

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JnanaSangama”, Belgaum -590014, Karnataka.



LAB REPORT on

OBJECT ORIENTED MODELING AND DESIGN

Submitted by

Hritik Singh(1BM19CS063)

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 "**OBJECT ORIENTED MODELING AND DESIGN**" carried out by **Hritik Singh(1BM19CS063)**, who is bona-fide 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 an **OBJECT ORIENTED MODELING AND DESIGN - (20CS6PCOMD)** work prescribed for the said degree.

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Course Outcome

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

1. Write SRS

SRS :

1) College information system -
Education system should be able to add, edit, view personal details and academic details.

Faculty : They should be able to see the course allotted. They should be able to derive marks of students and maintain the attendance.

Coe office : They should be able to maintain books or access the and see marks of students.

placement section : They'll have all the student details and companies information.

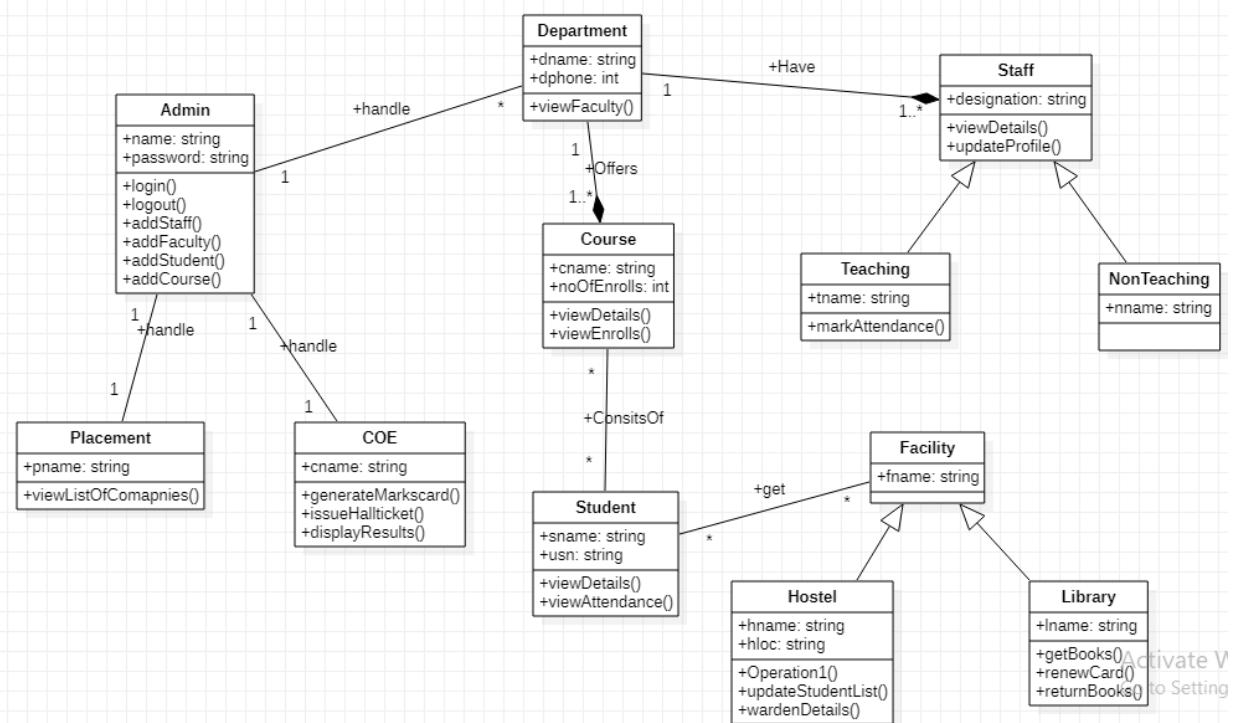
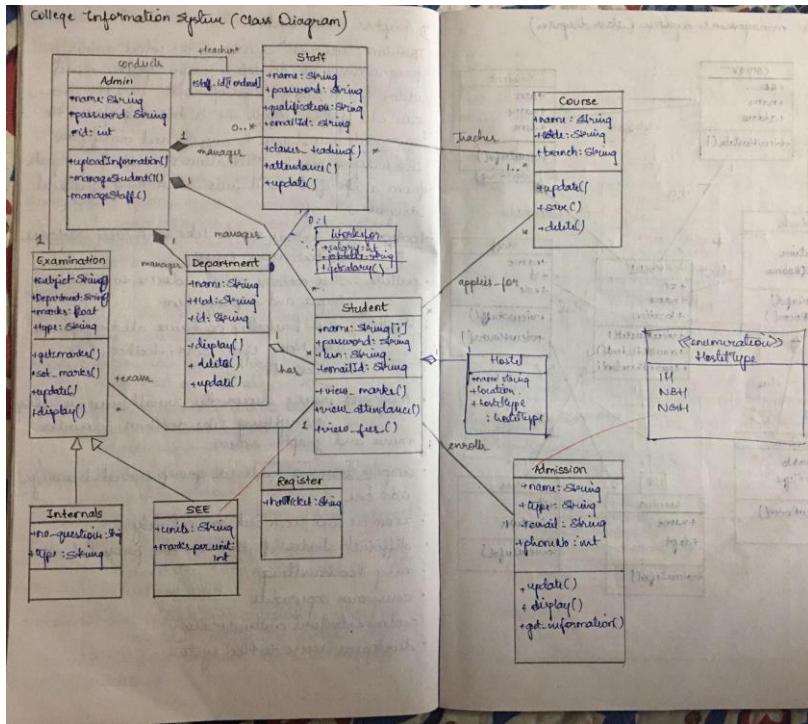
Student - view all the details given like USN, department, information about timetable, results, events, attendance.

Course - About the course, teacher, enrollment of the course.

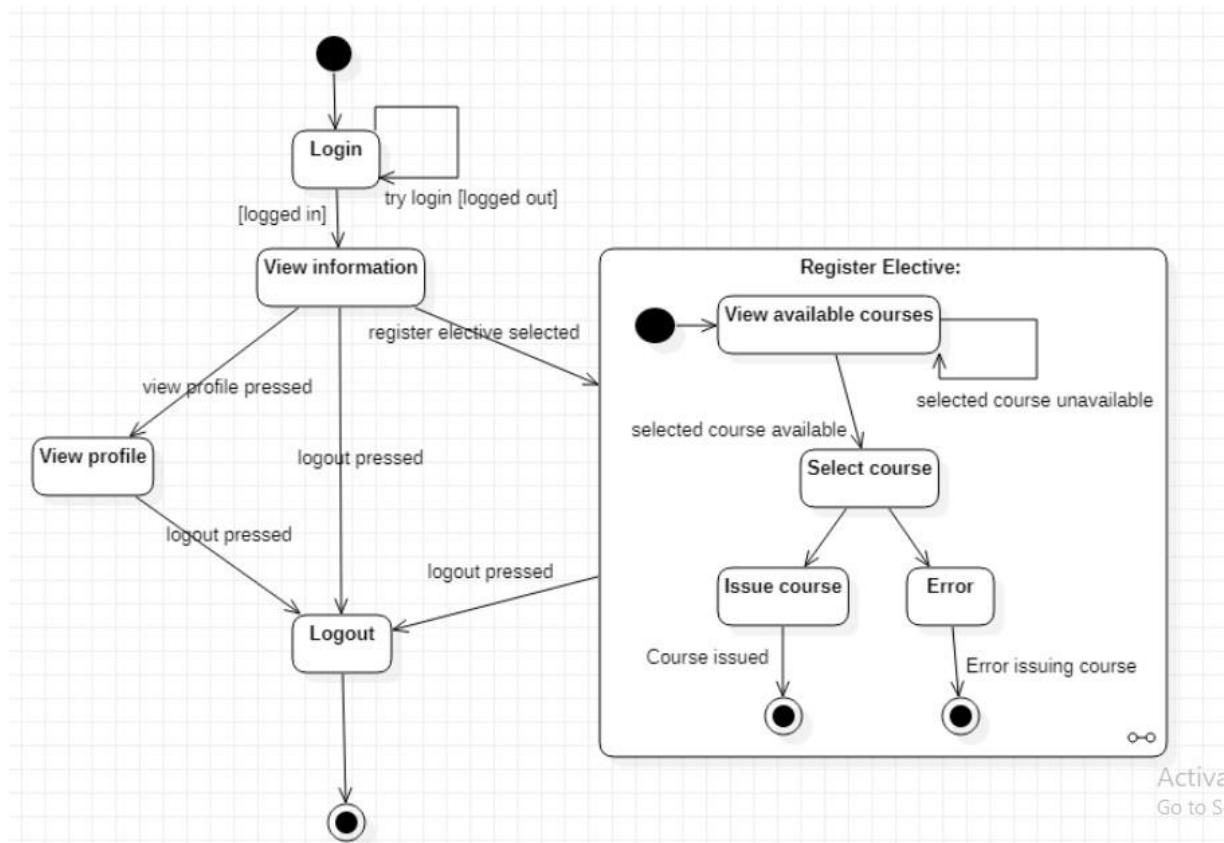
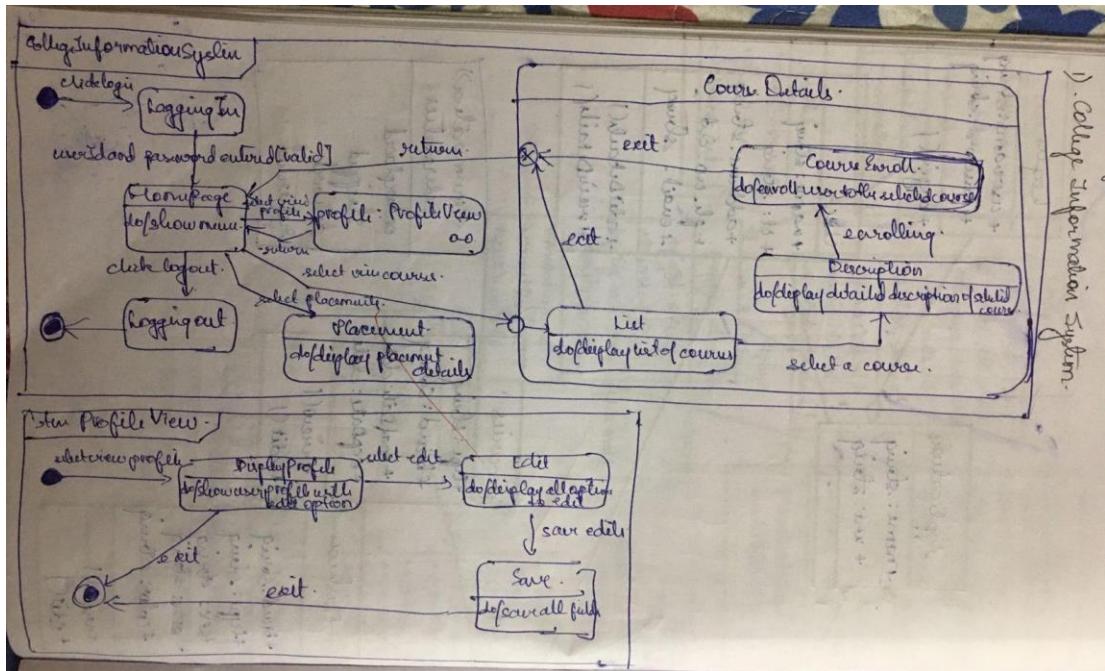
Library - about the books available, requesting, issuing, viewing books.

Problem statement : This will help in managing college activities like books, records, results, fee details, attendance and timetable information.

