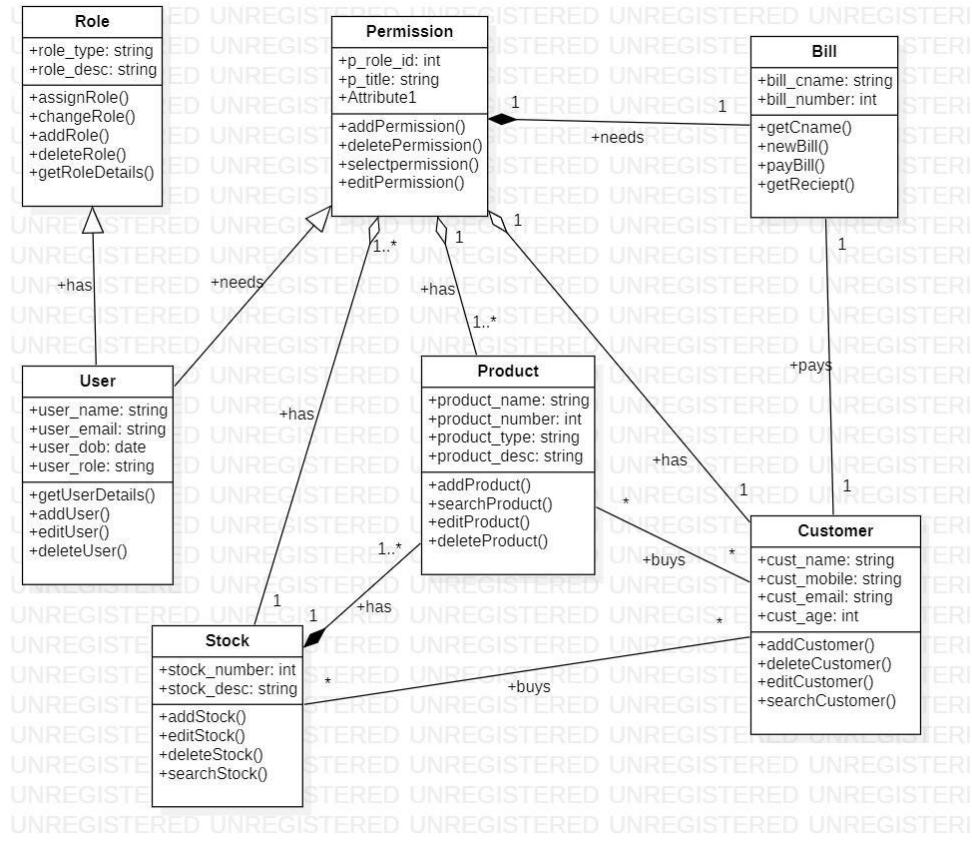
### **1. Write SRS**



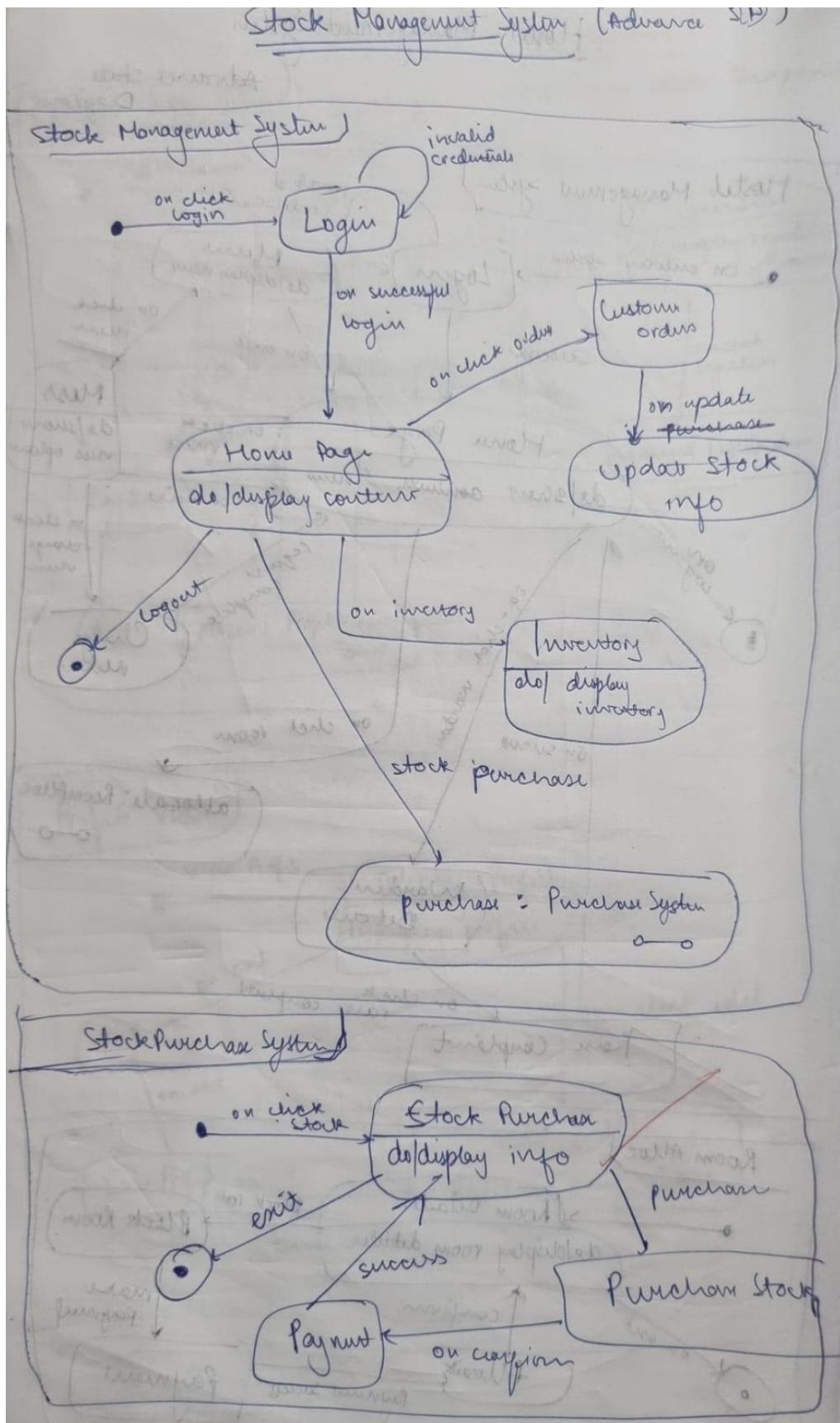
### **2. Draw the advanced class diagram**

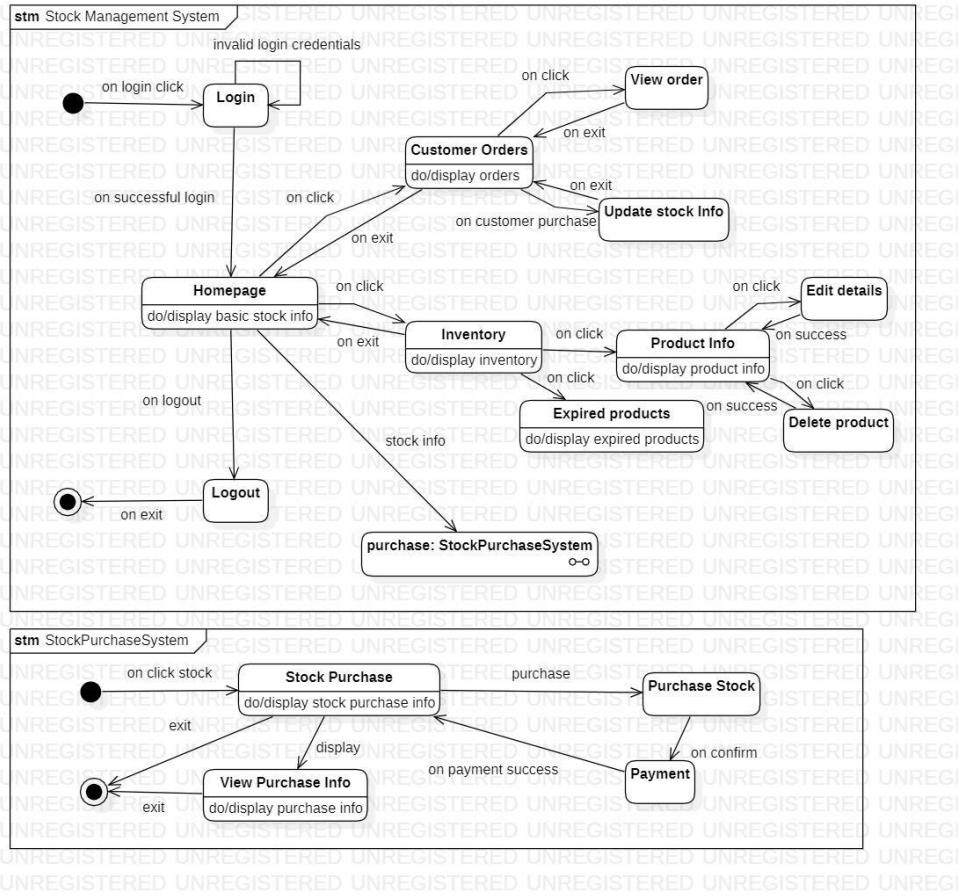
## Stock Management System



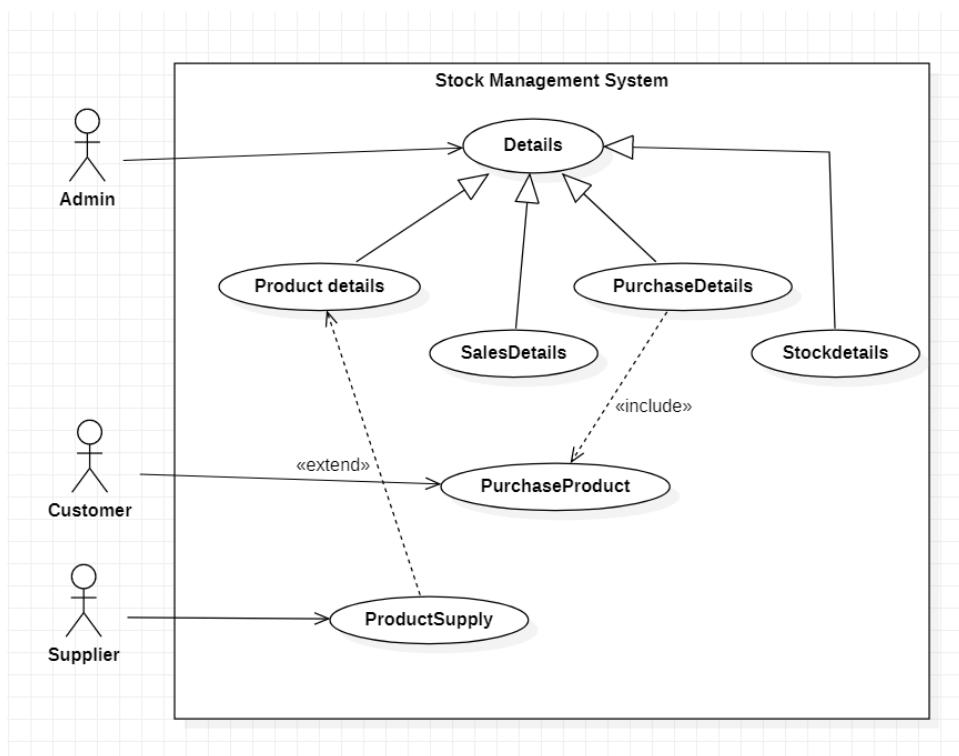
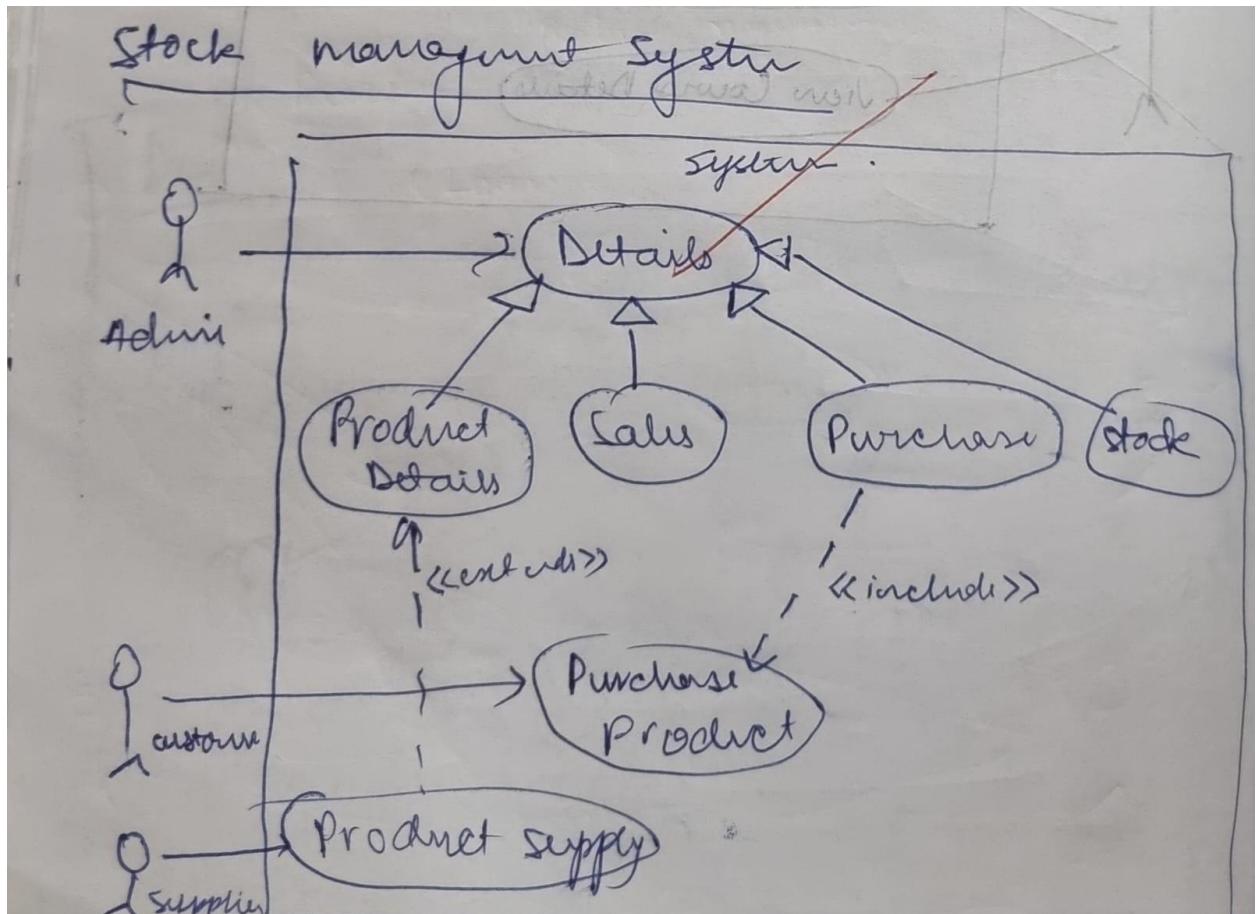