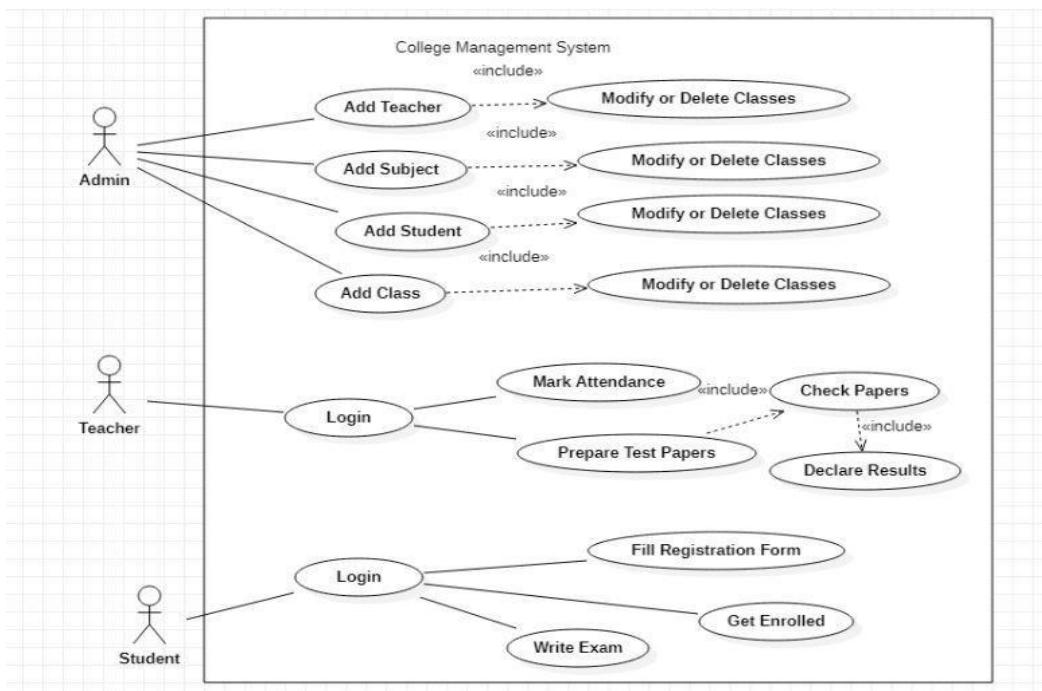
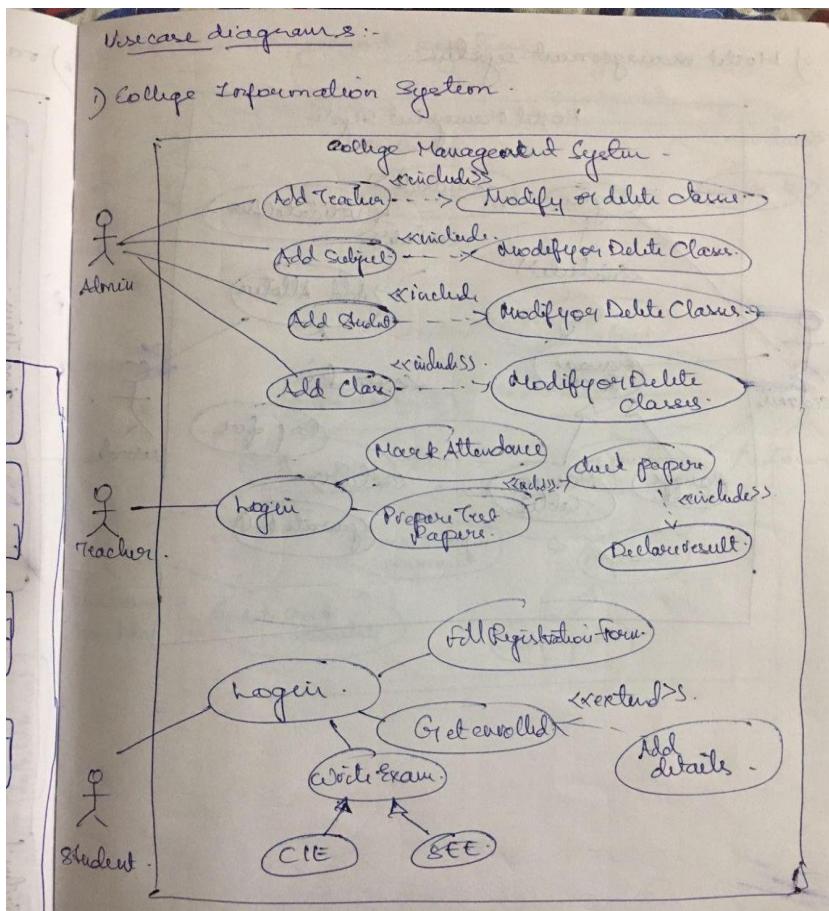
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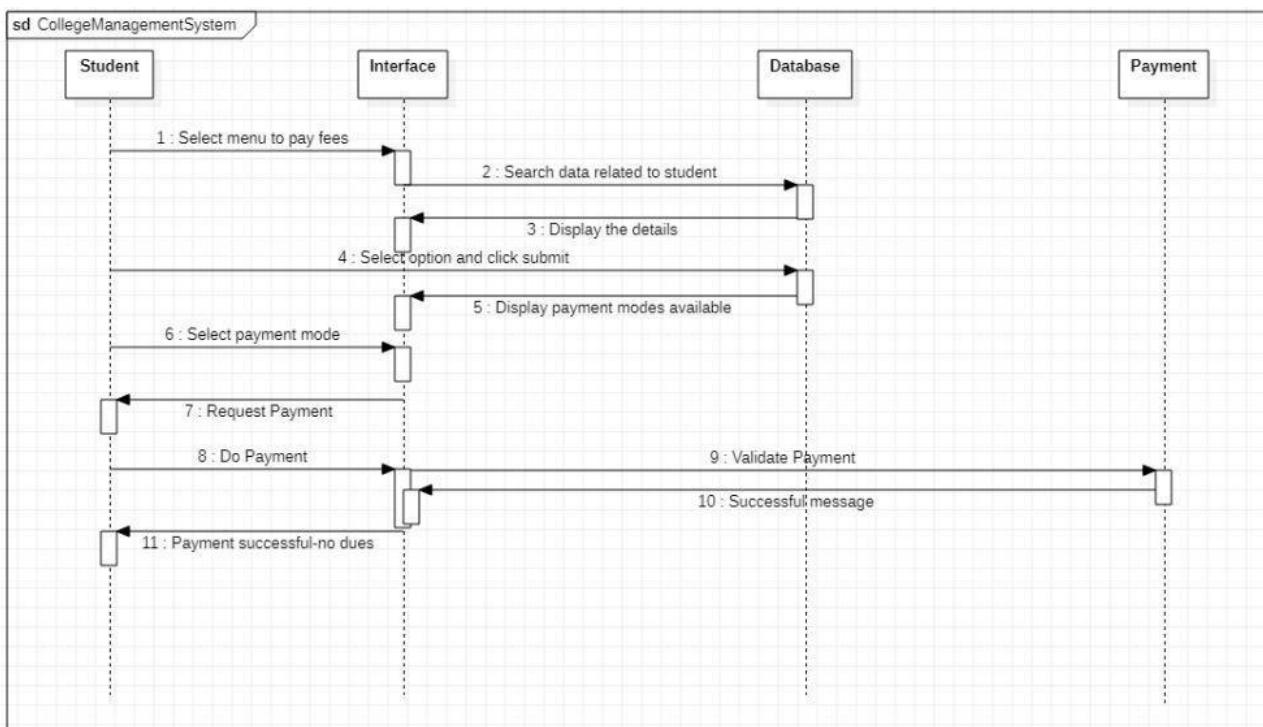
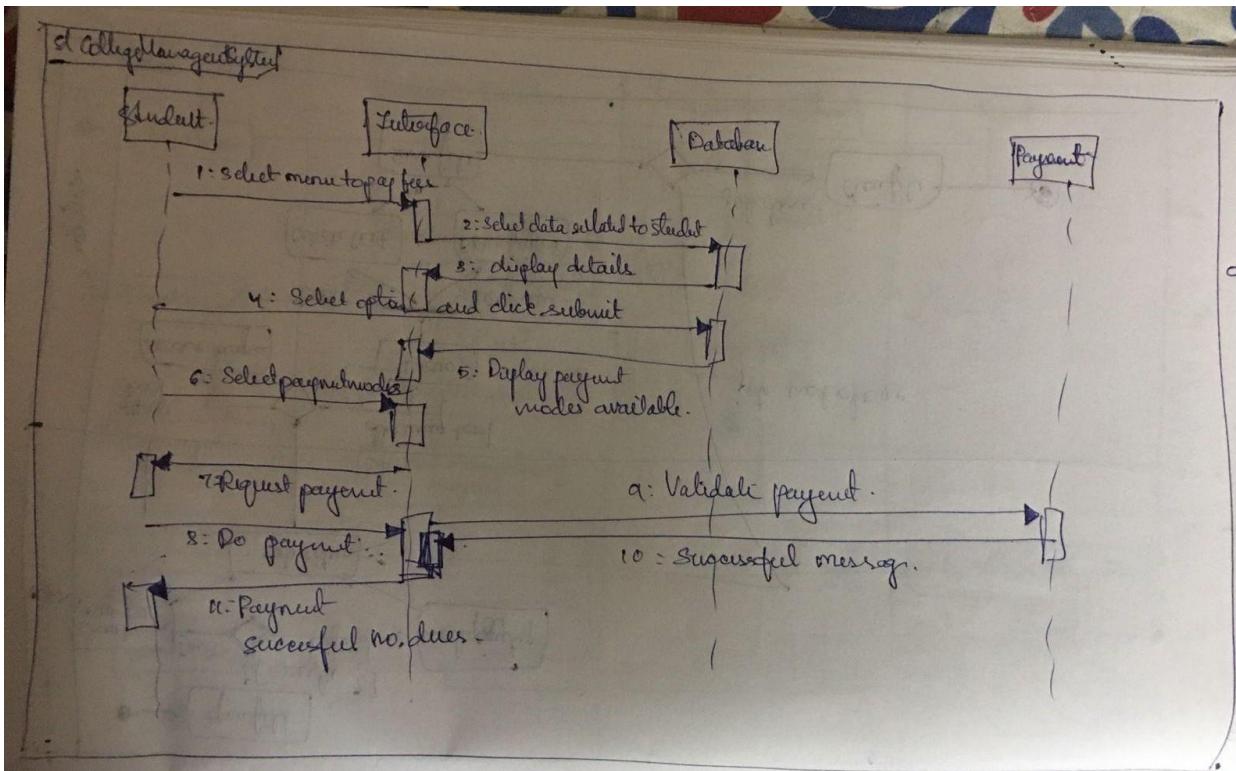
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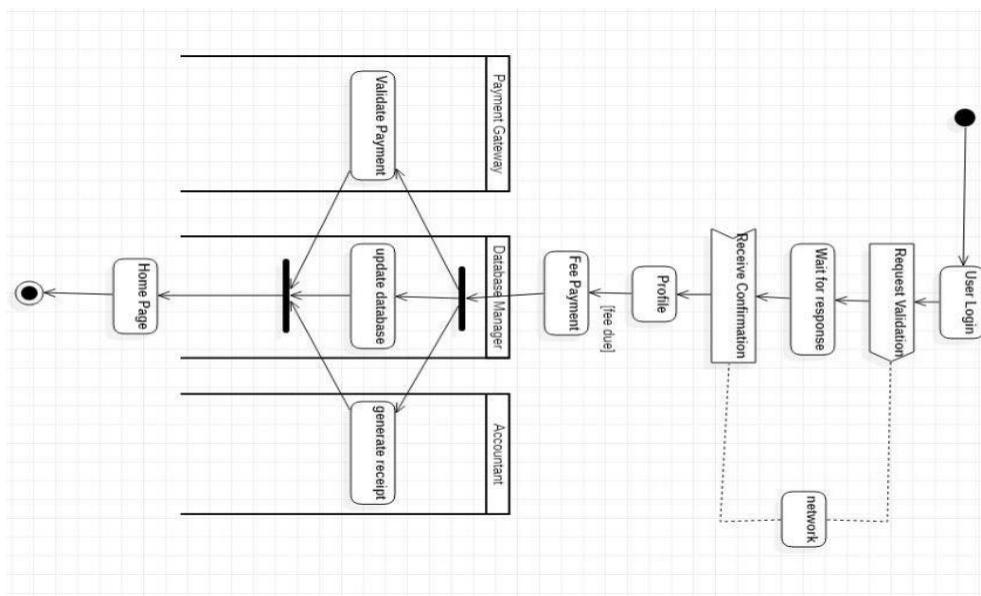
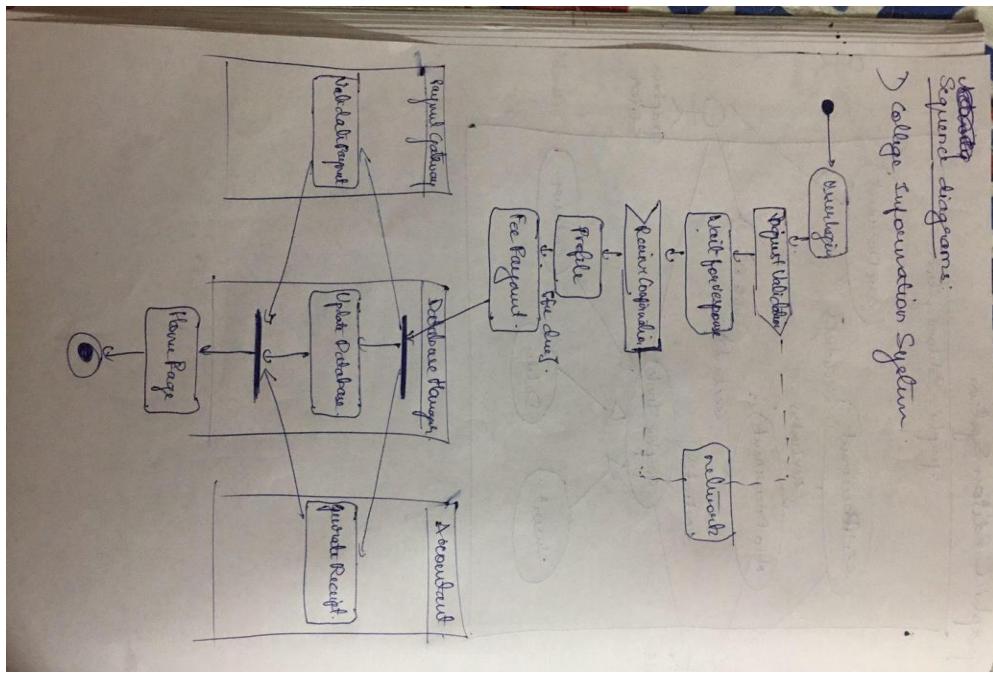
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



Exercise 2: Hostel Management System

1. Write SRS

a). Hostel management System ✓

warden : they control the hostel dos and dont's
the curfew, rules, regulation,
granting permission, facilities and
complaints.

Secretary: will know all the happenings in hostel
and any changes required will
be brought to the notice.

mess head : he maintain the mess, carries the
student list, will be able to
receive complaints and feedback.

staff : Each staff in the hostel will be given a
responsibility. He should be able to view
student list, mess details, give review,
and complain if required.

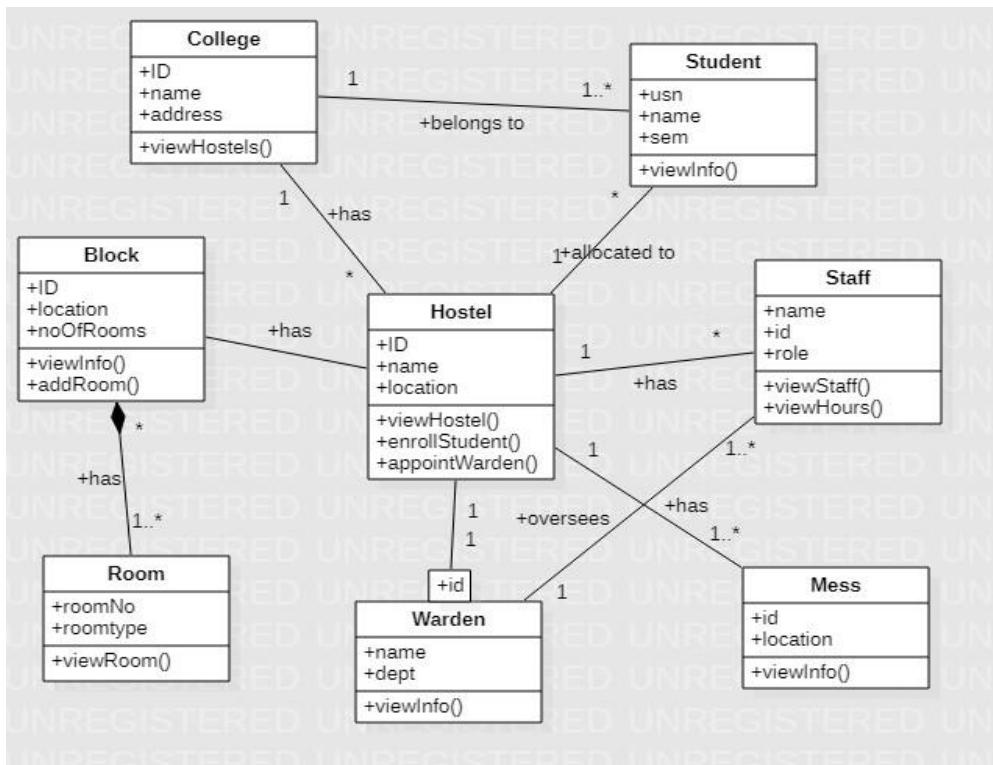
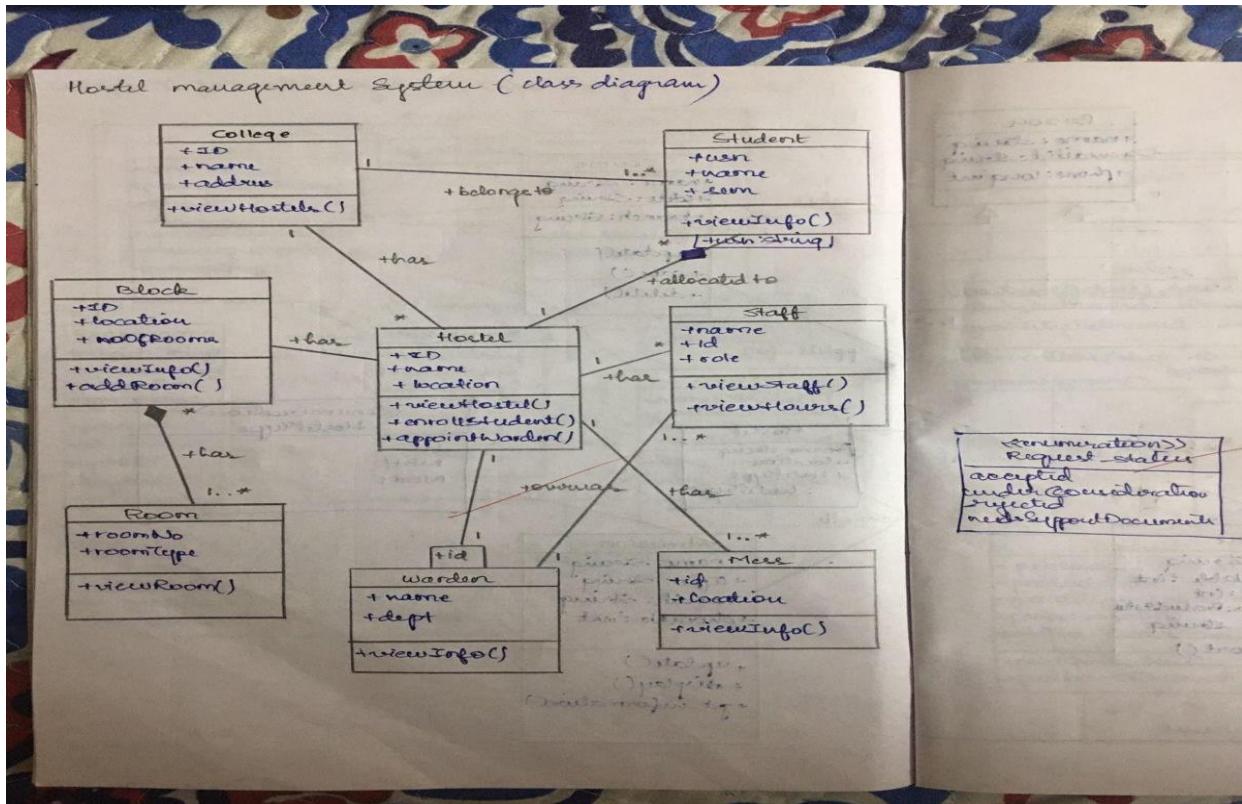
student : A student can view his profile, view
staff information, give feedback, give complaint.

security : He will be assigned the work of
allowing students inside the hostel and make sure
there is safety.

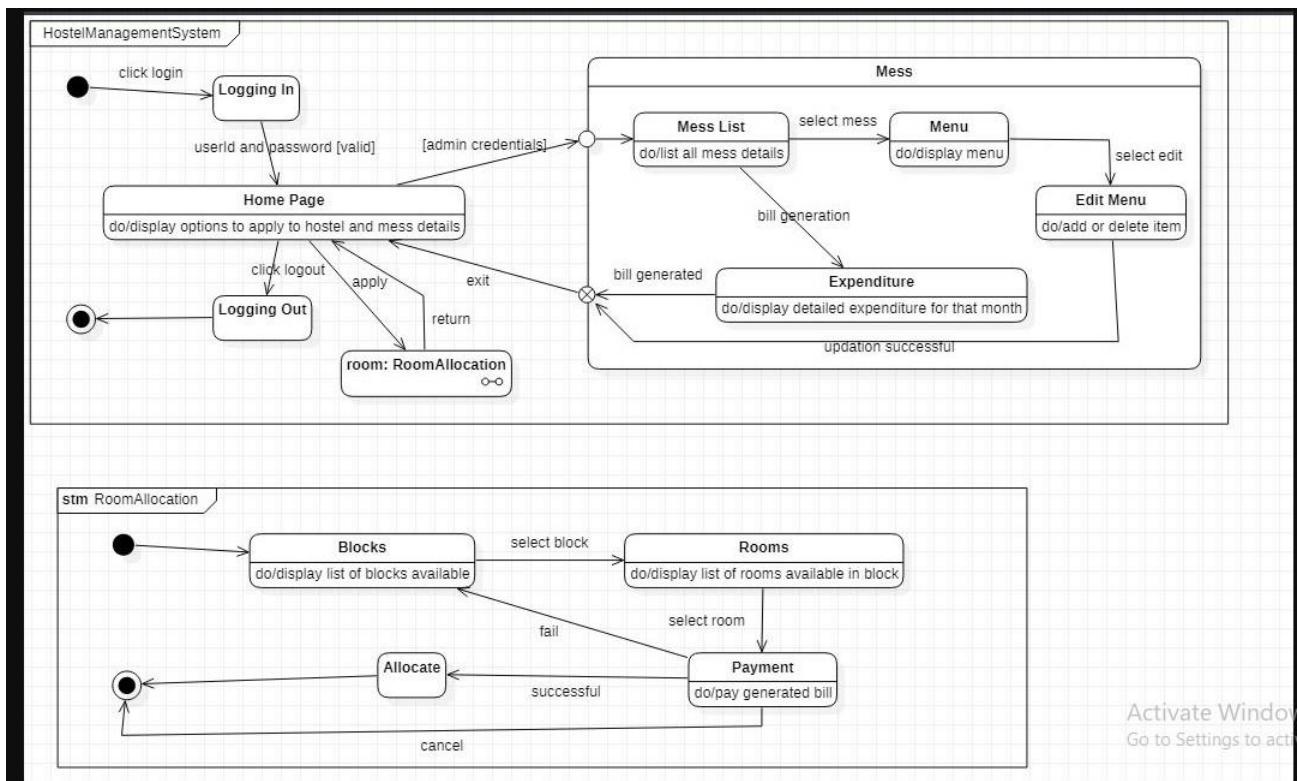
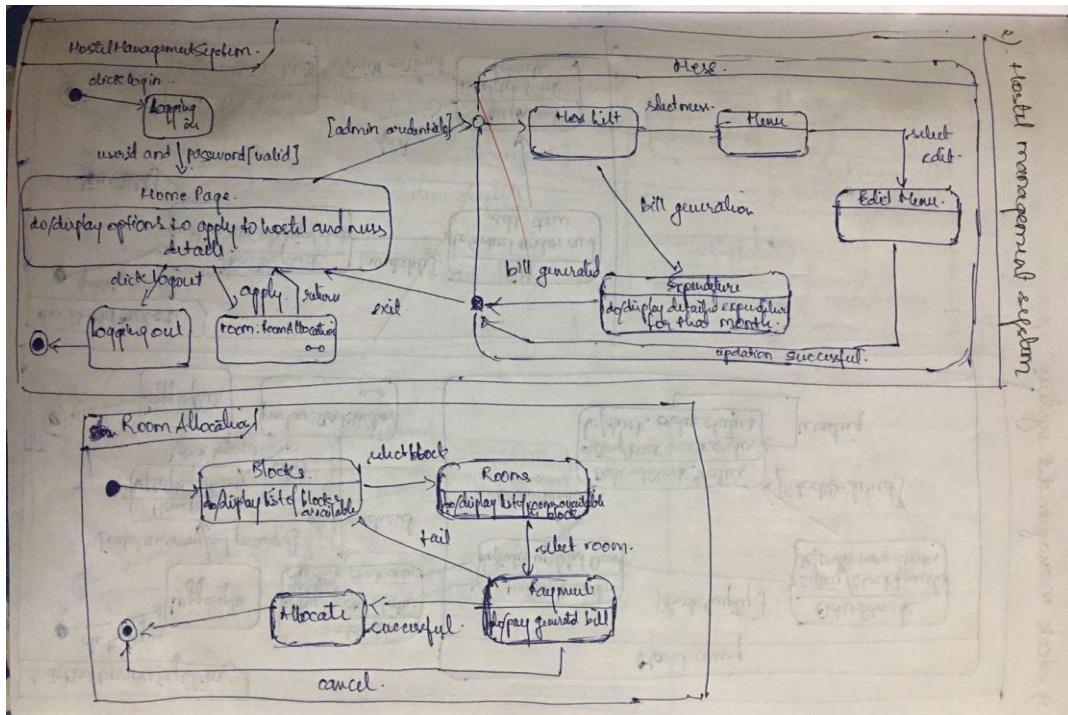
registration office : Here all the fee procedures,
admission, complaint processes will be undertaken.
They'll have all the details of a student and
even the staff.