### 3. Draw the advanced state diagram

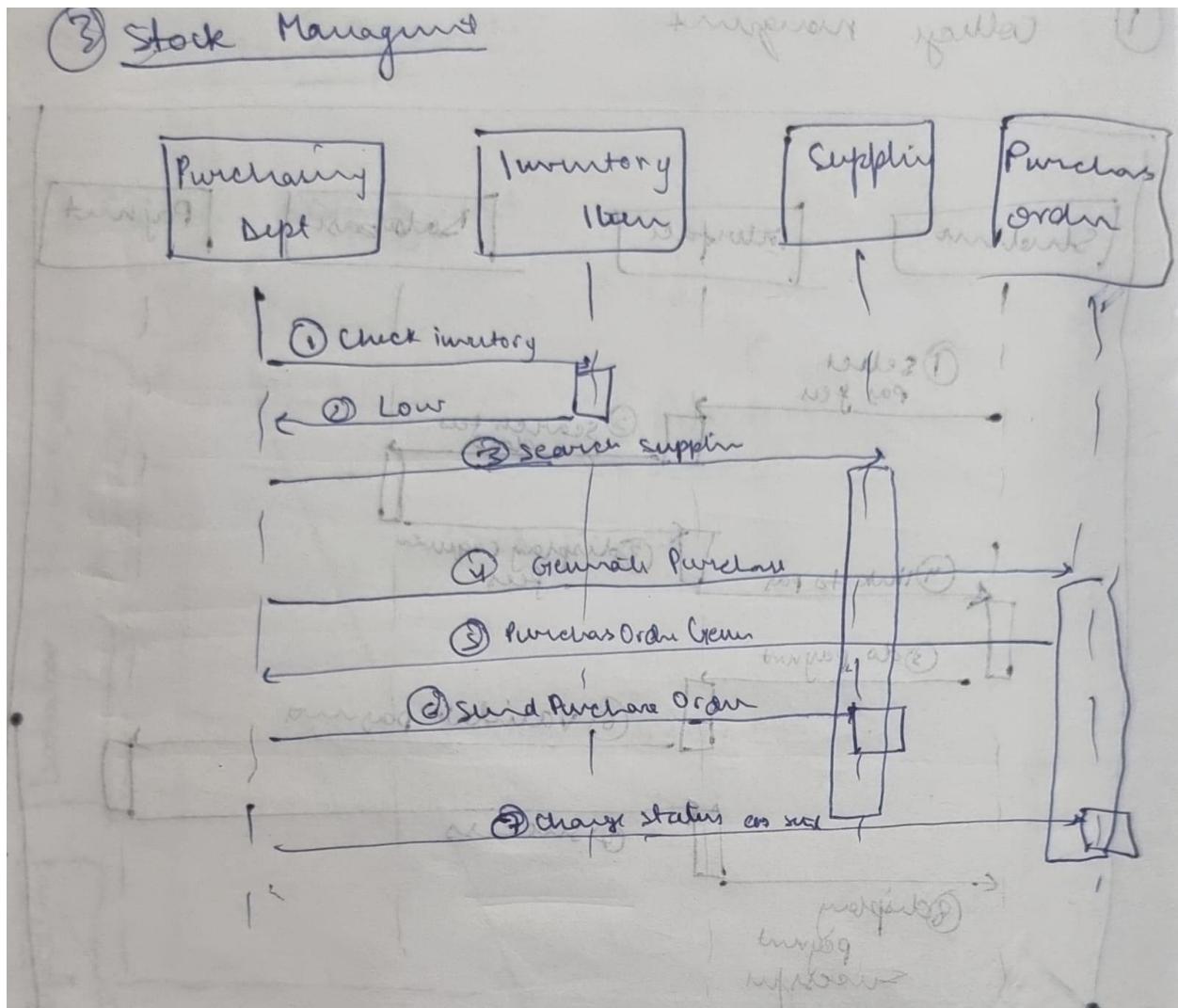


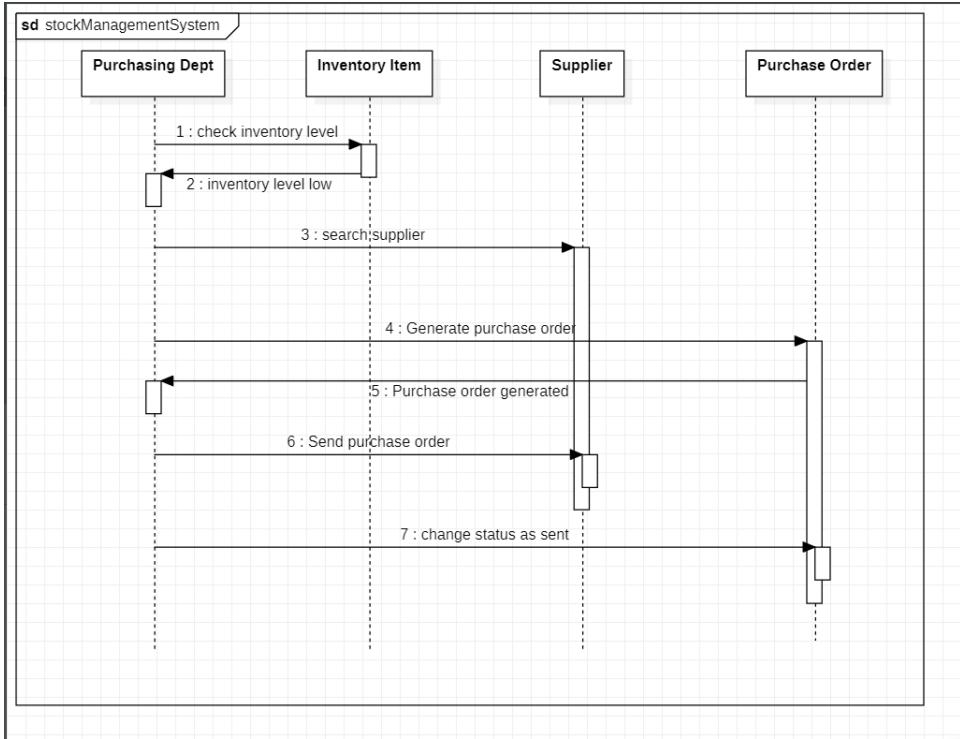


#### 4. Draw the advanced use case diagram



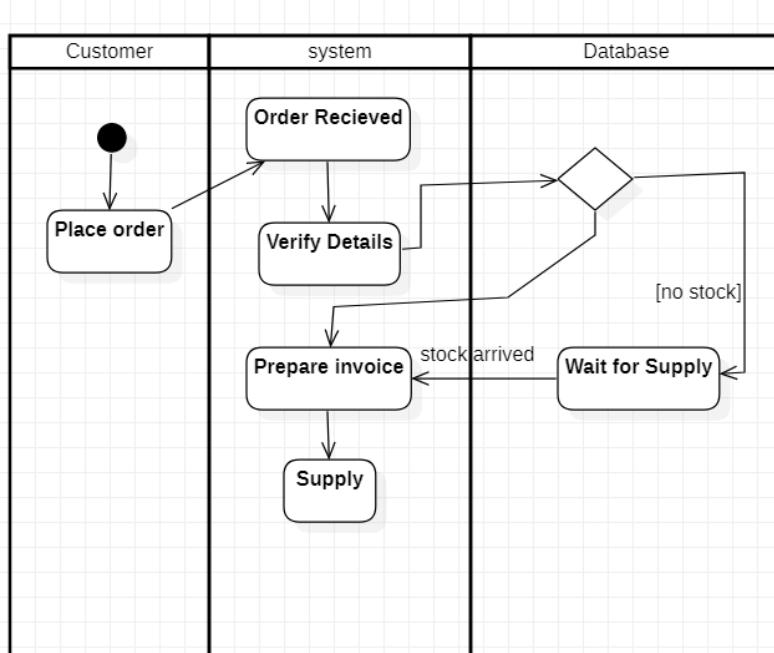
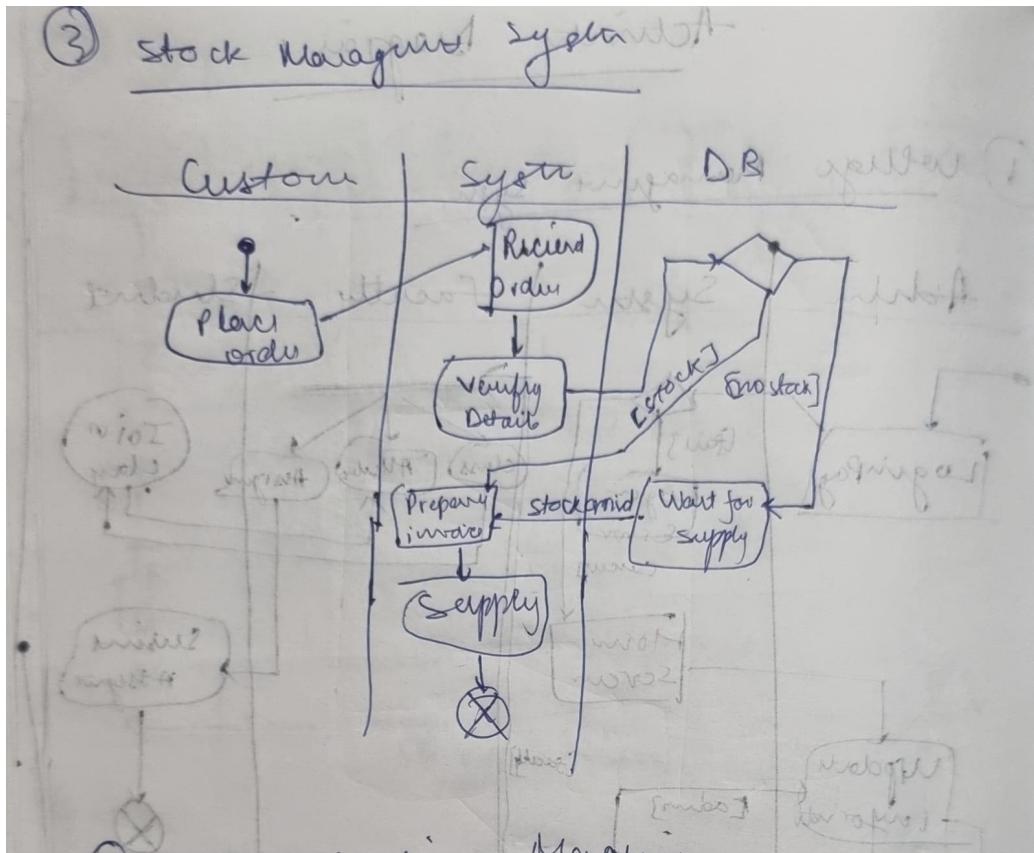
## 5. Draw the advanced sequence diagram





## 6. Draw the advanced activity diagram

### ③ stock Management System



## **Exercise 4: Coffee Vending Machine**

### **1. Write SRS**

## Coffee Vending Machine (SRCS)

### ① Controller:

Controls the whole system & takes care of tasks.

- no. of products dispensed
- show menu()
- collect amount()
- check availability()

### ② Amount Collector:

Takes care of amount collection:

- amount
- status
- collect money()
- update status()

### ③ Product Dispenser:

Responsible for dispensing product

### ④ Products:

Lets different products

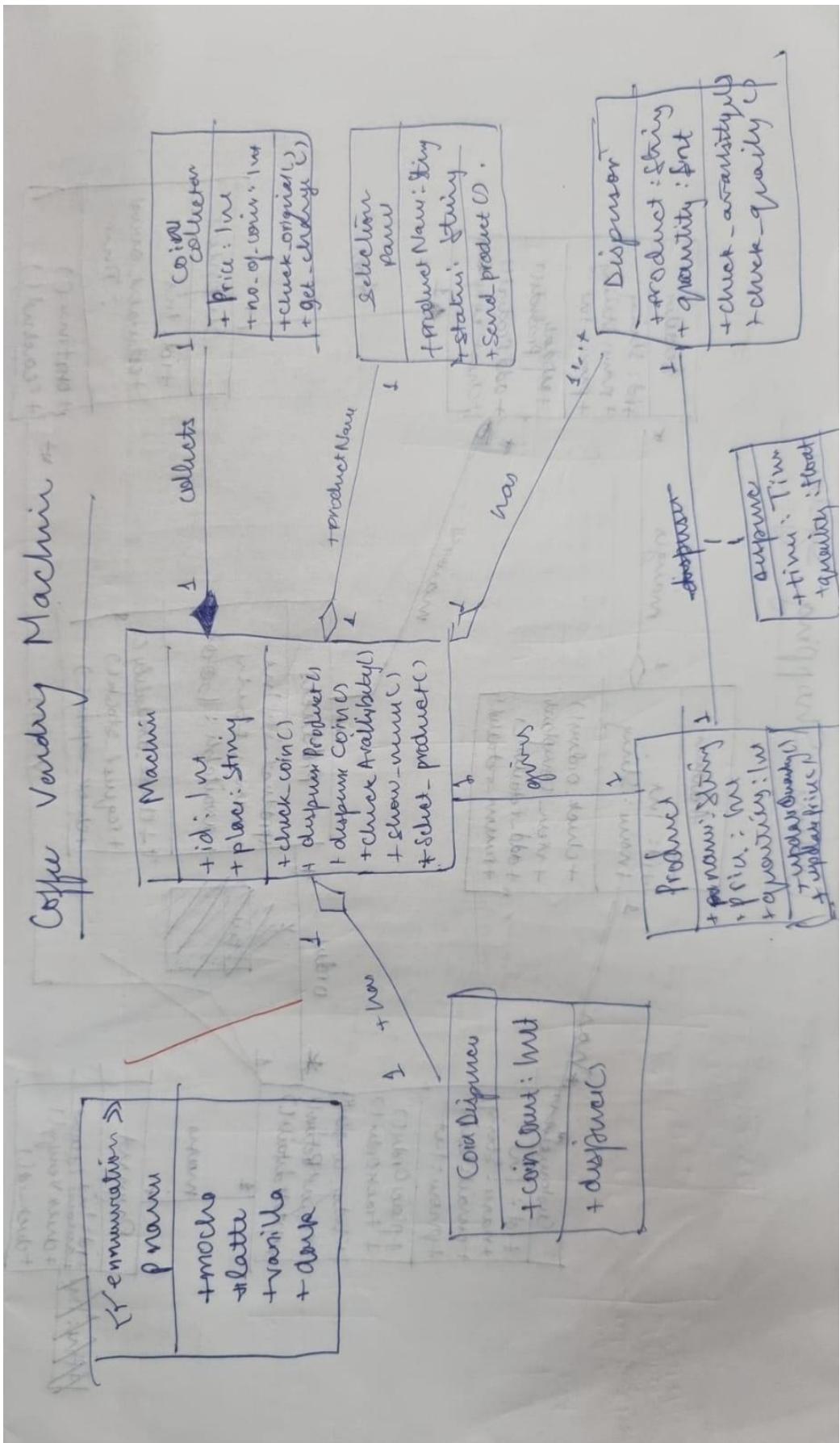
### ⑤ Product Selection:

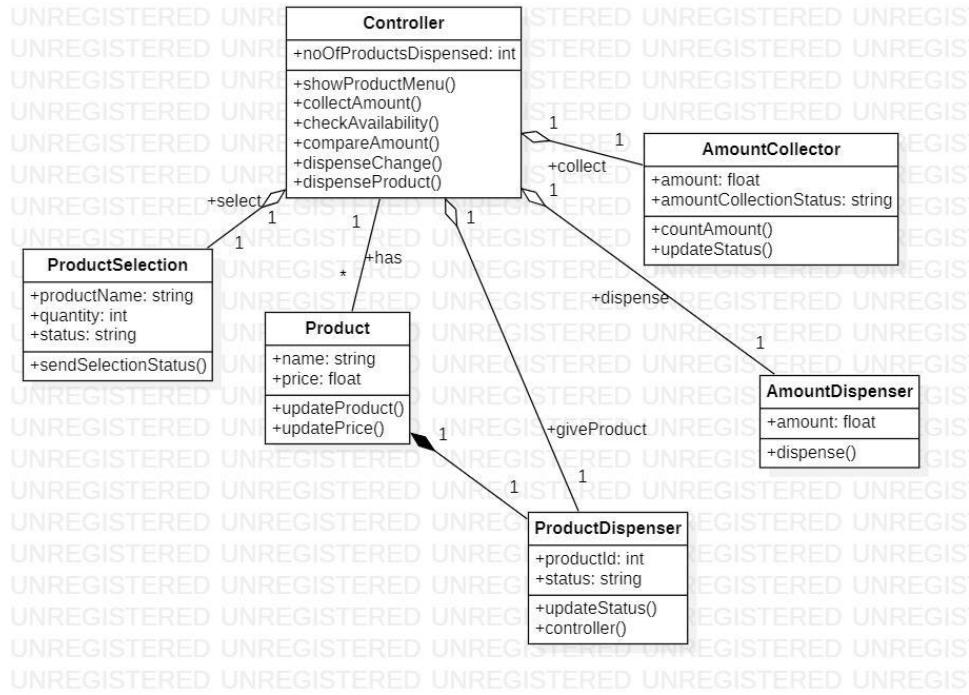
Handles the product selection

→ products by the user.

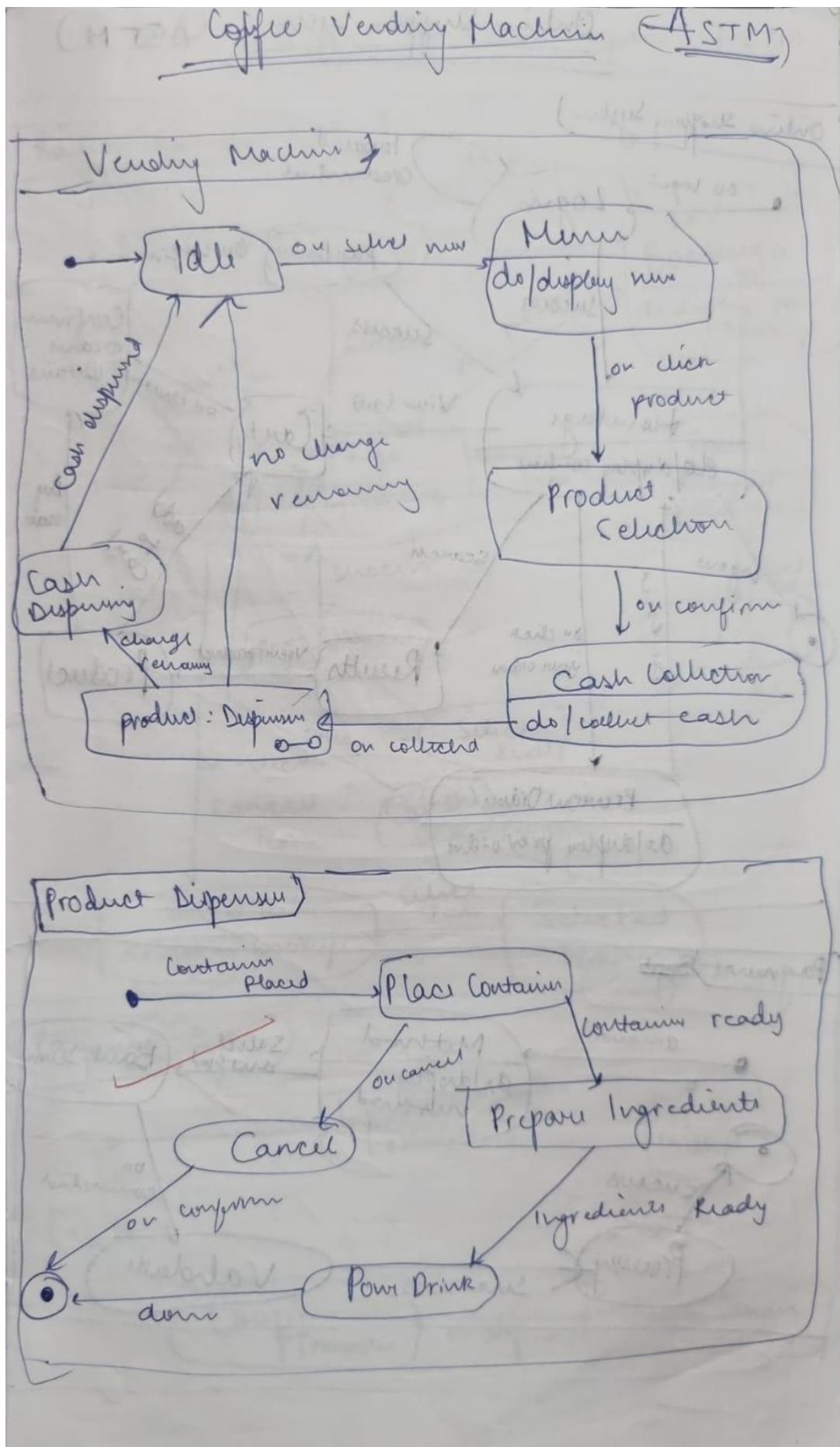
Problem Statement: An automated machine that handles user orders and dispense the correct order.