problem statement : This system is to manage
daily activities of hostel members which includes
staff details, student information, collecting
feedbacks, mess management, security.

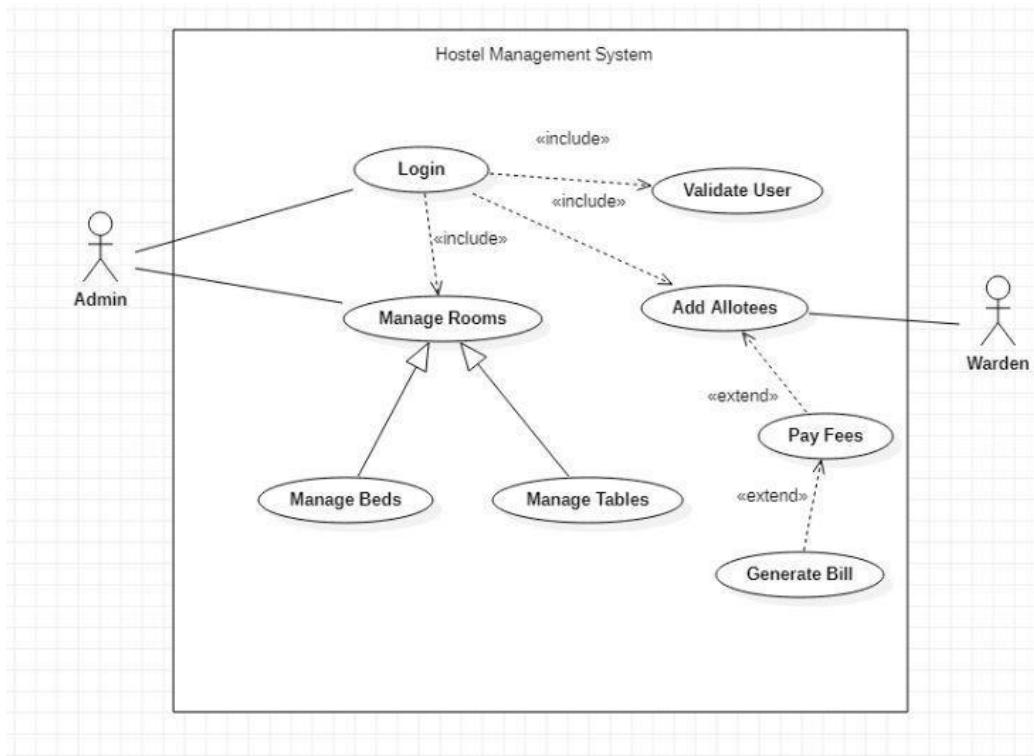
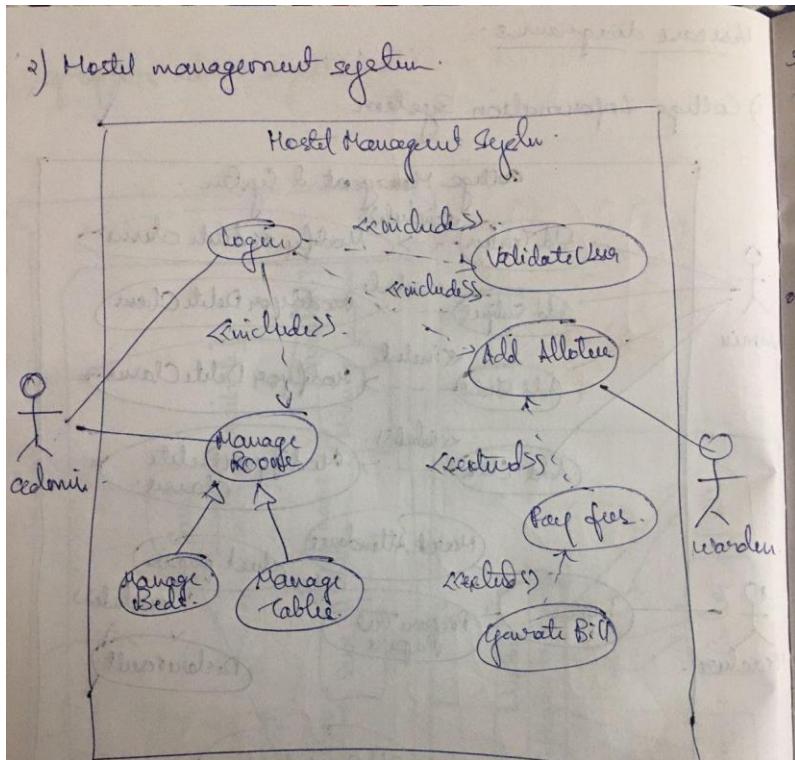
2. Draw the advanced class diagram



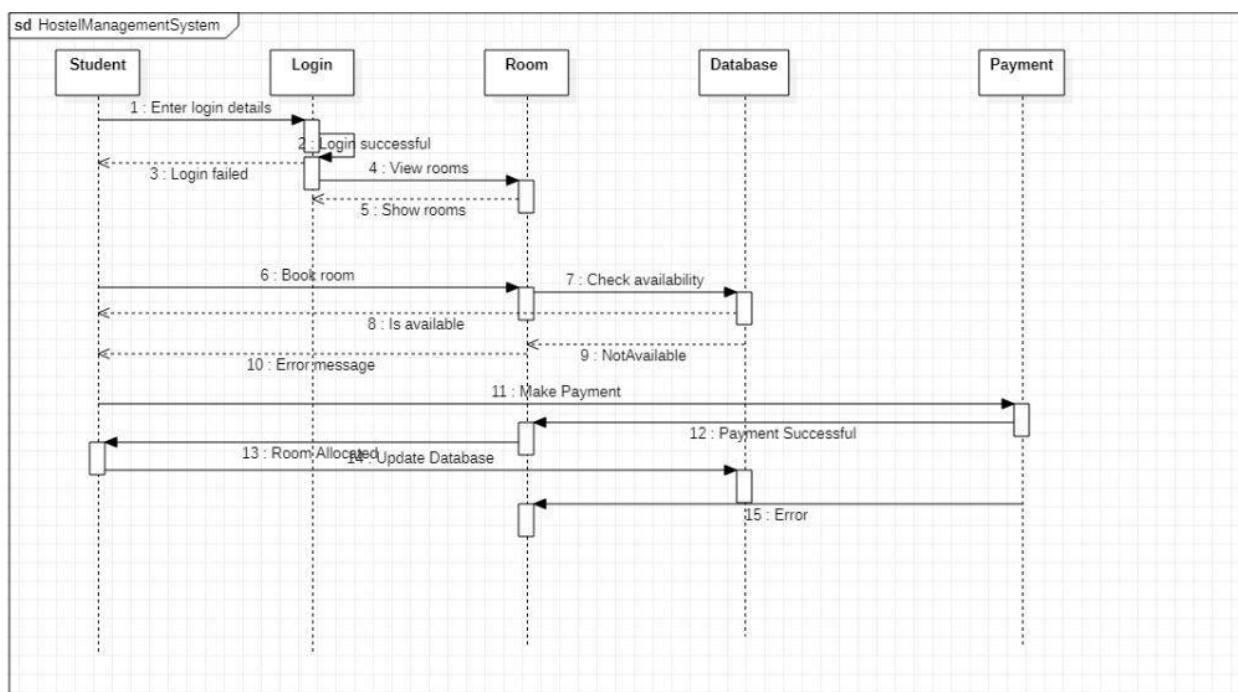
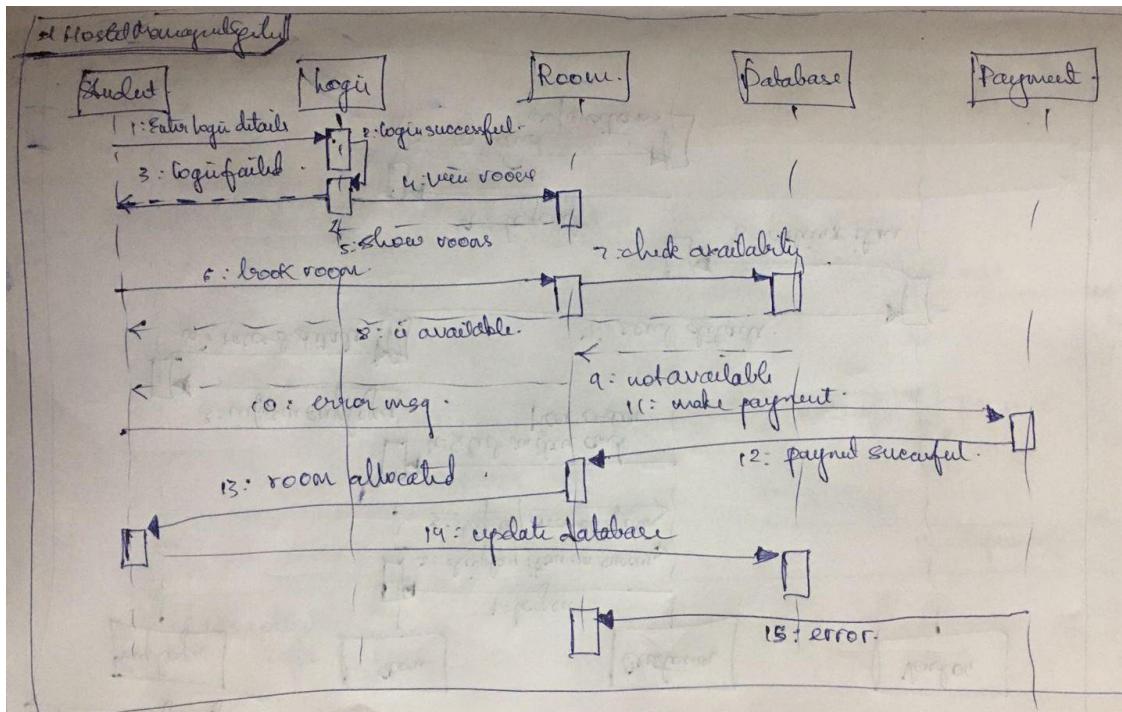
3. Draw the advanced state diagram