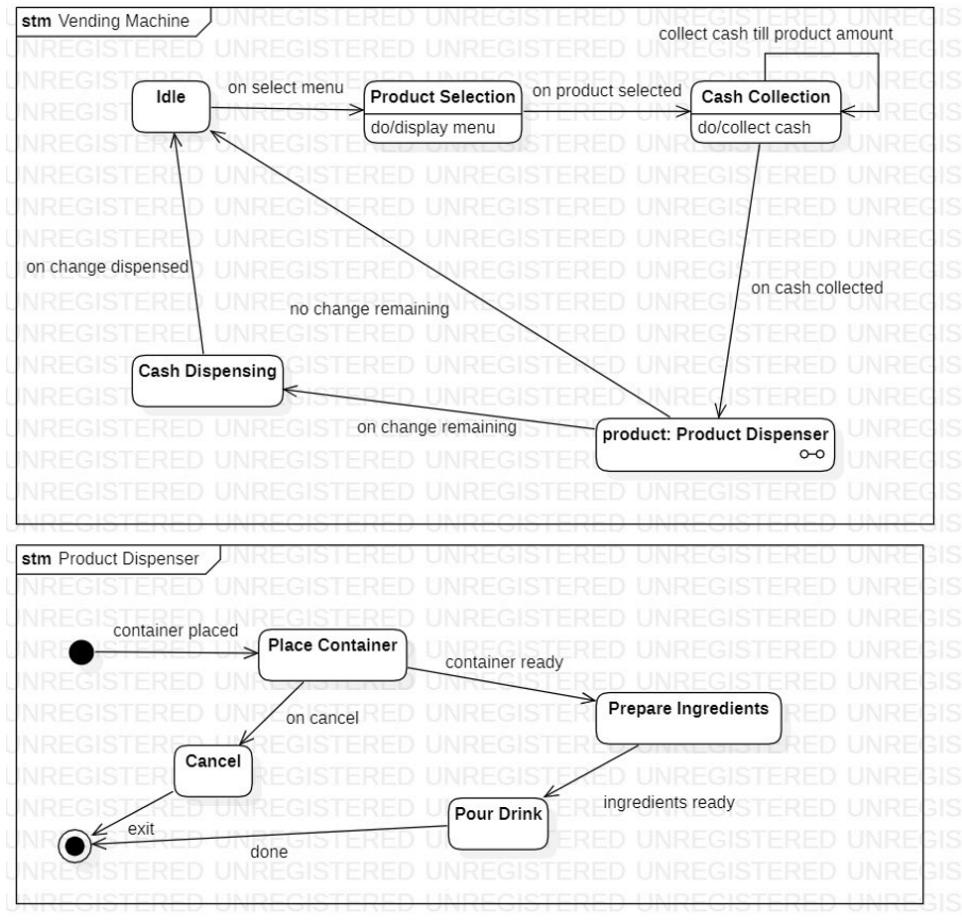
**2. Draw the advanced class diagram**



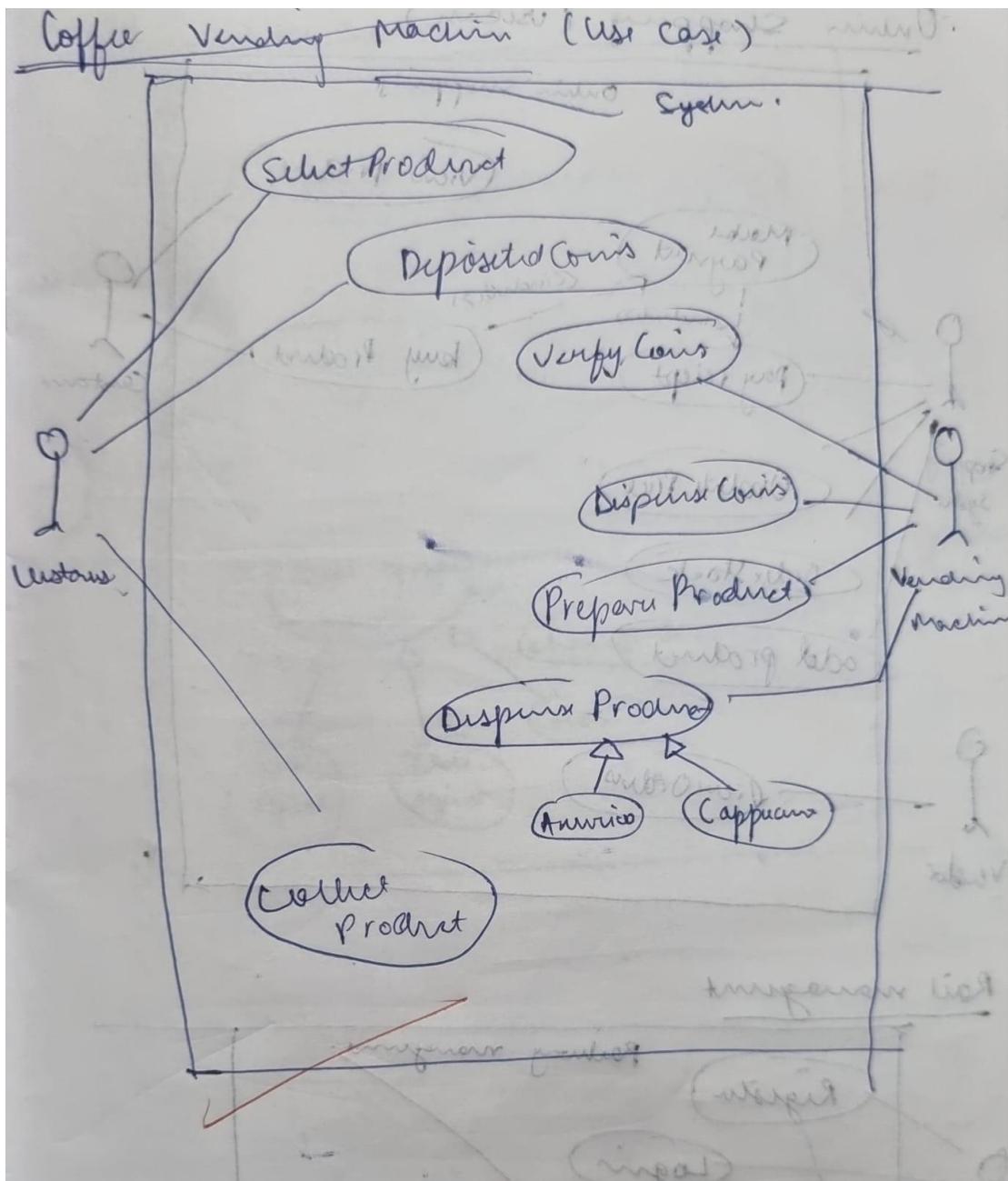


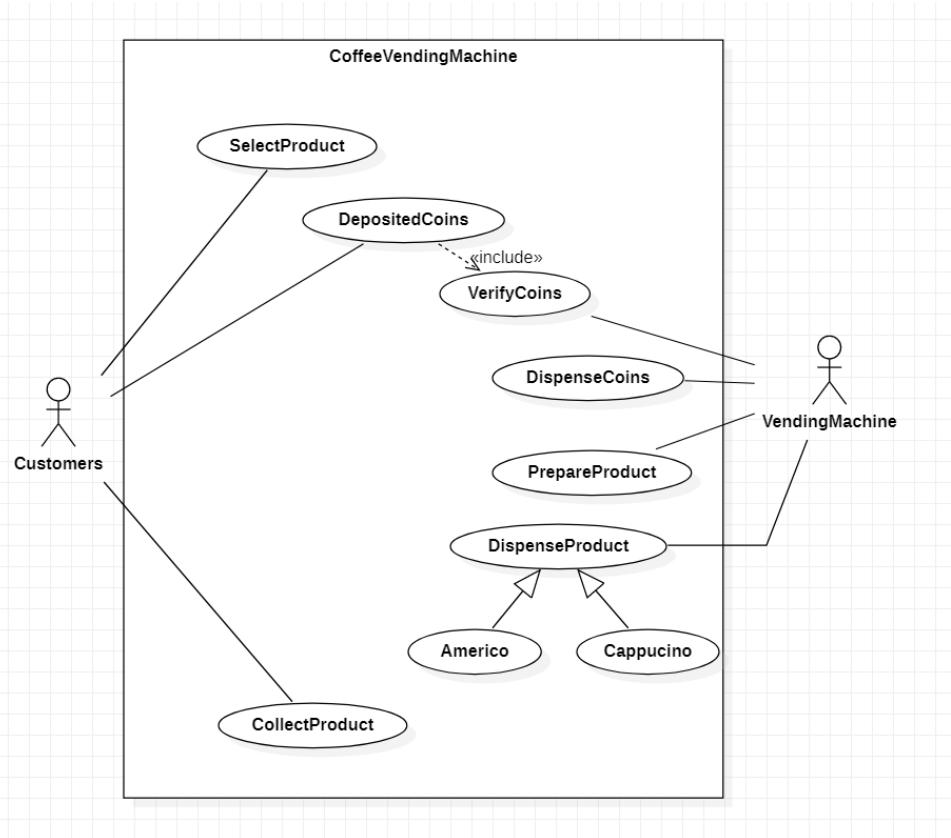
### 3. Draw the advanced state diagram



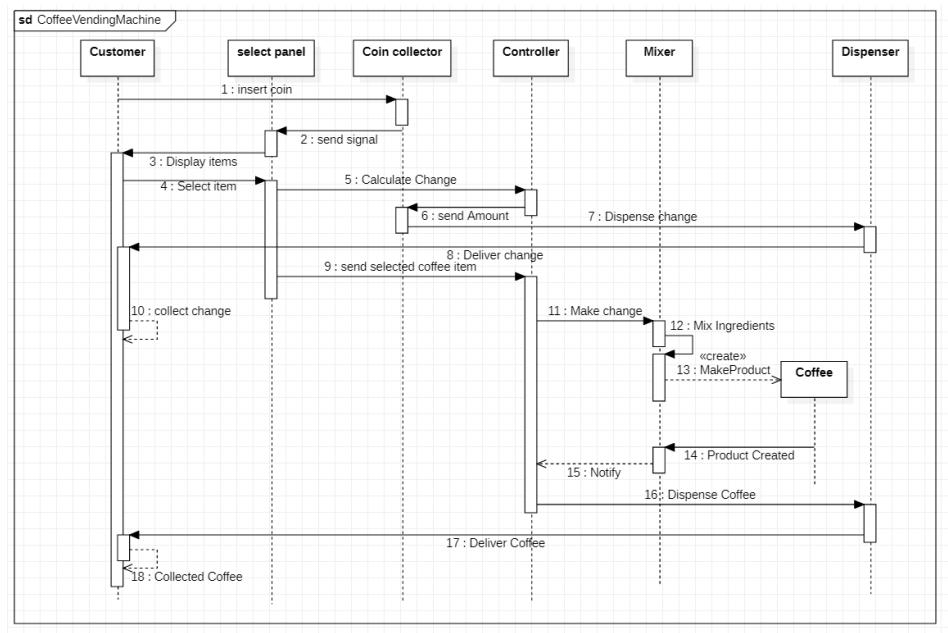
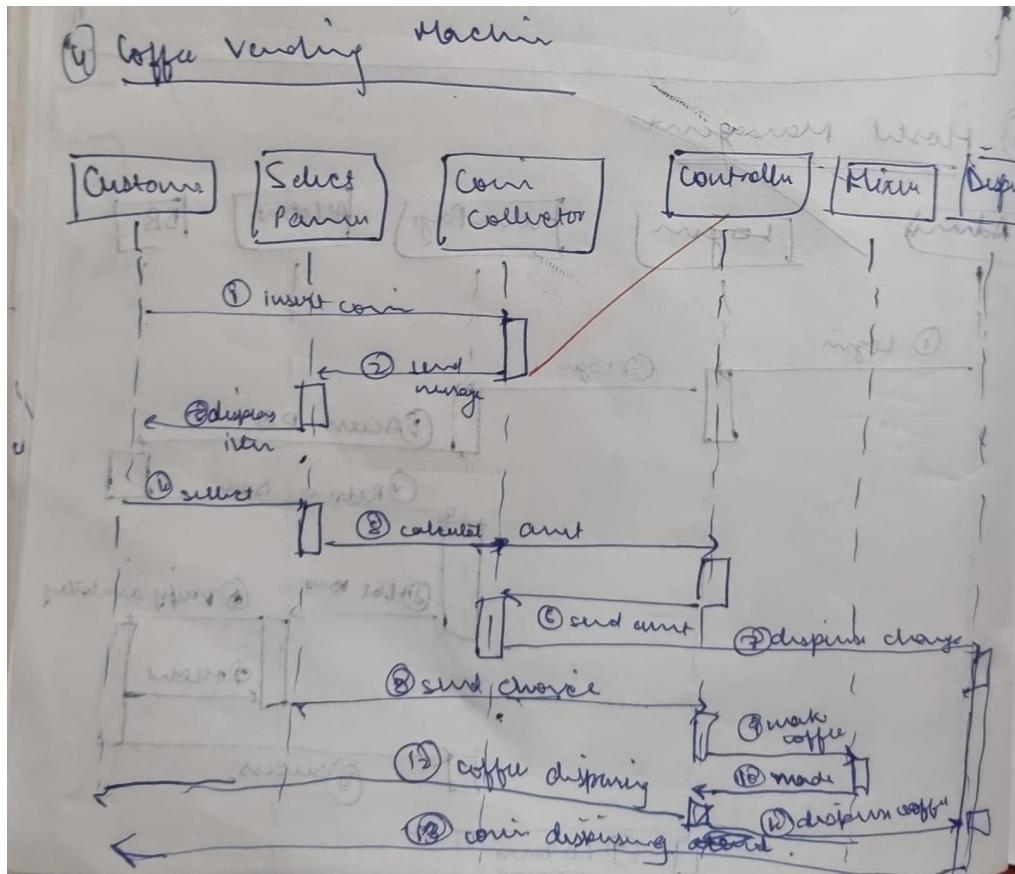