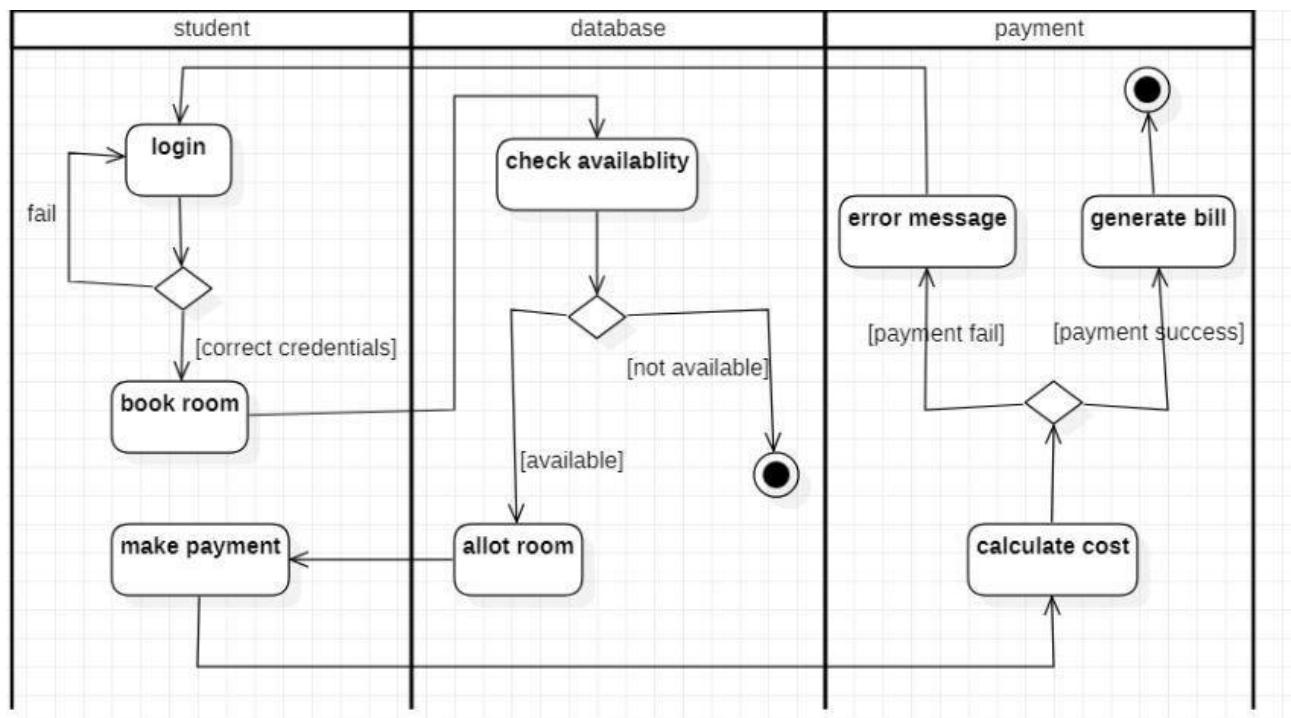
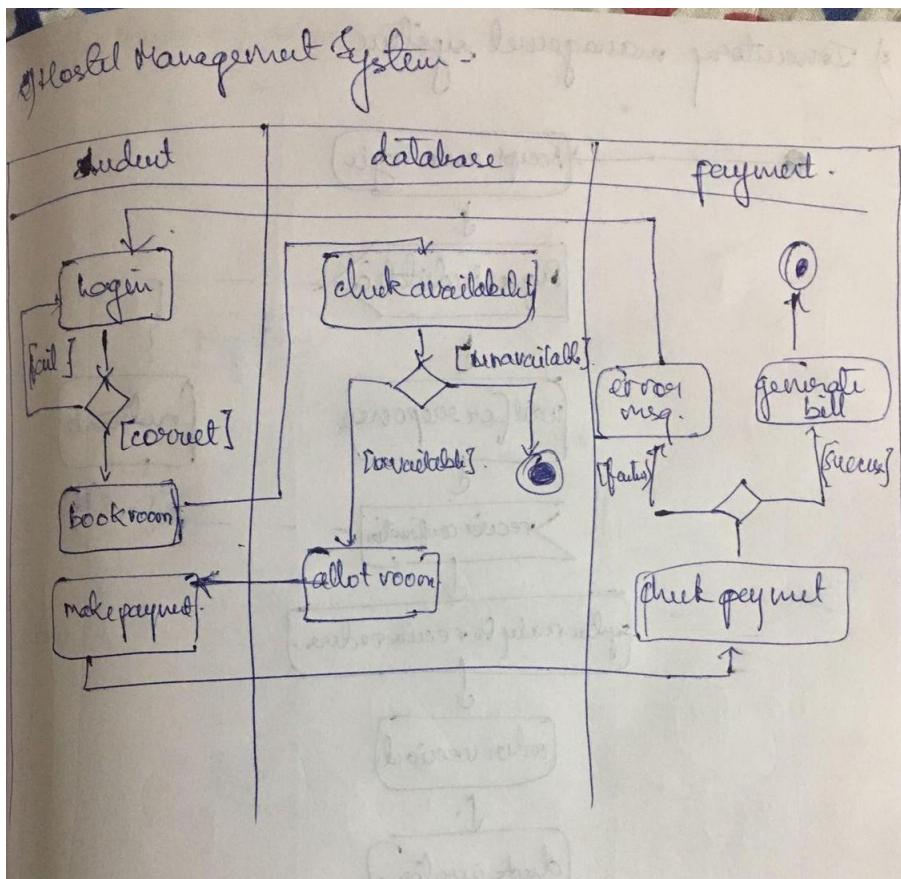
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



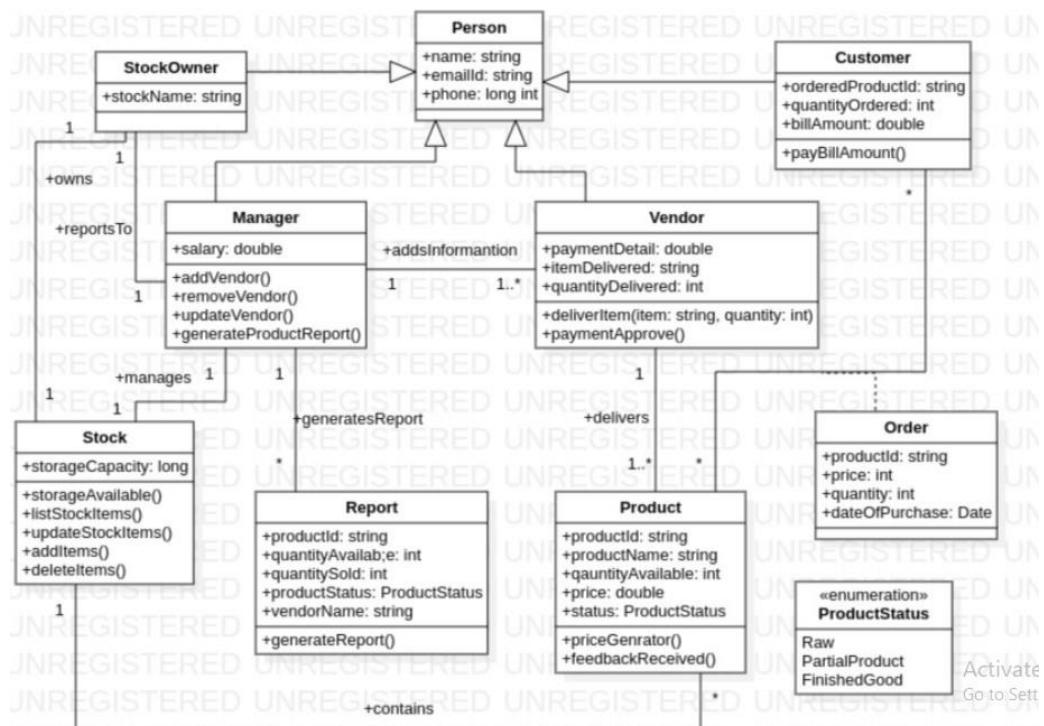
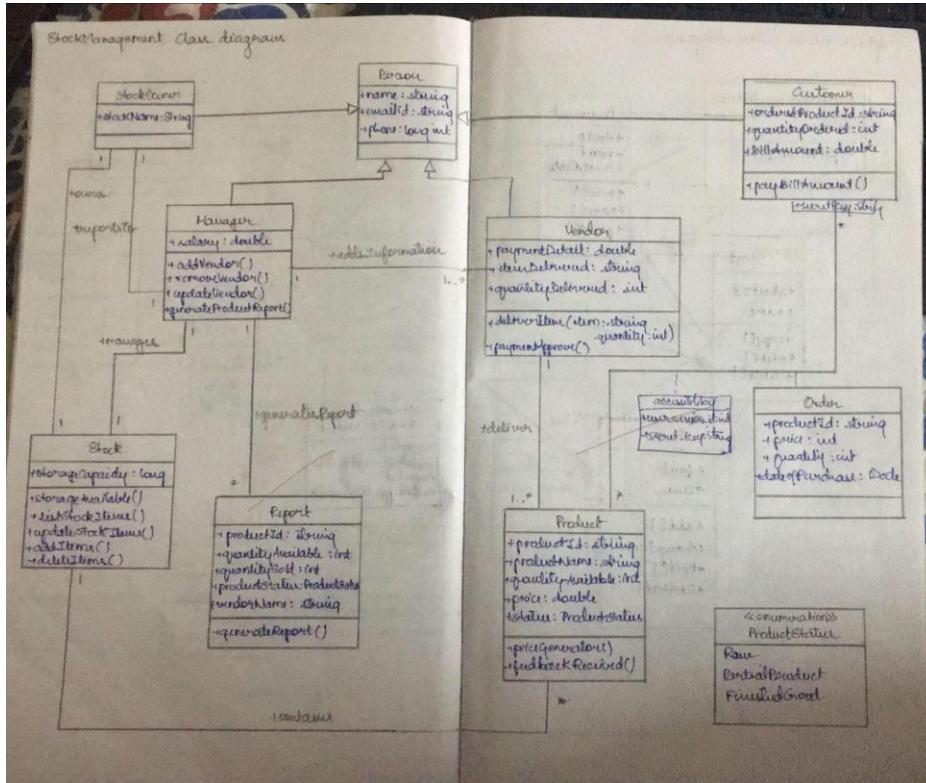
Exercise 3: Stock Management System