#### 4. Draw the advanced use case diagram

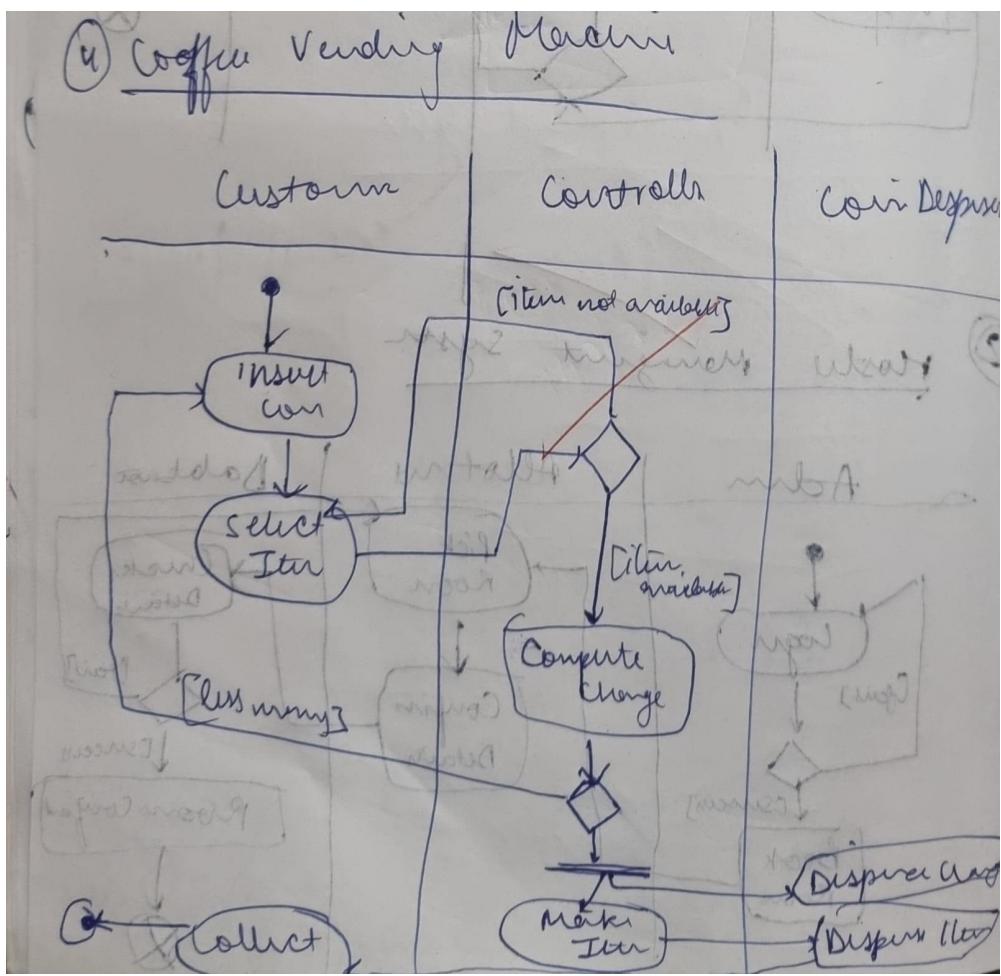


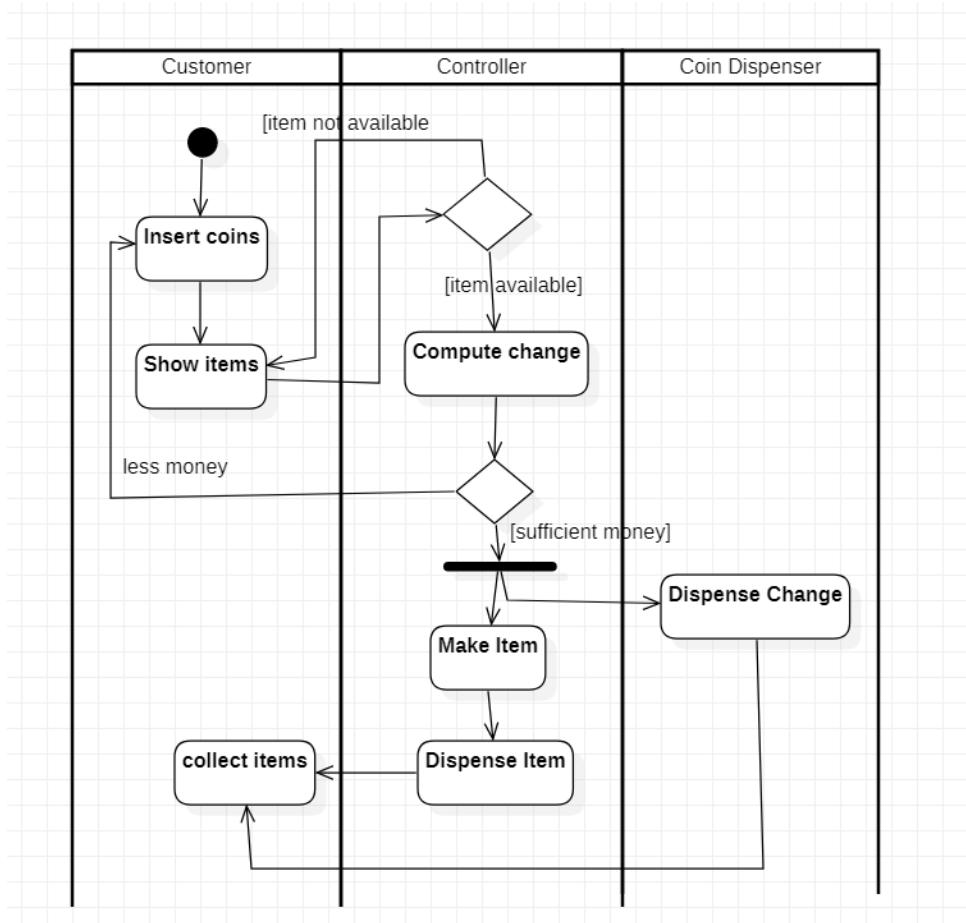


## 5. Draw the advanced sequence diagram



## 6. Draw the advanced activity diagram





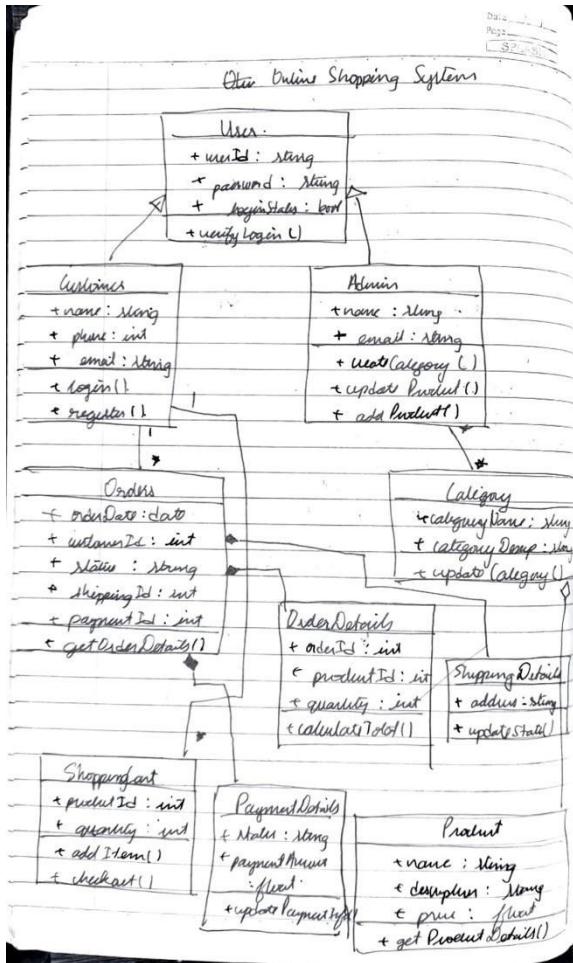
## Exercise 5: Online Shopping System

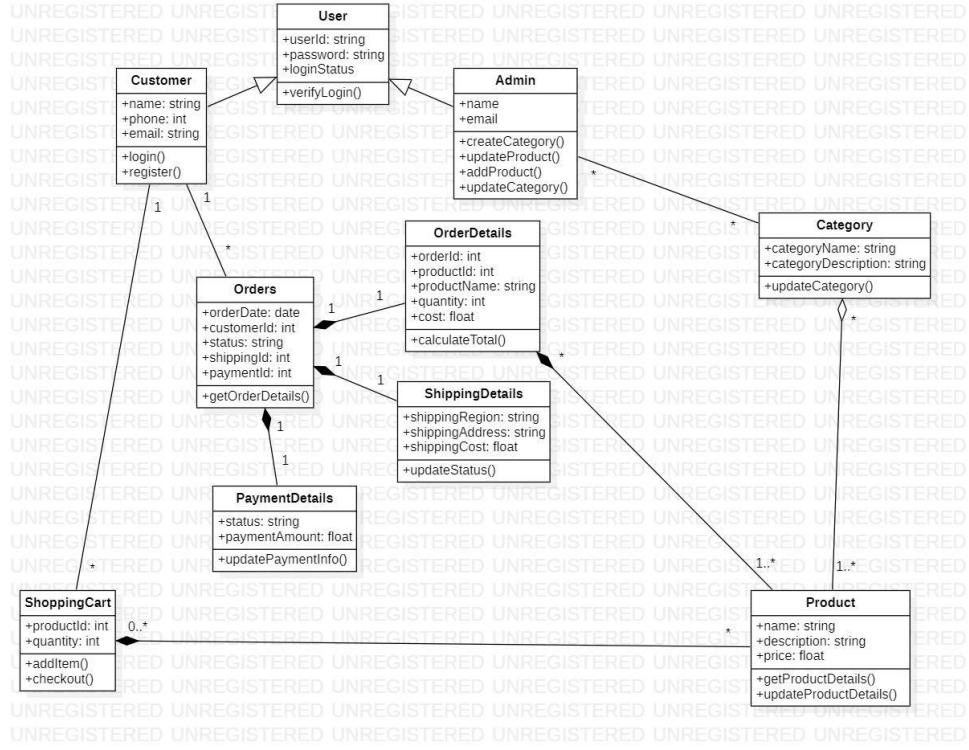
### 1. Write SRS

### Online Shopping Systems.

- \* Admin handles actions like create and delete items, departments. Admin can view catalog details and update new product details and also manage customers.
- \* Customers can login and register to the system. They can buy products by searching and also manage customers' update their profile.
- \* Shipment manager can login and view the pending orders and the customers details to ship the items.
- \* Shopping cart system is used to store all the items the customer wants to order, with the quantity and the total item value.
- \* Recommendation System is used to recommend products to the user based on the products purchased and the products viewed.
- \* Payment System should provide an easy and safe method to the user to make the payments.

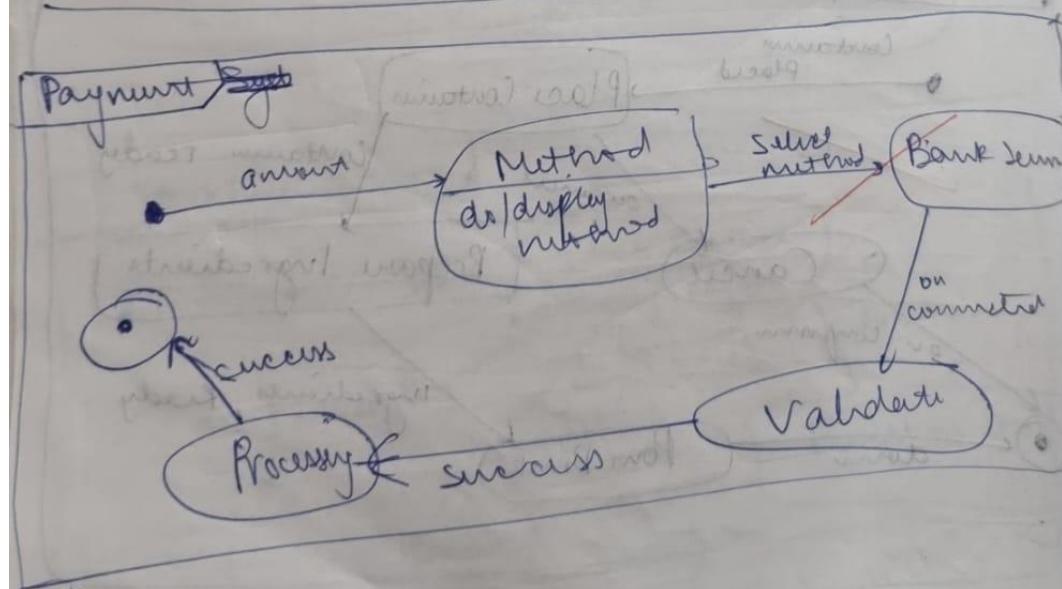
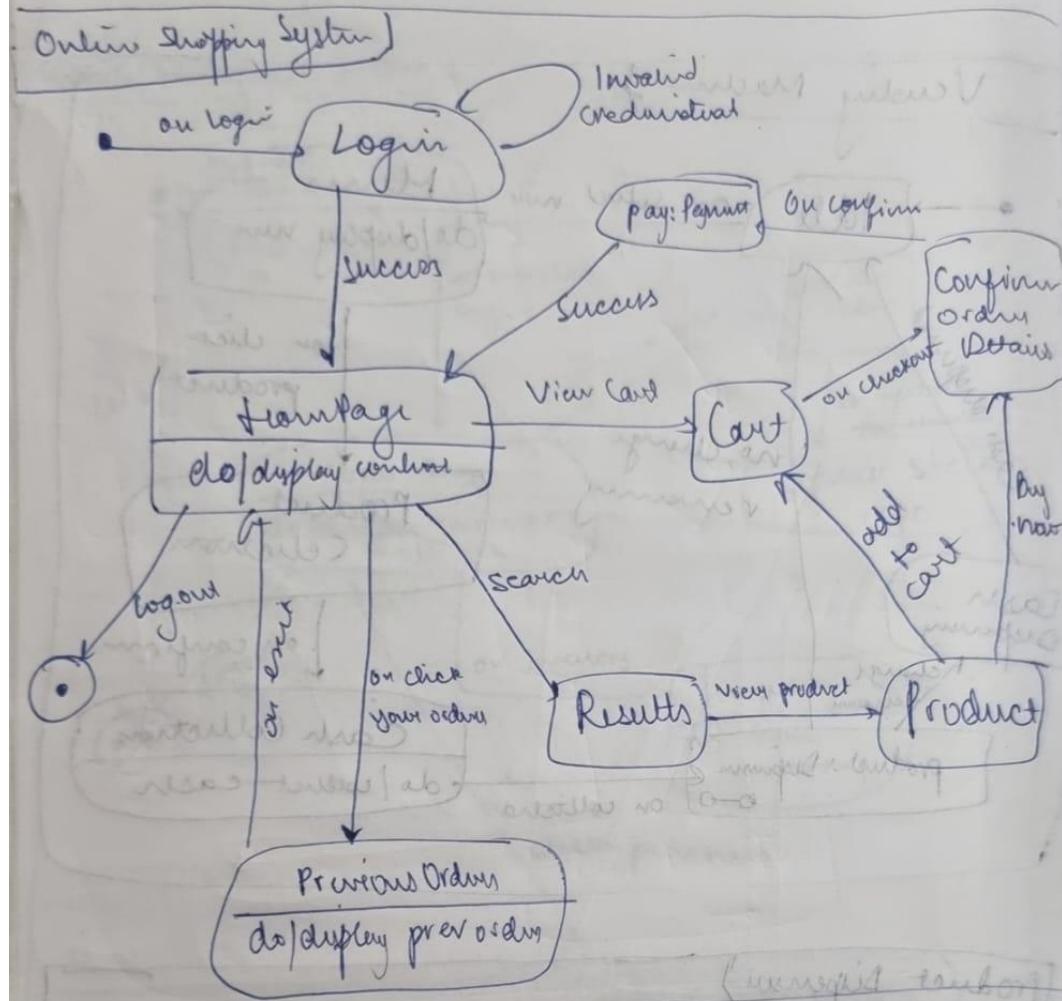
## 2. Draw the advanced class diagram

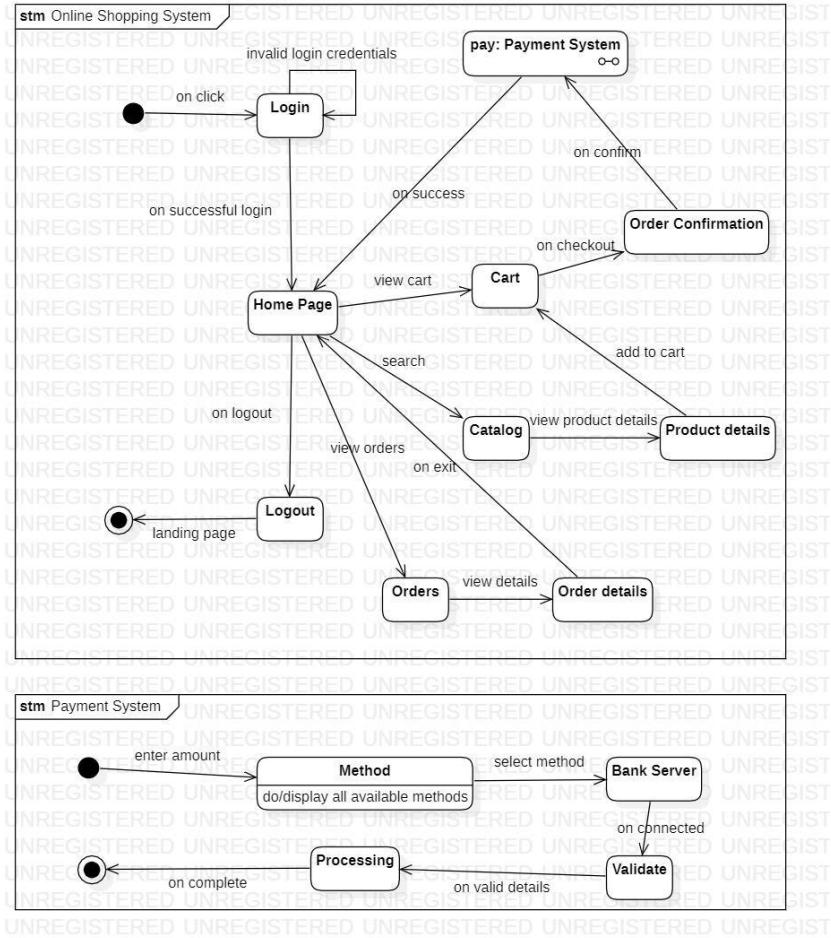




### 3. Draw the advanced state diagram

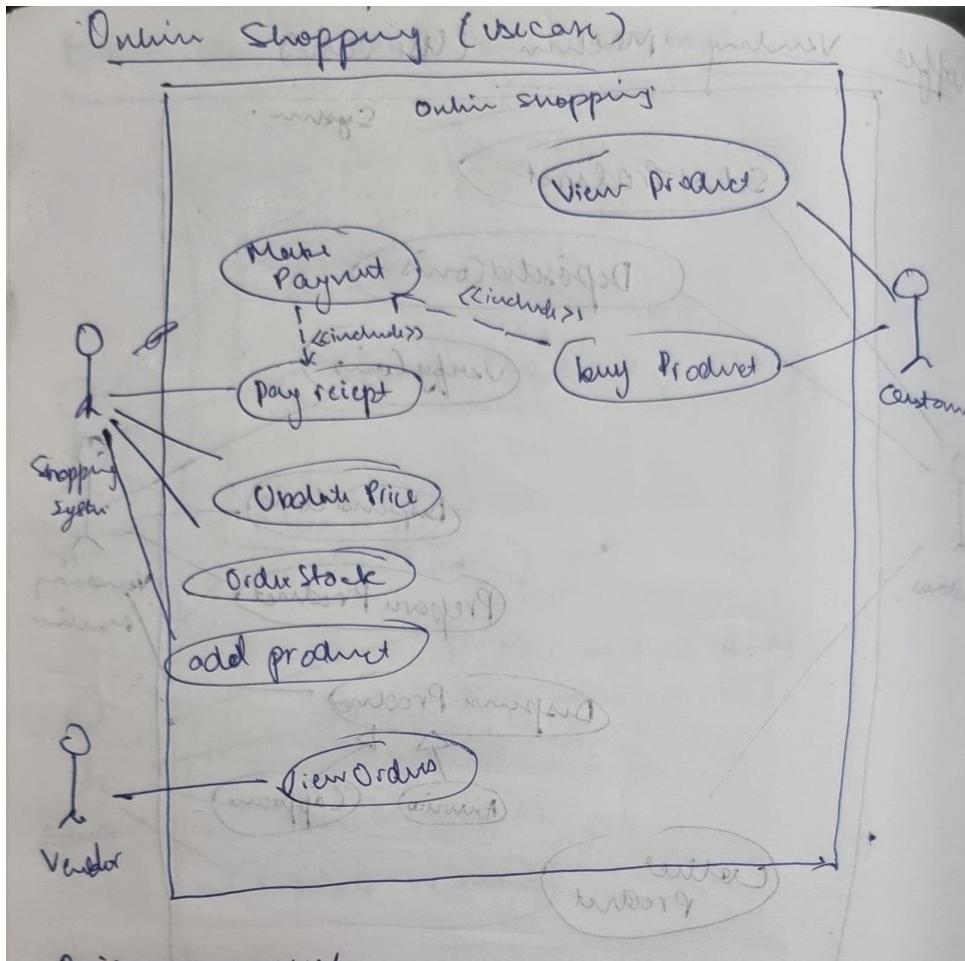
# Online Shopping System (ASR M)

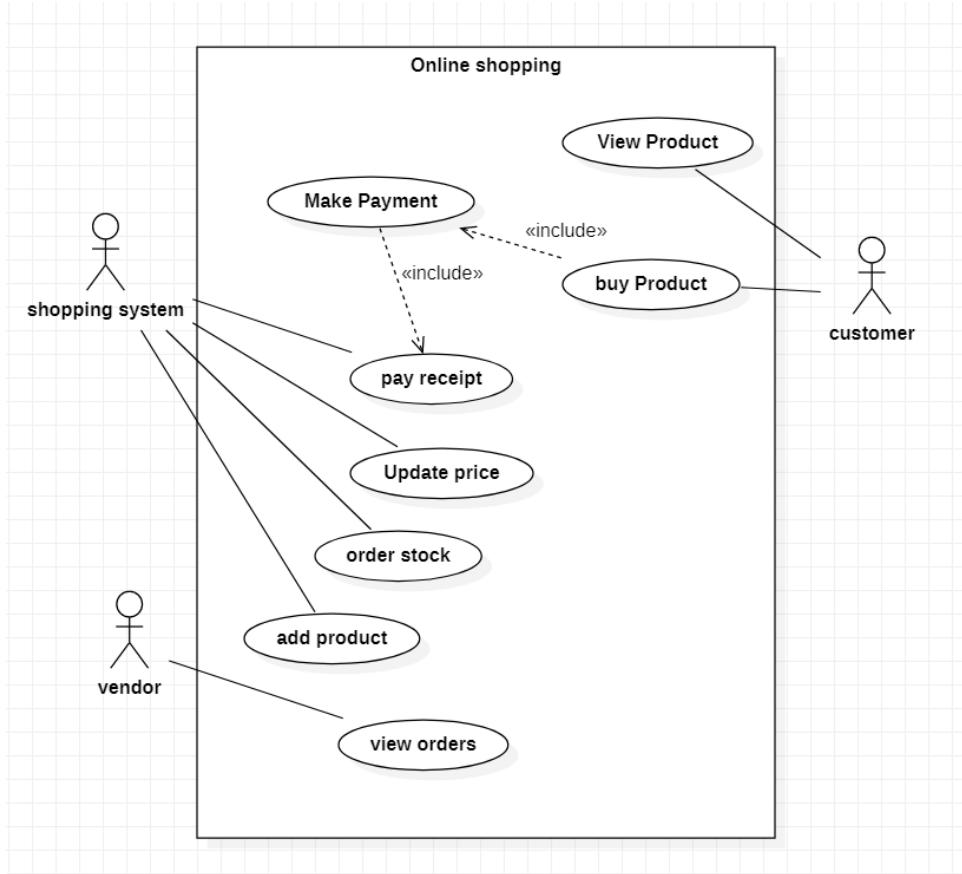




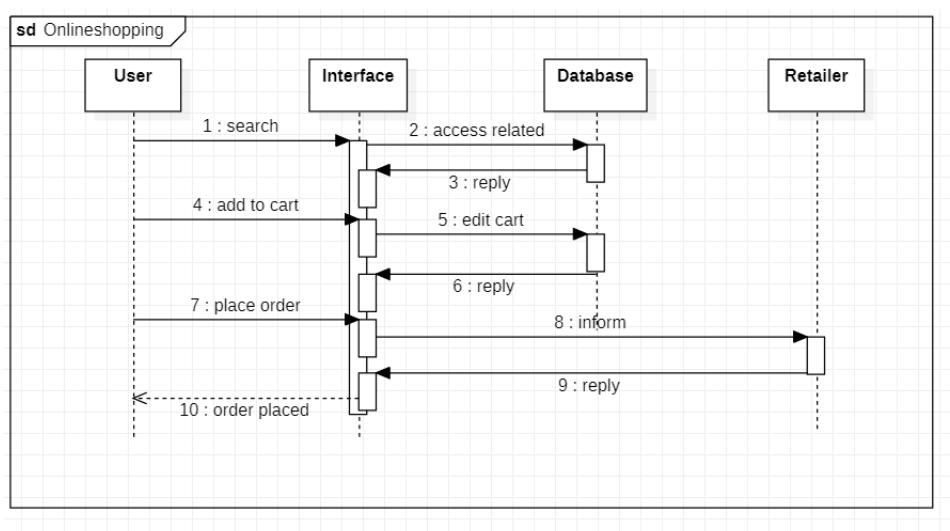
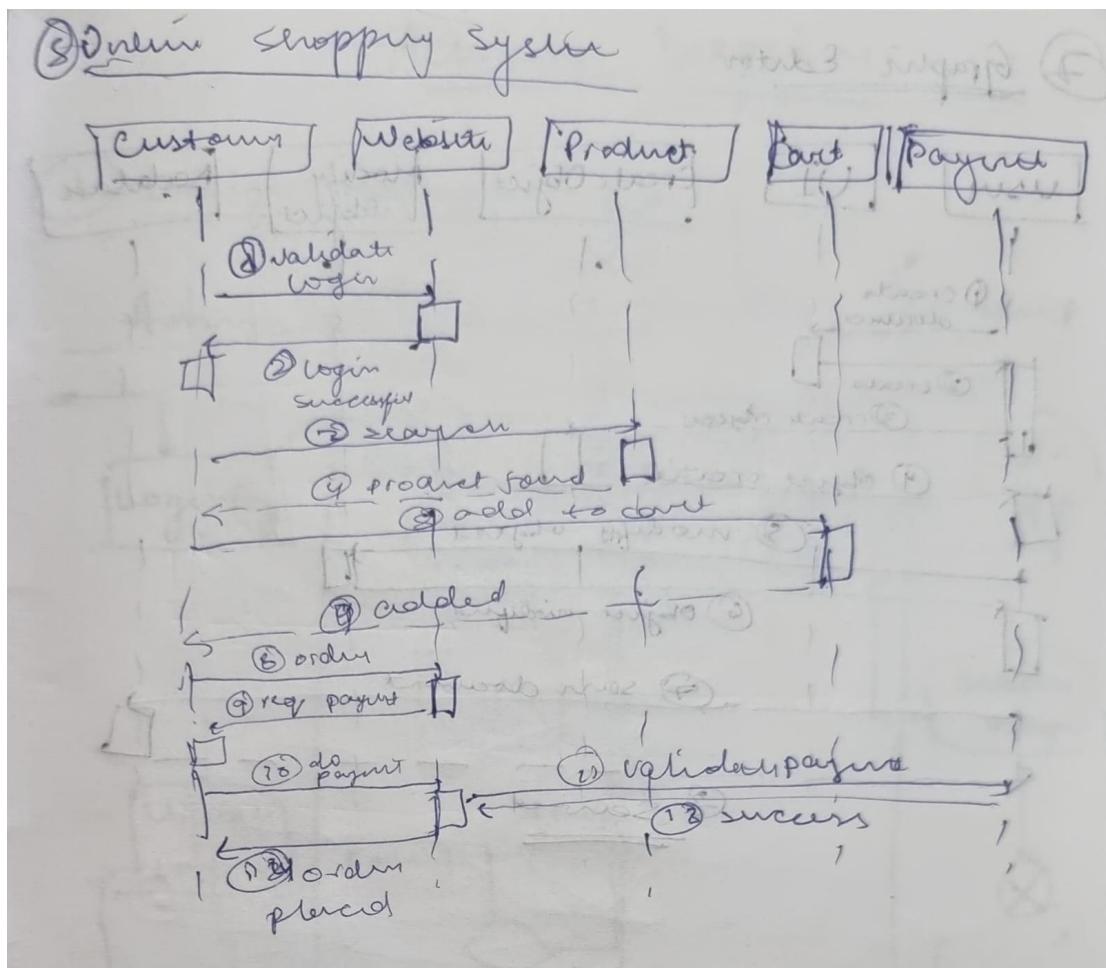
#### 4. Draw the advanced use case diagram

## Online Shopping (use case)



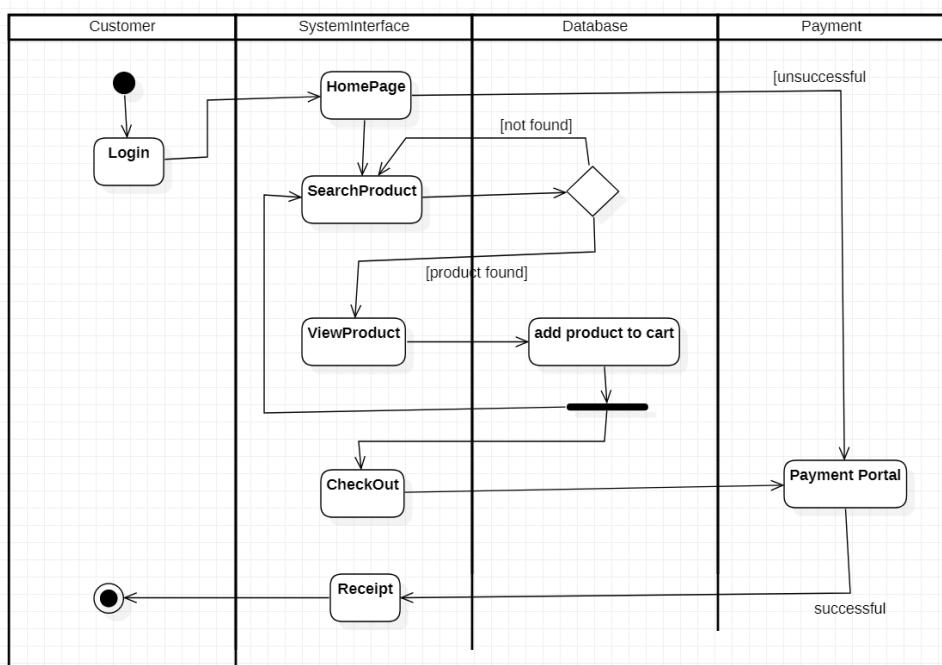
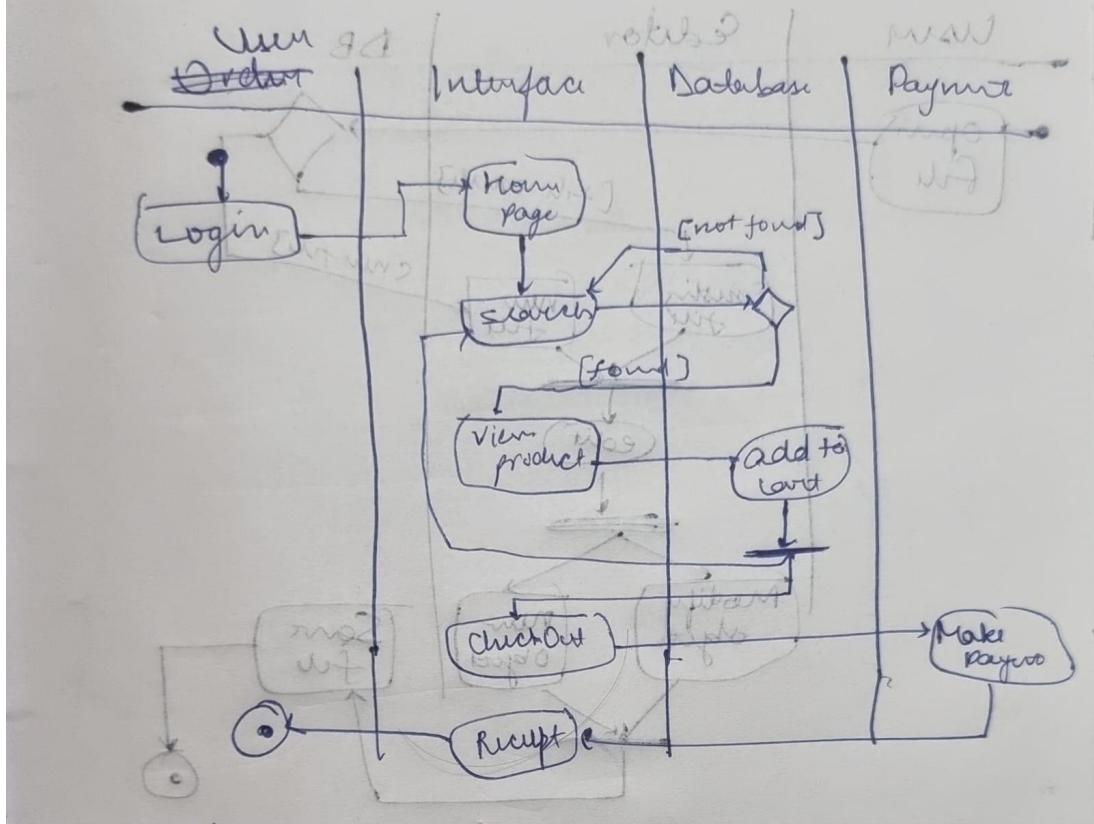


## 5. Draw the advanced sequence diagram



## 6. Draw the advanced activity diagram

# ⑤ Online shopping system



## **Exercise 6: Railway Reservation System**

### **1. Write SRS**

## Railway Reservation System SRS

problem statement: An automated ticket booking system that takes care of tasks such as booking ticket, cancelling and checking status etc.