1. Write SRS

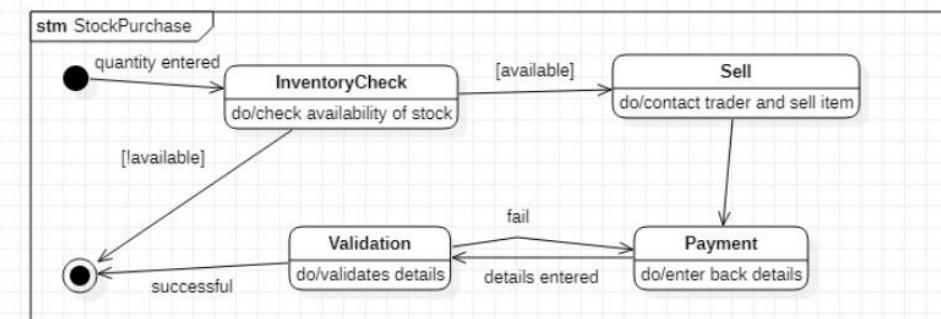
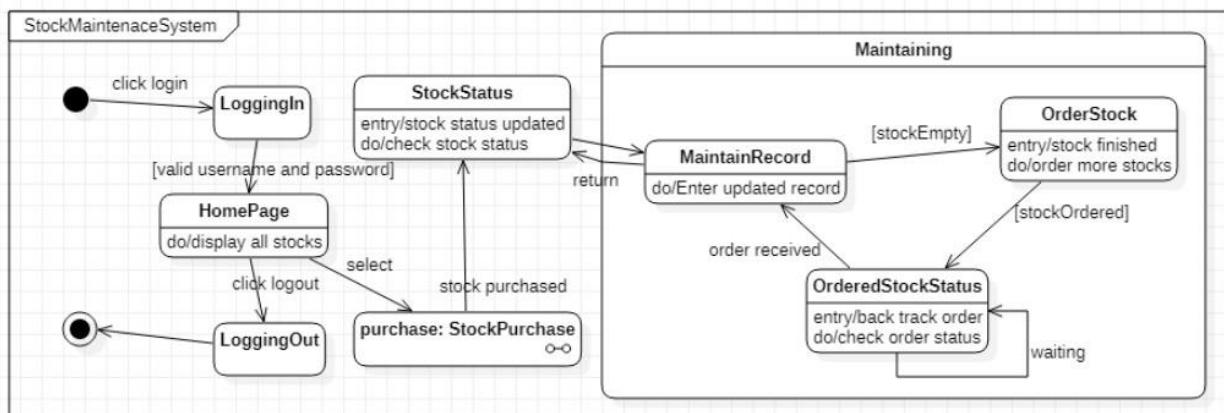
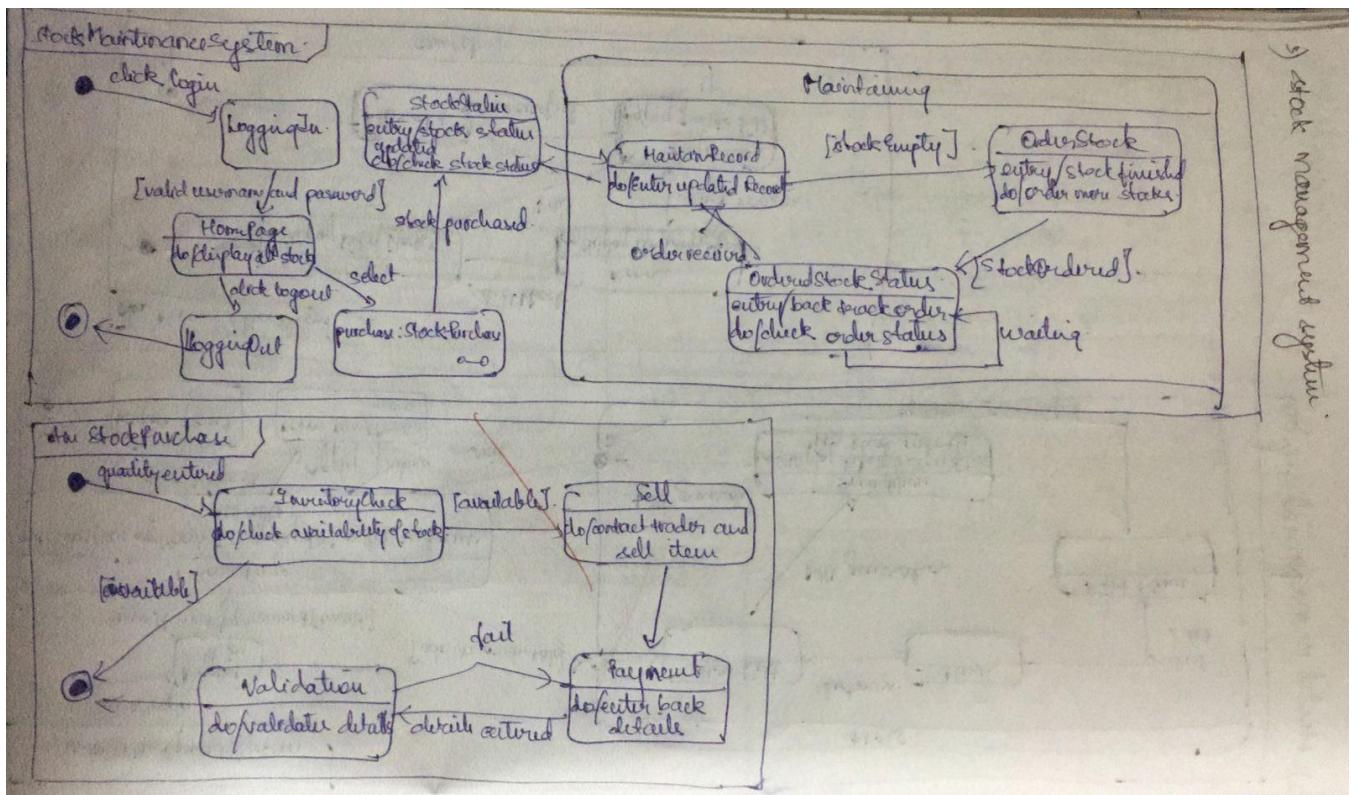
- 3). stock management system ~~for purchase office~~ →
problem statement : It is ordering, storing, tracking, inventory management. This is basically managing items required from raw materials till finished goods.
- manager : He maintains an account on the goods, checks quality.
 - owner : owner can order, sell stocks. He can even make payments, complaint regarding quality, track orders.
 - order details : This will contain basic information about the order like quality, amount, ordered date, delivery date.
 - inventory : This will have the description of inventory management and its type will also be mentioned.
 - stock : This can be viewed, checked, modified, deleted accordingly.
 - product : This can be added, deleted, checked. Product details are also given.
 - Supplier : This person tracks order and supplies goods and collects cash.

Problem statement:

2. Draw the advanced class diagram

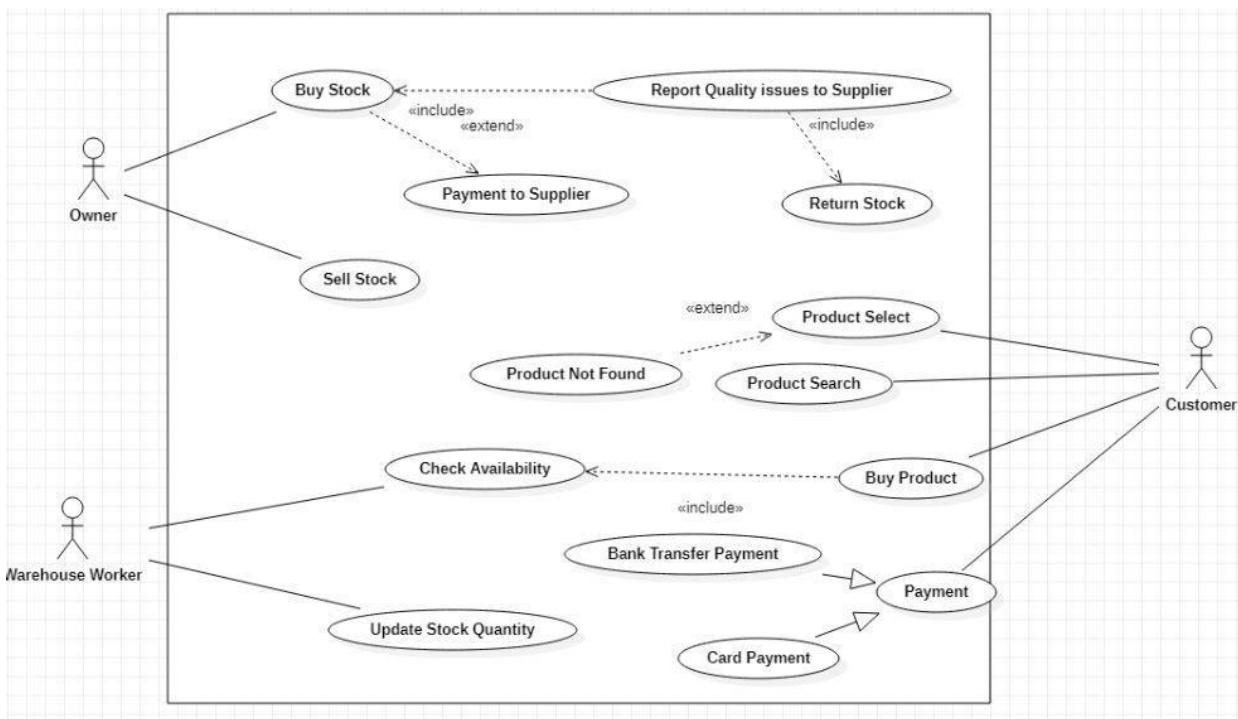
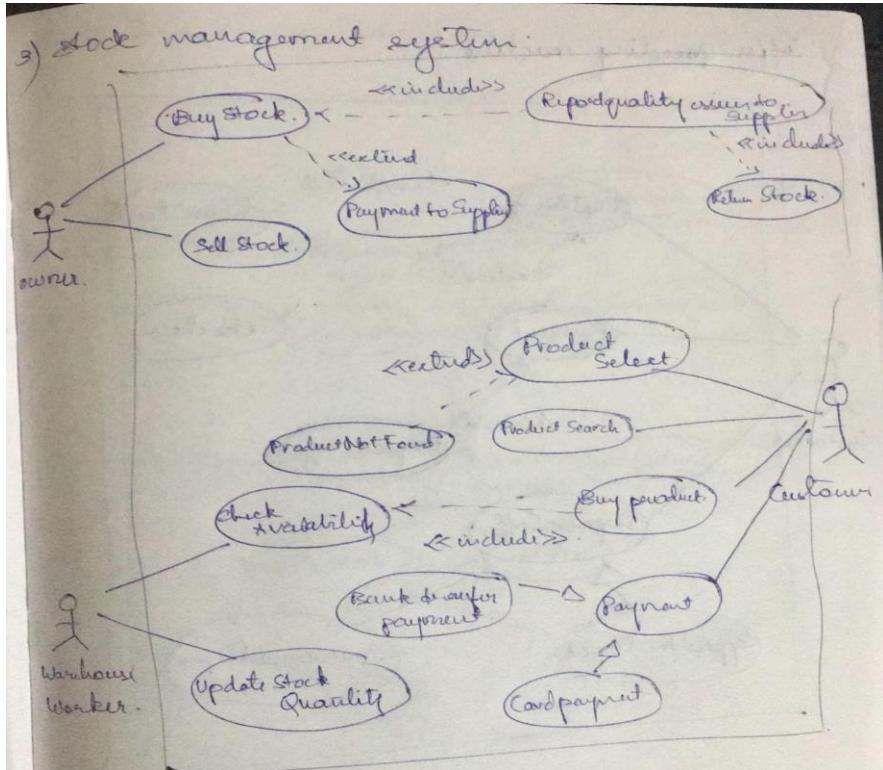