admin

① Booking: Takes ~~have~~ control over

all the system

→ ID

→ pass → no. of ticket

→ manage() → manage the tasks

② Train: It contains all the information about train

→ It → no. of coaches

→ name → time

→ getinfo() → gives all the detail about the train

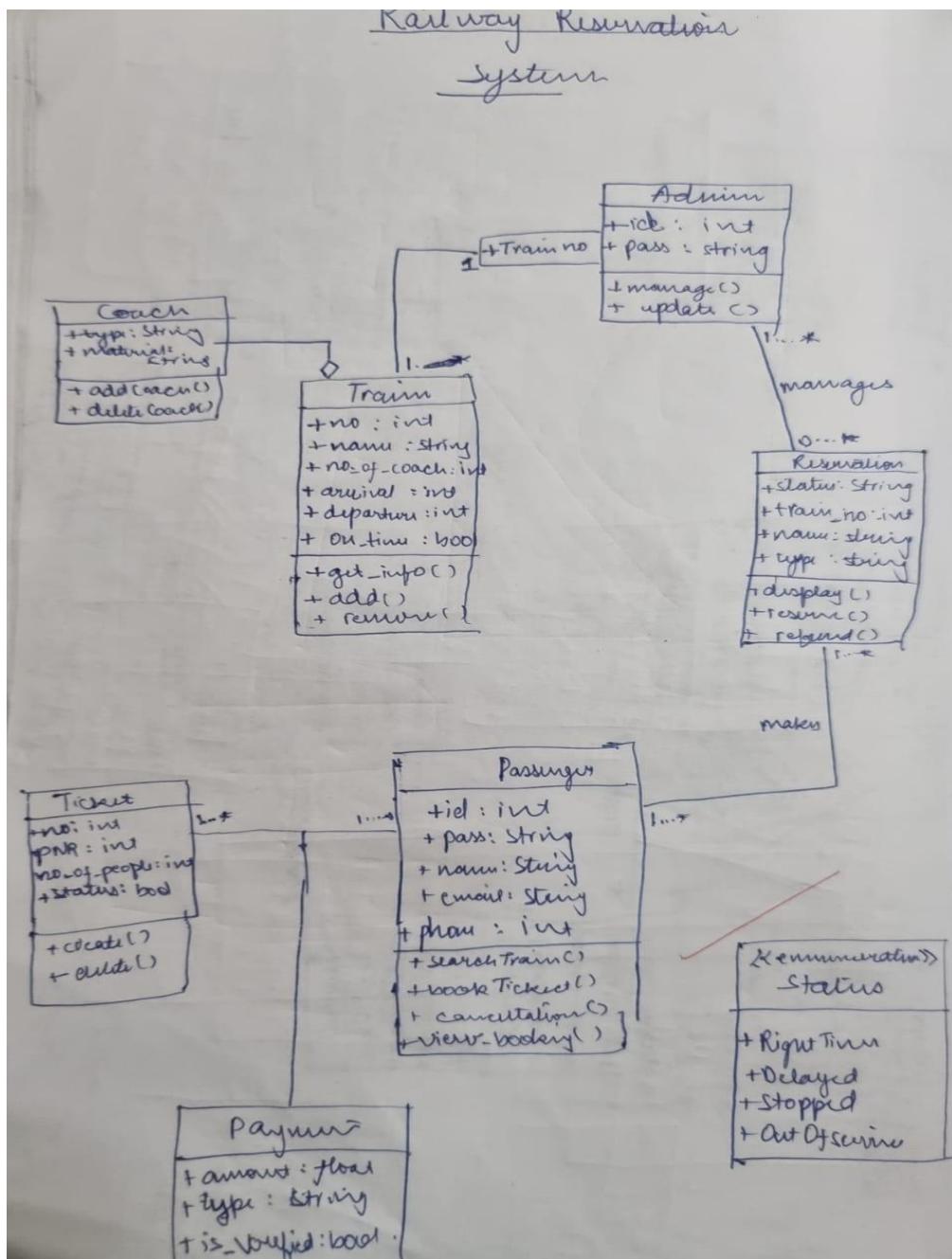
→ add() → to add in train

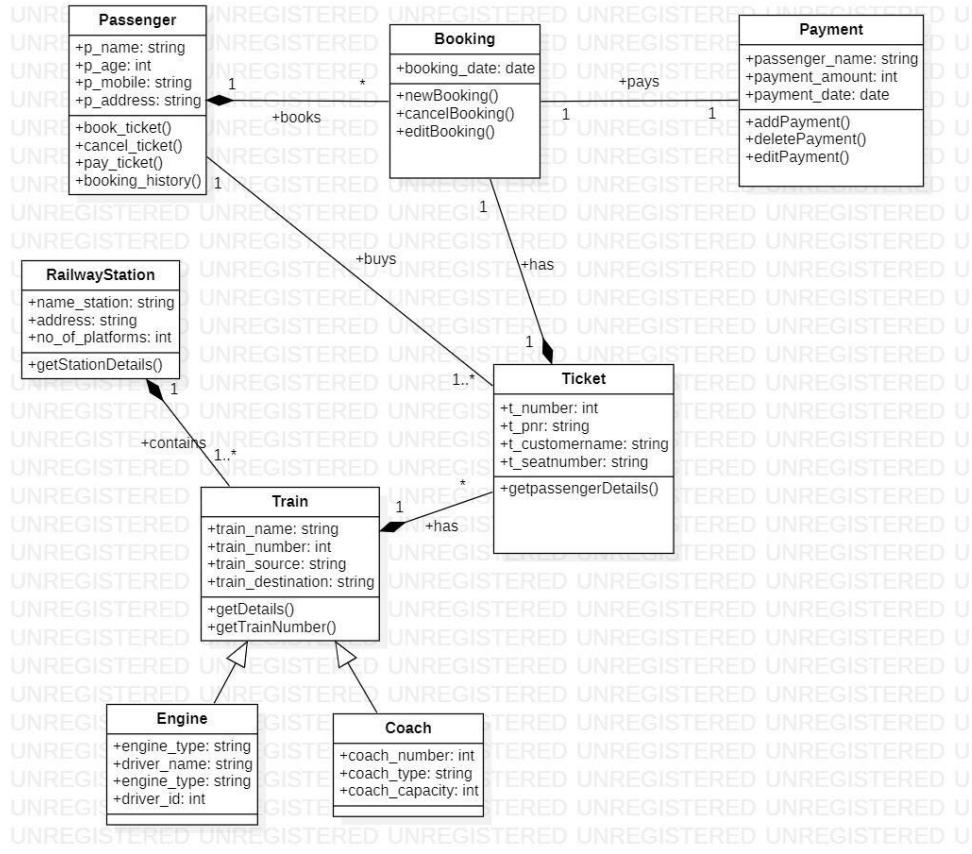
→ remove() → to remove some train

③ Coach: Contains information about coach

④ Reservation: Gives user all the information about their reservation

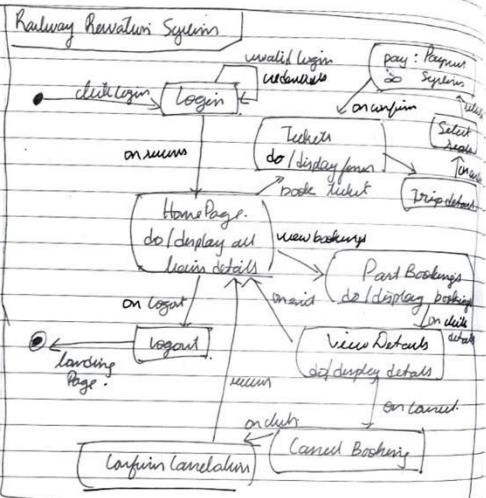
## 2. Draw the advanced class diagram



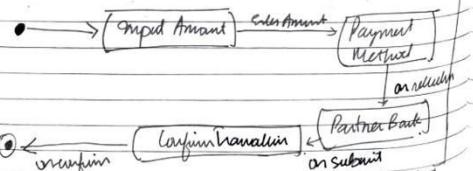


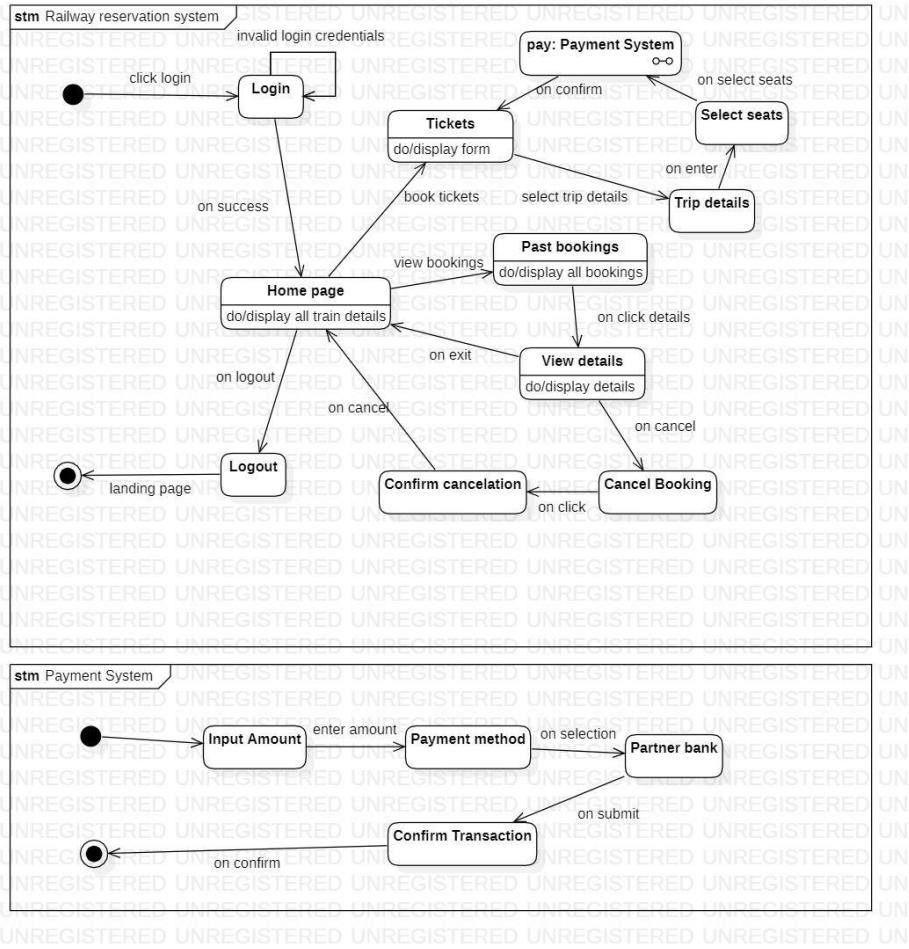
### 3. Draw the advanced state diagram

## Railway Reservation System

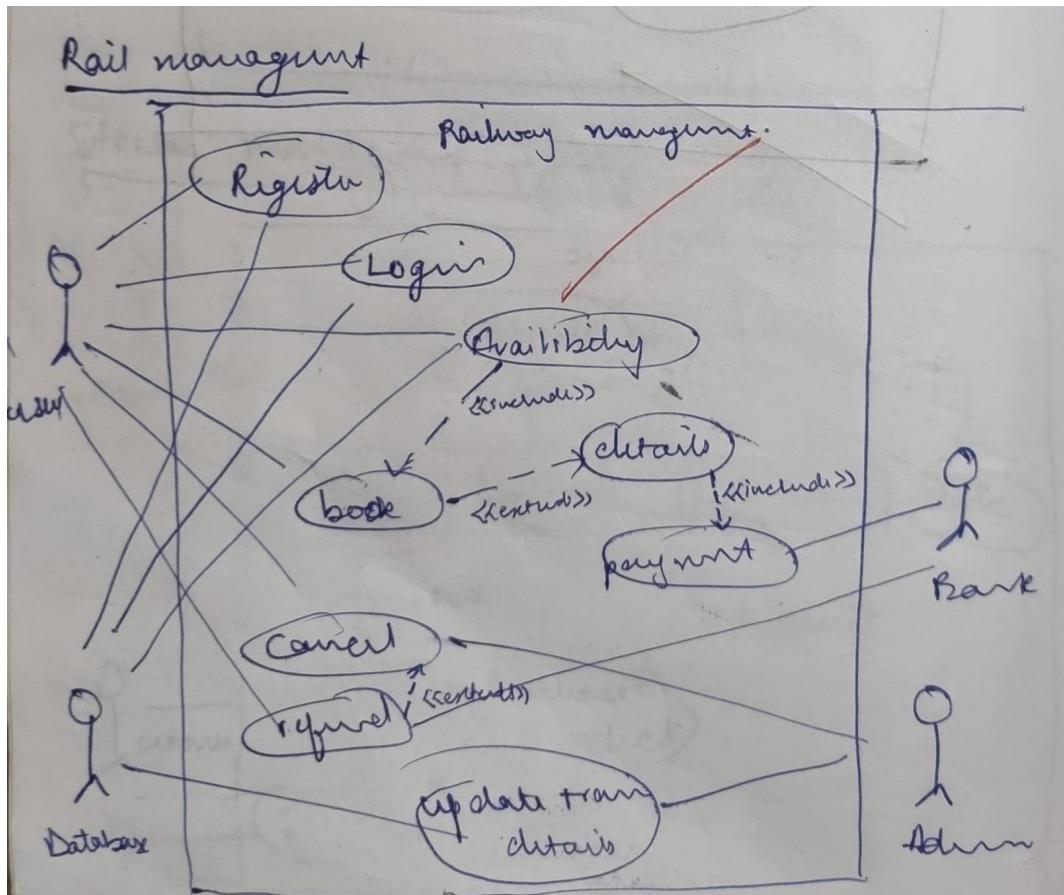


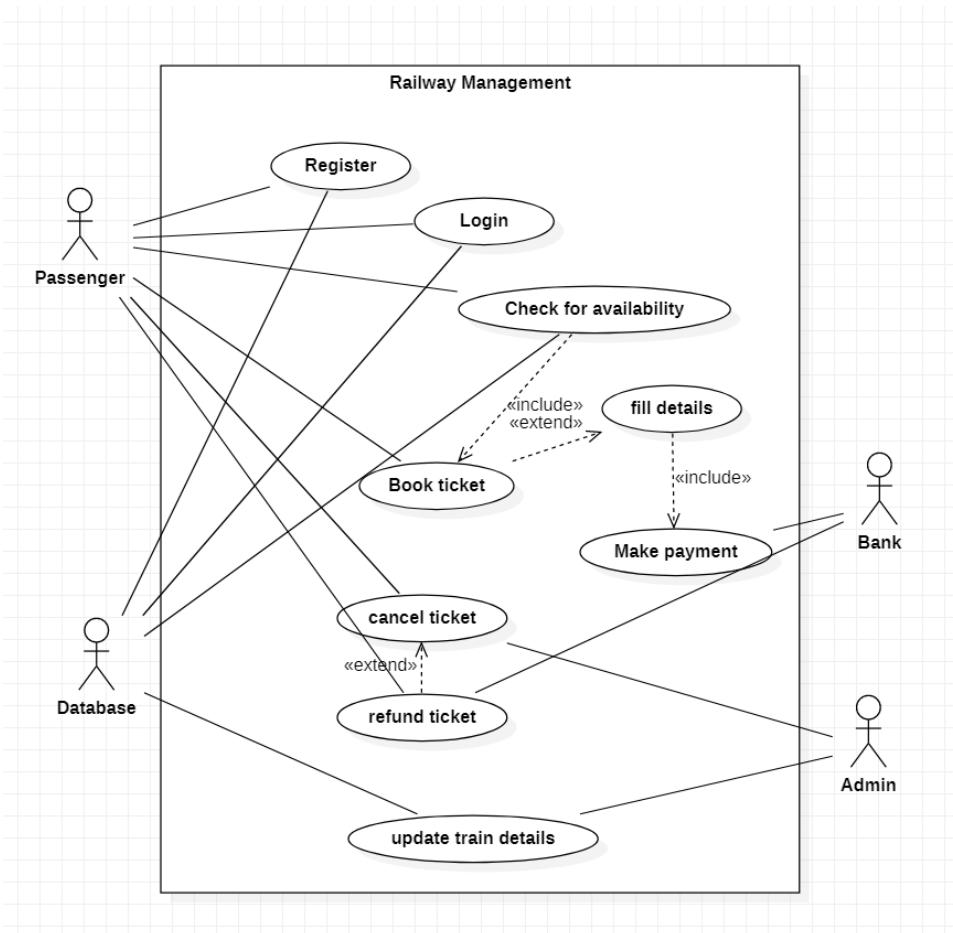
## Payment System



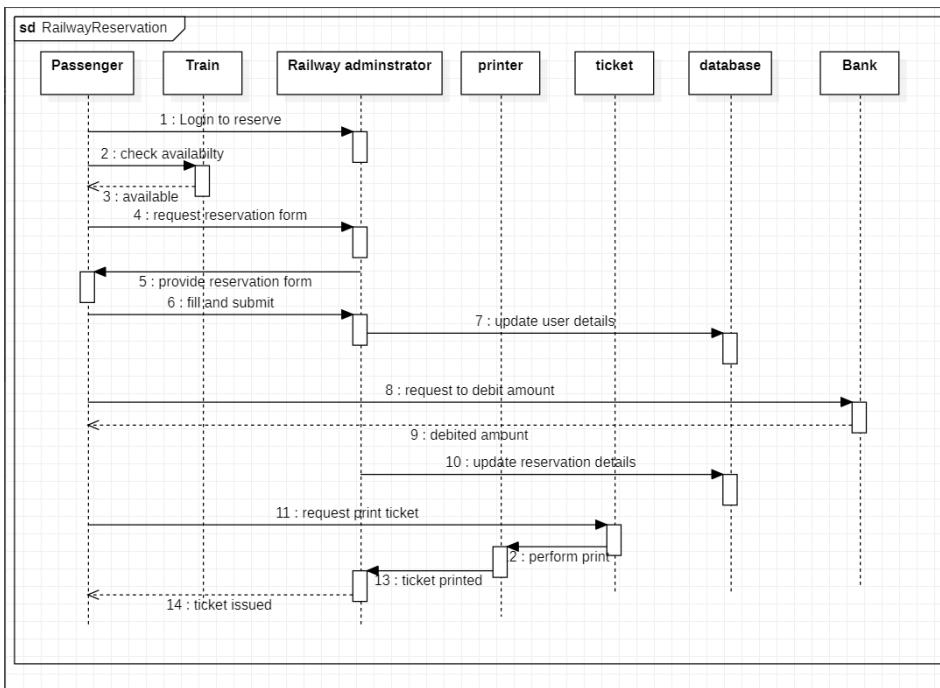
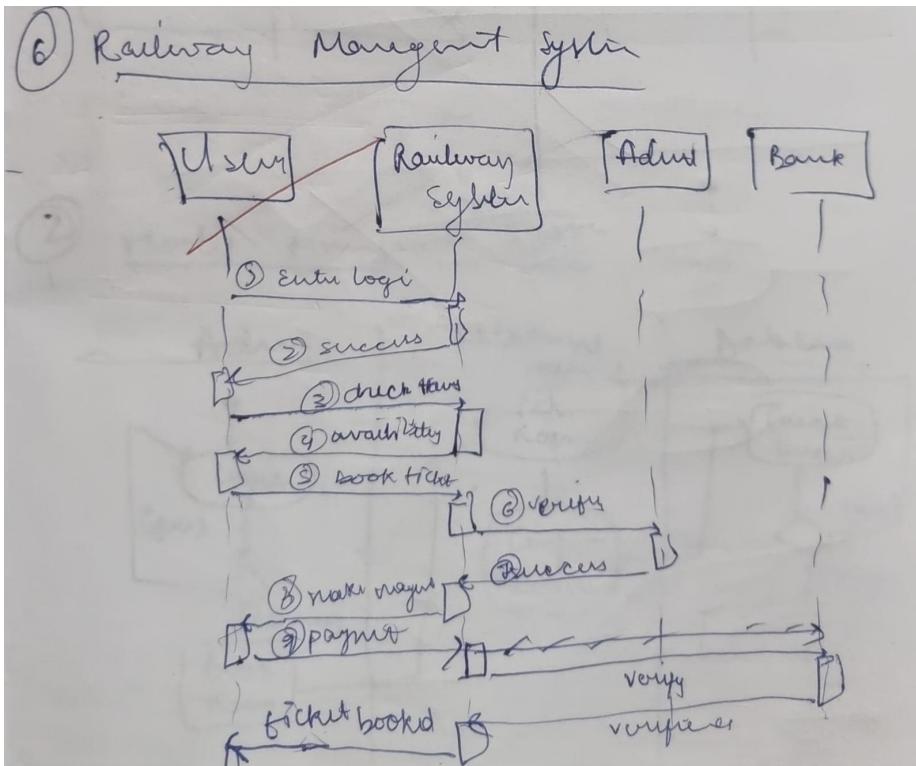