3. Draw the advanced state diagram

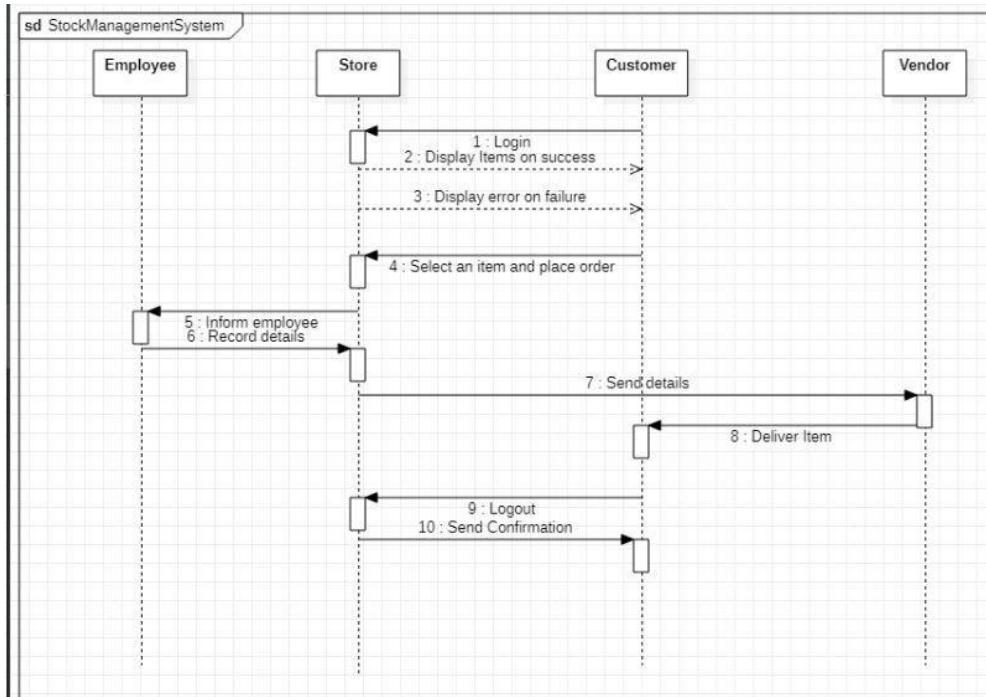
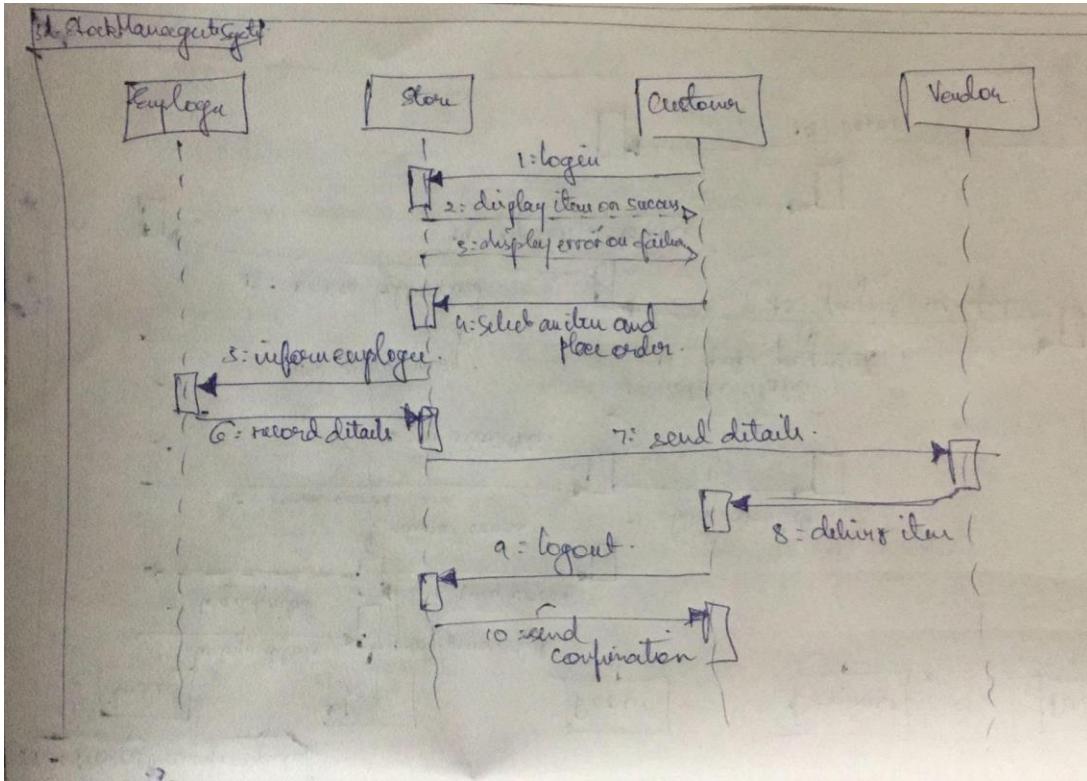


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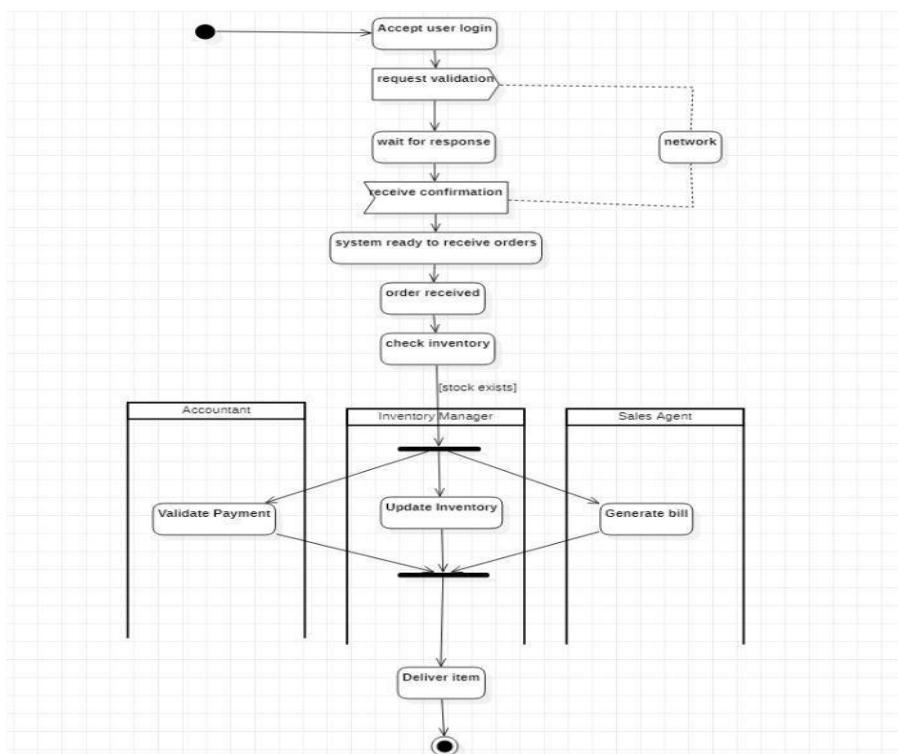
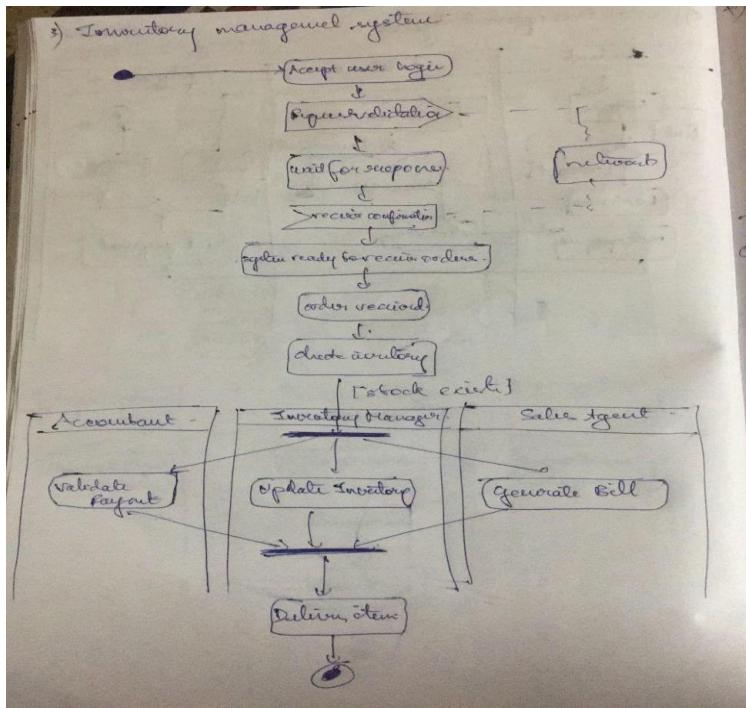
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



Exercise 4: Coffee Vending Machine

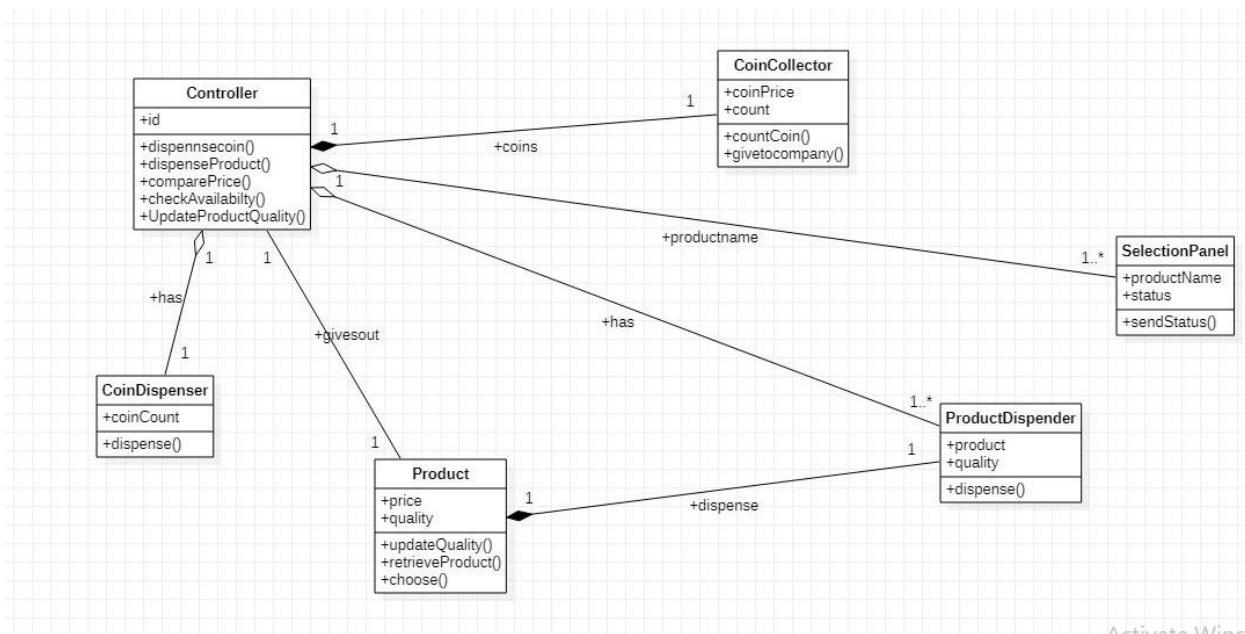
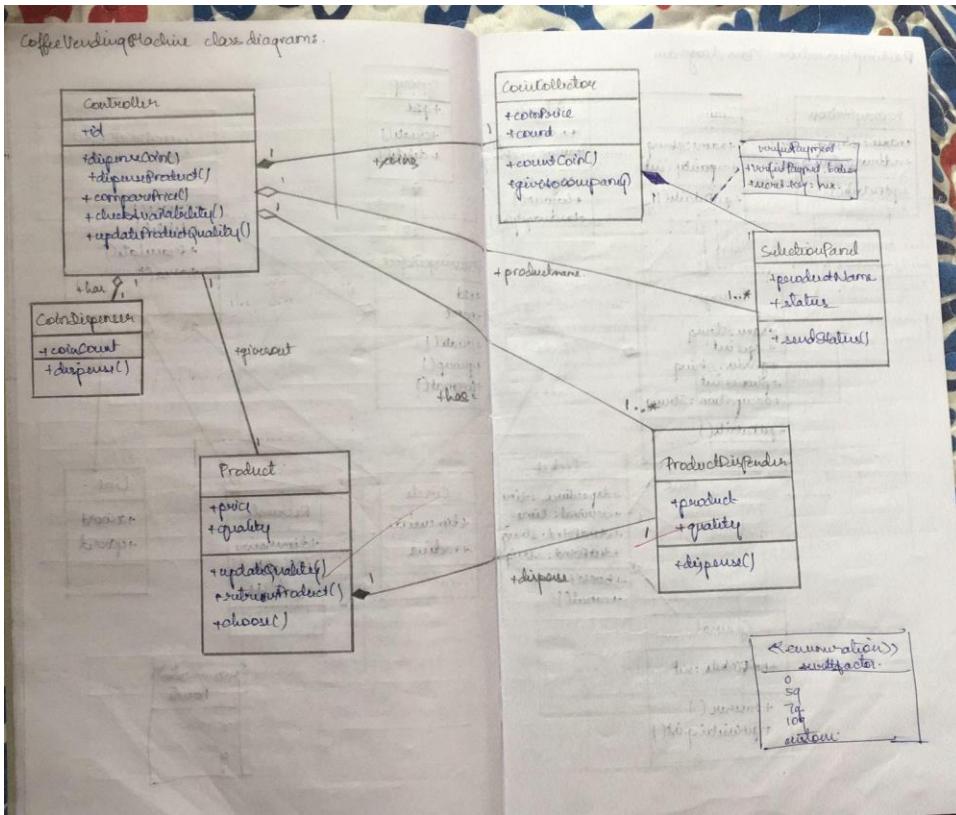
1. Write SRS