#### 4. Draw the advanced use case diagram

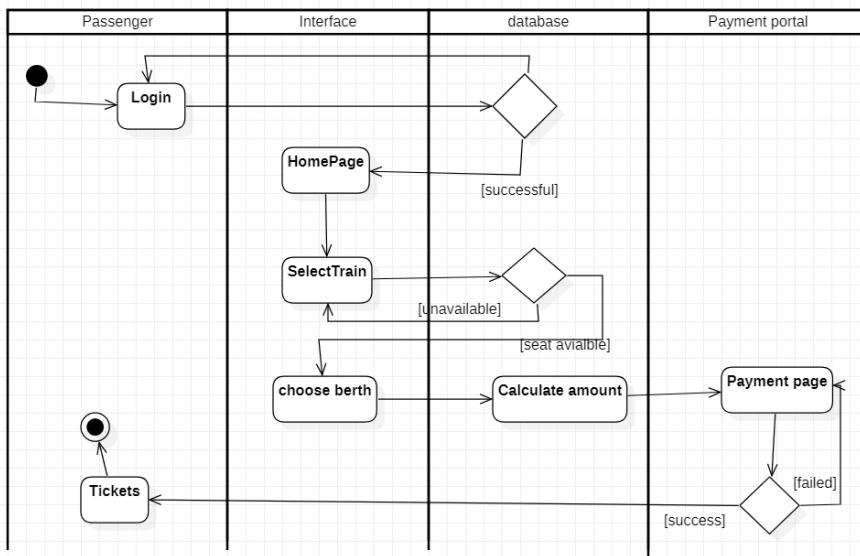
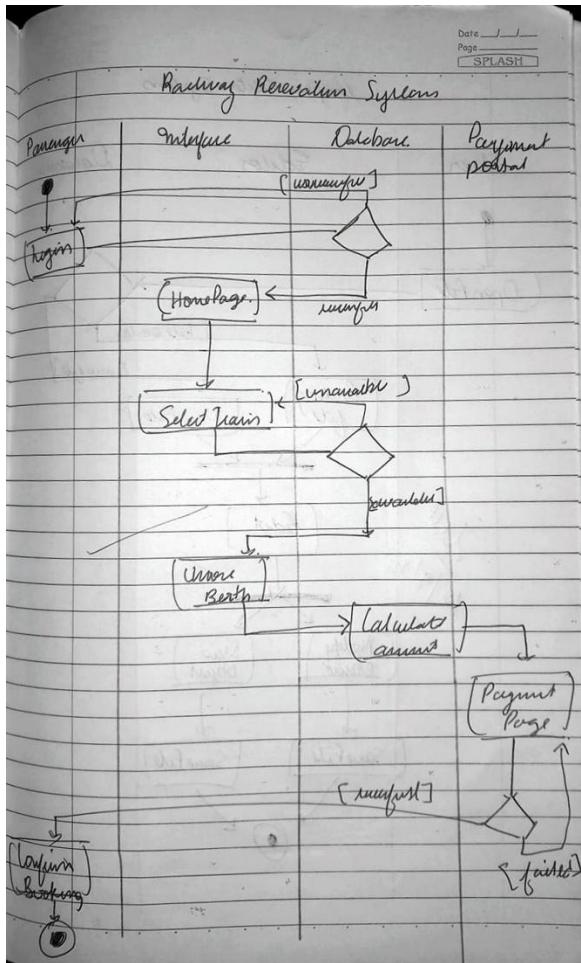




## 5. Draw the advanced sequence diagram

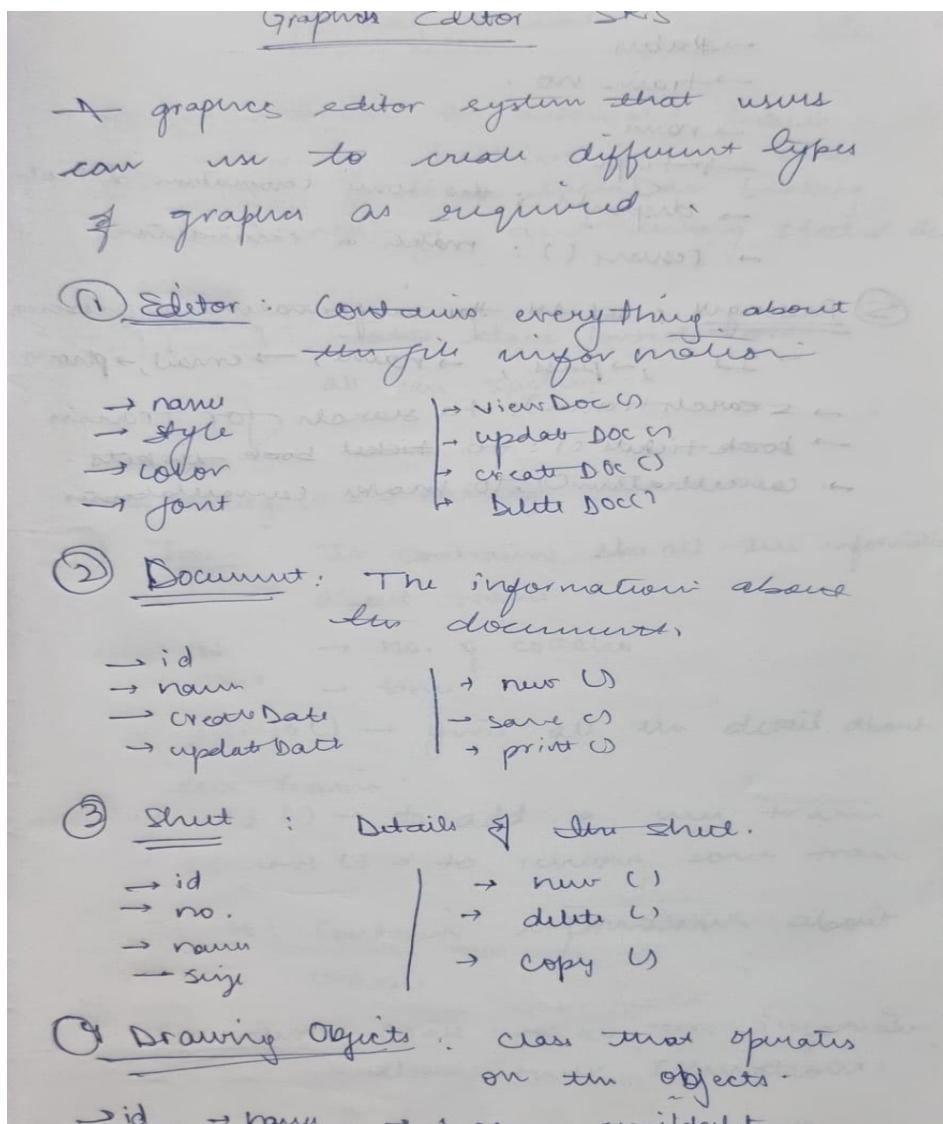


## 6. Draw the advanced activity diagram

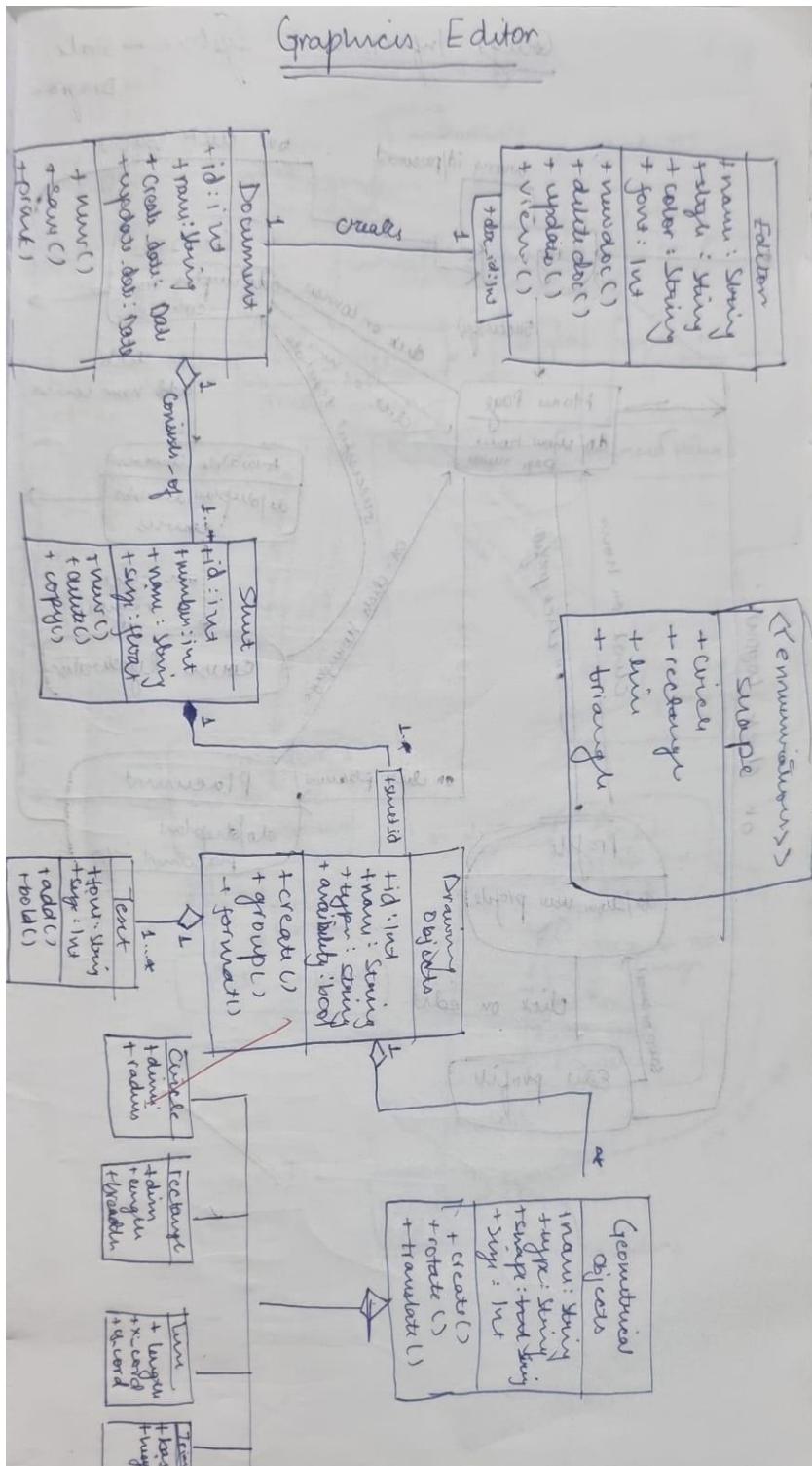


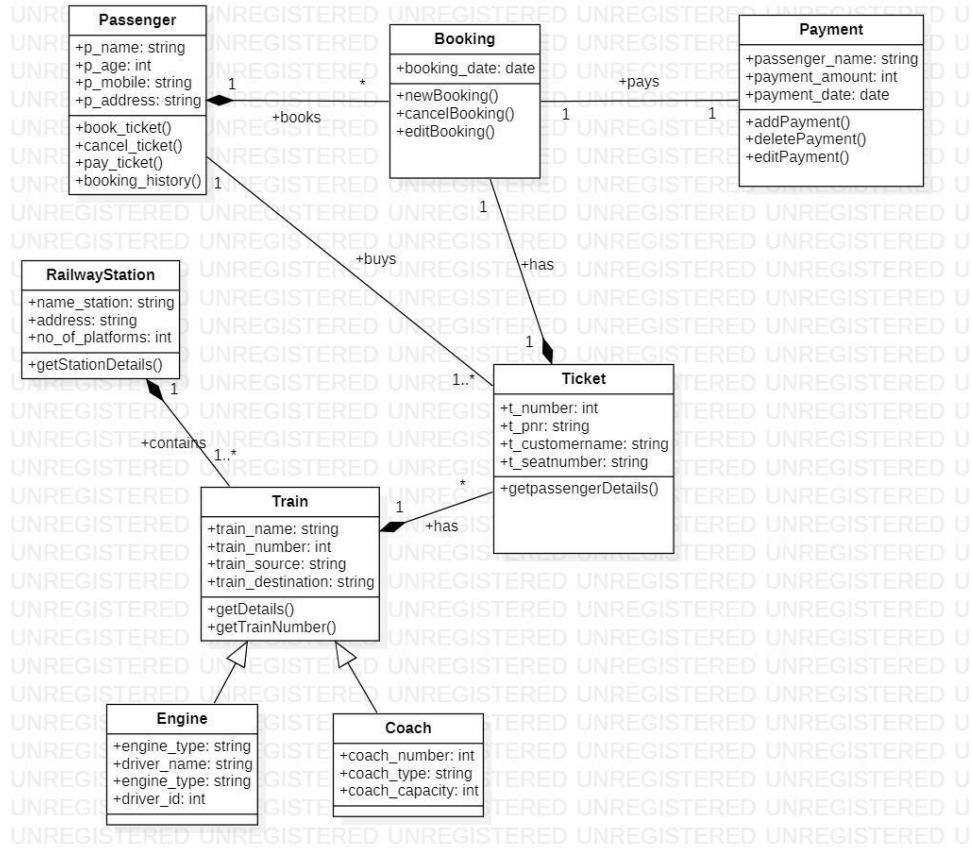
## Exercise 7: Graphics Editor System

### 1. Write SRS

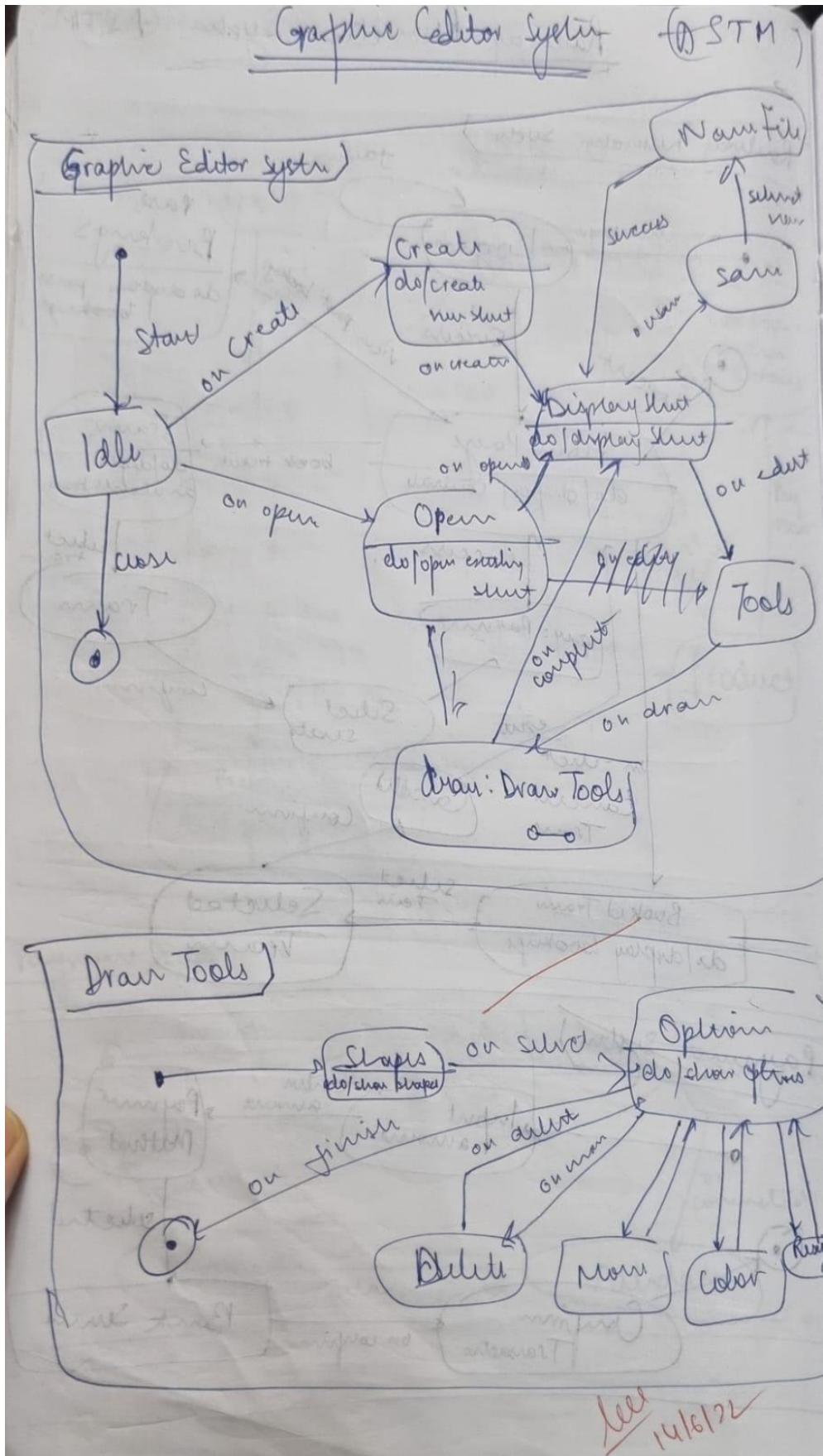


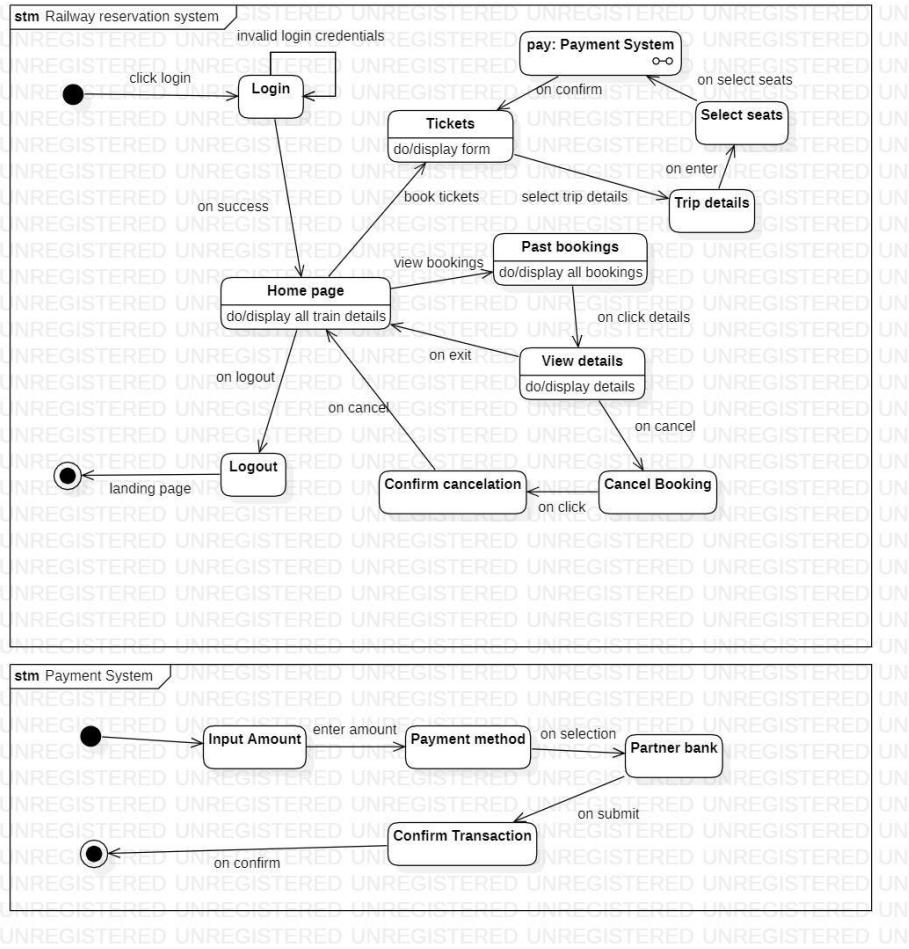
### 2. Draw the advanced class diagram





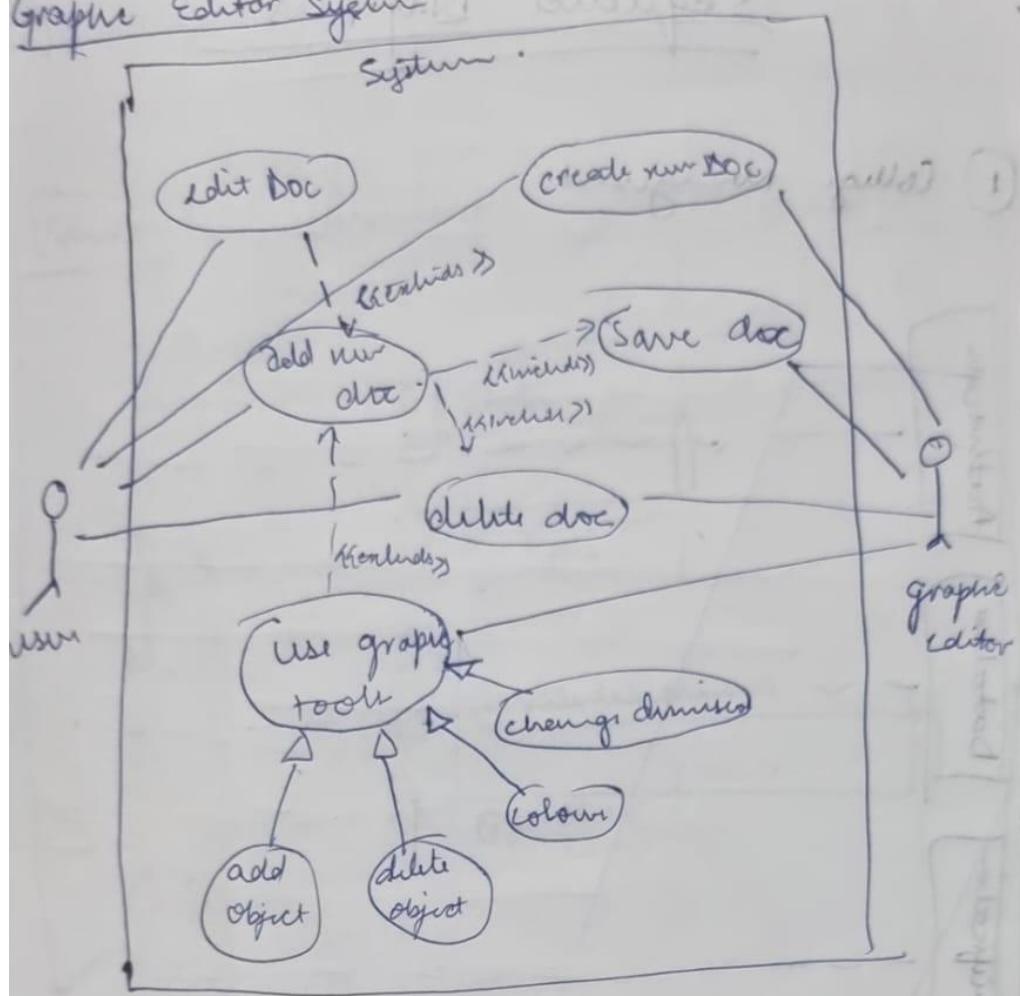
### 3. Draw the advanced state diagram

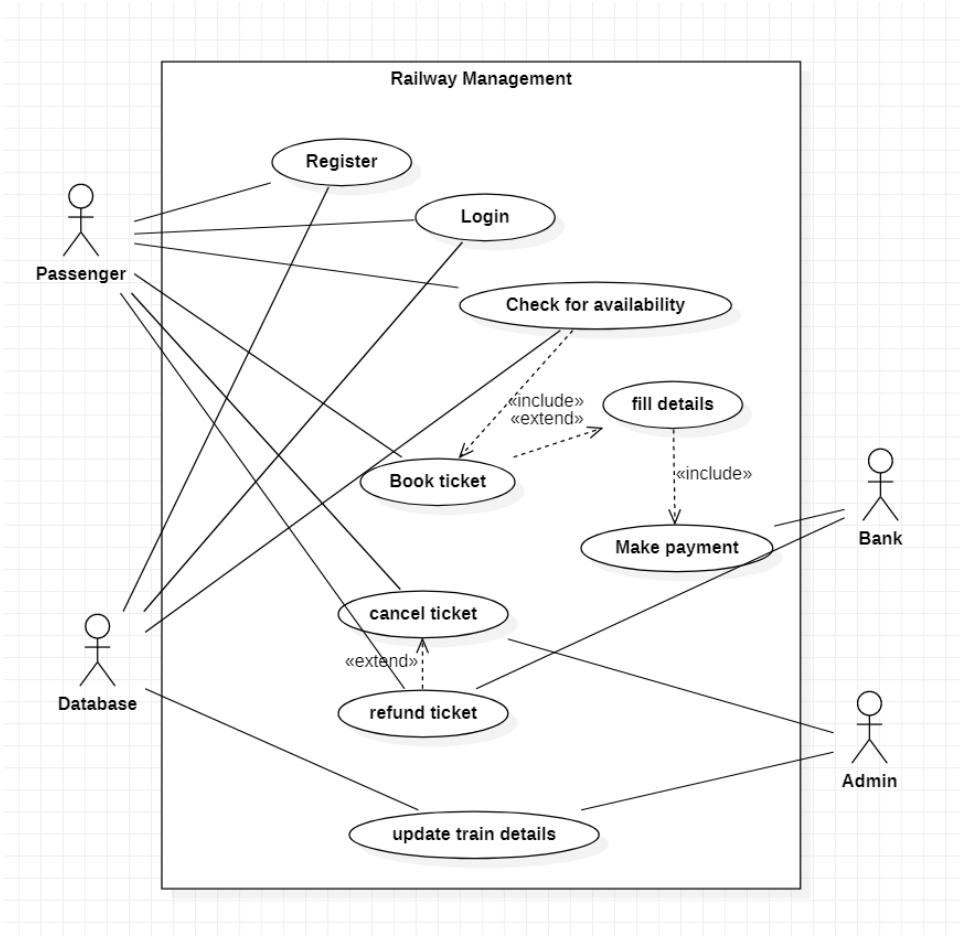




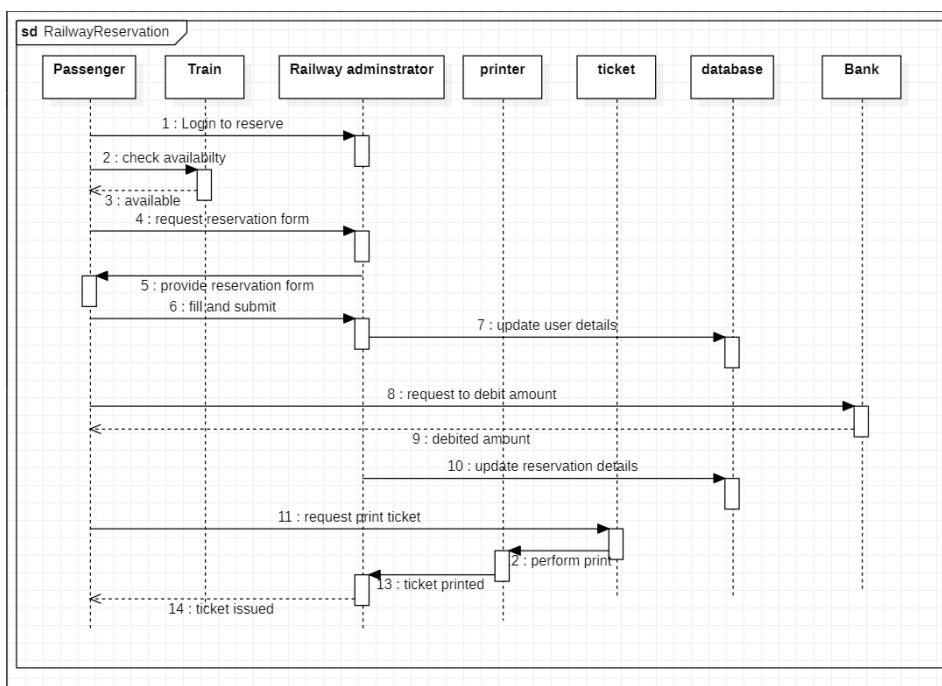
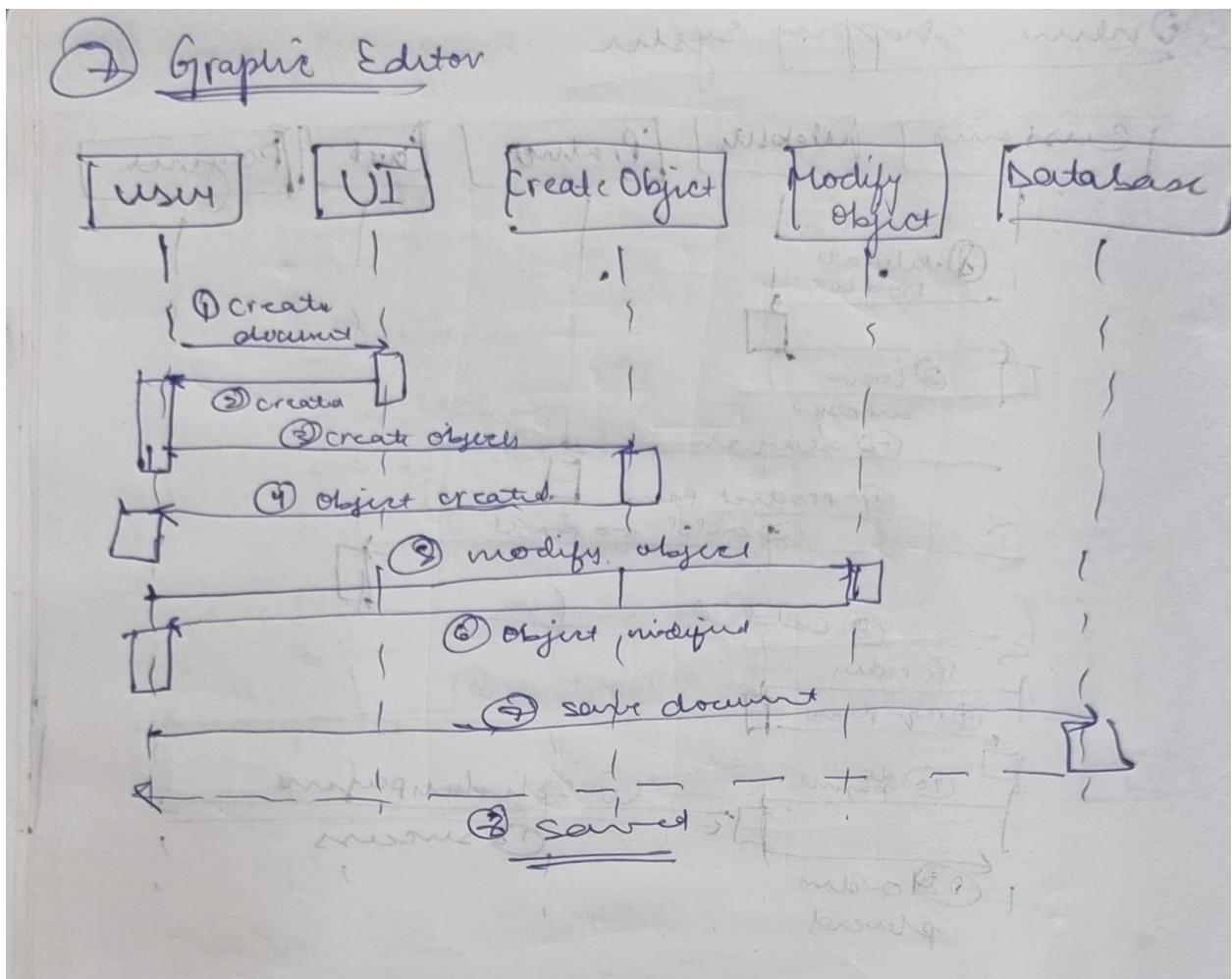
#### 4. Draw the advanced use case diagram

# Graphic Editor System





## 5. Draw the advanced sequence diagram



## 6. Draw the advanced activity diagram