4) coffee Vending Machine

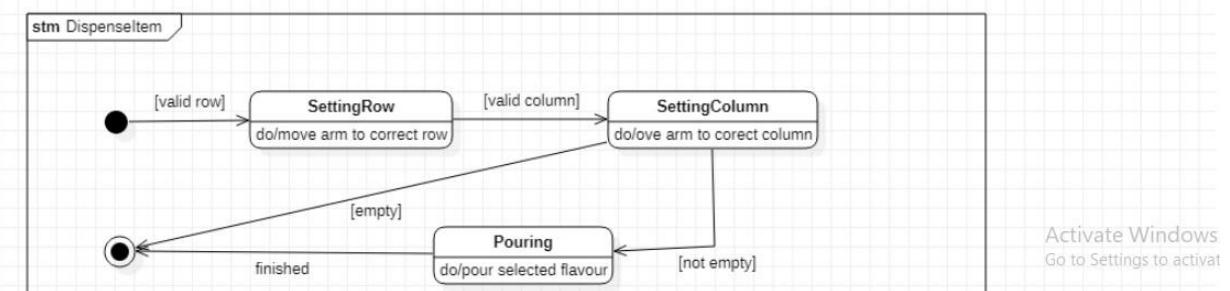
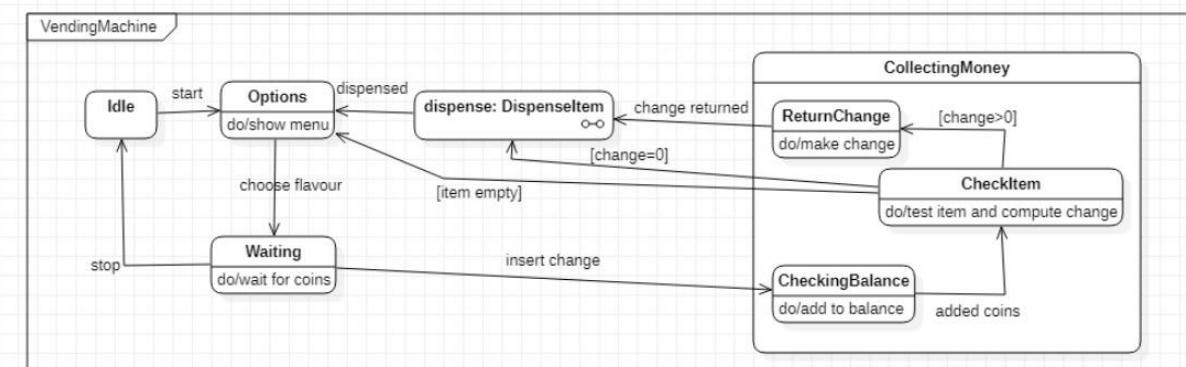
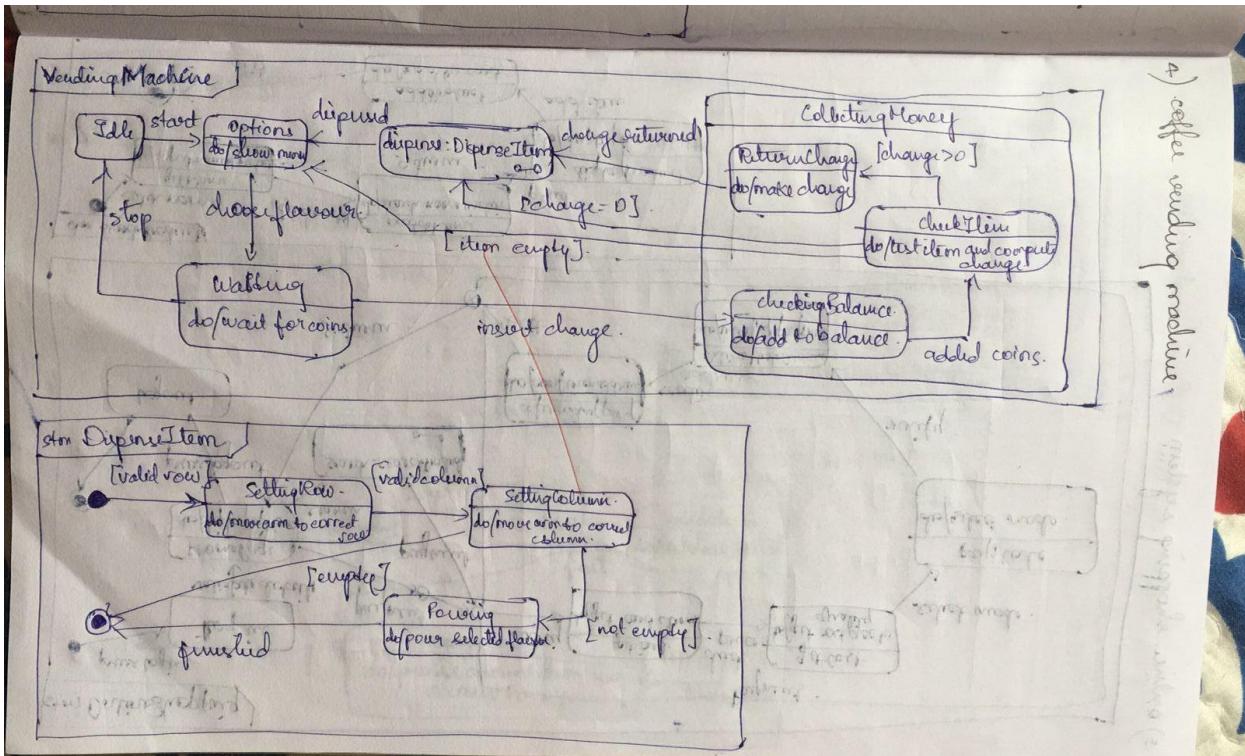
Problem Statement: This machine is basically designed to serve coffee without much of manual effort with the help of information provided by the customer like amount of ingredients, price, type etc. Collect a coin and dispenses coffee when the button is pressed (of choice) and the payment is done.

- coin collector: This will count number of coins and cost of each, gives it to company.
- selector: This will have the information of selected product.
- controller: When the coin is inserted it'll check the price, check product availability, dispense the coffee, update the quantity after each operation, release the coin back to the customer.
- dispenser: the type of coffee chosen will be dispensed.
- product: we can choose the type of coffee, amount of product and the price too. We can update after every dispense and retrieve chosen product.
- CoinDispenser: Remaining cost will be given back to the customer.

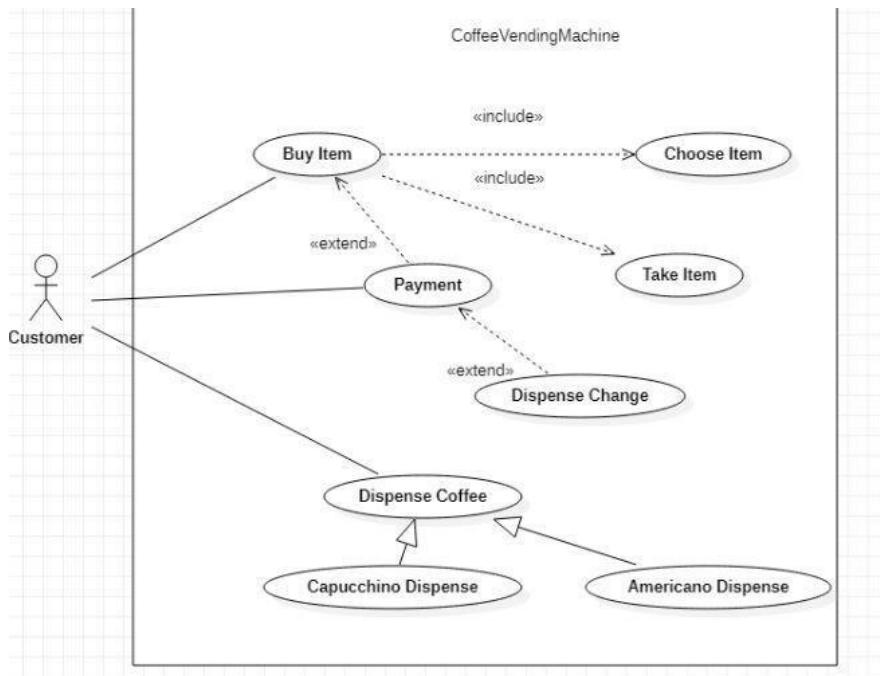
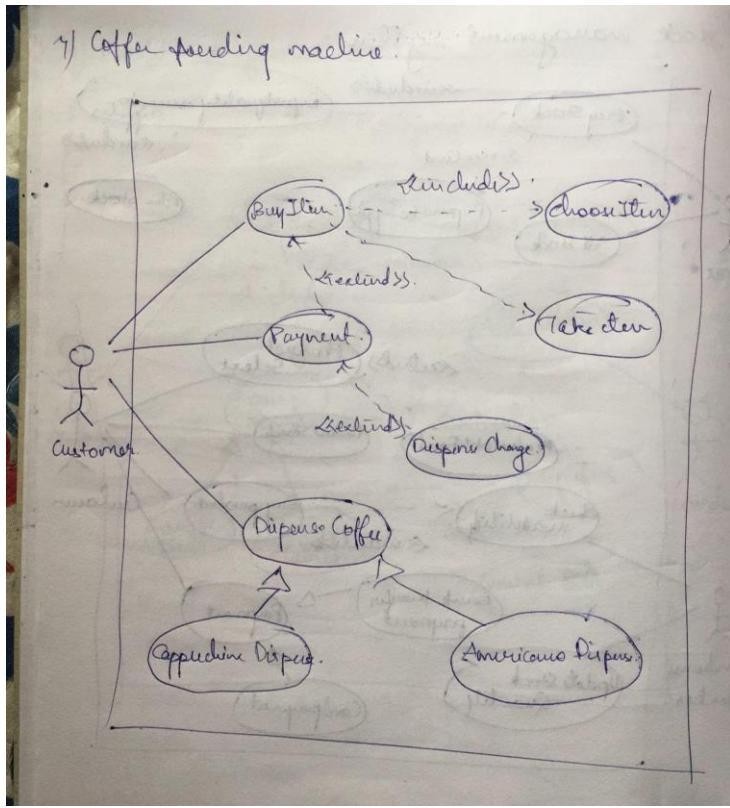
2. Draw the advanced class diagram



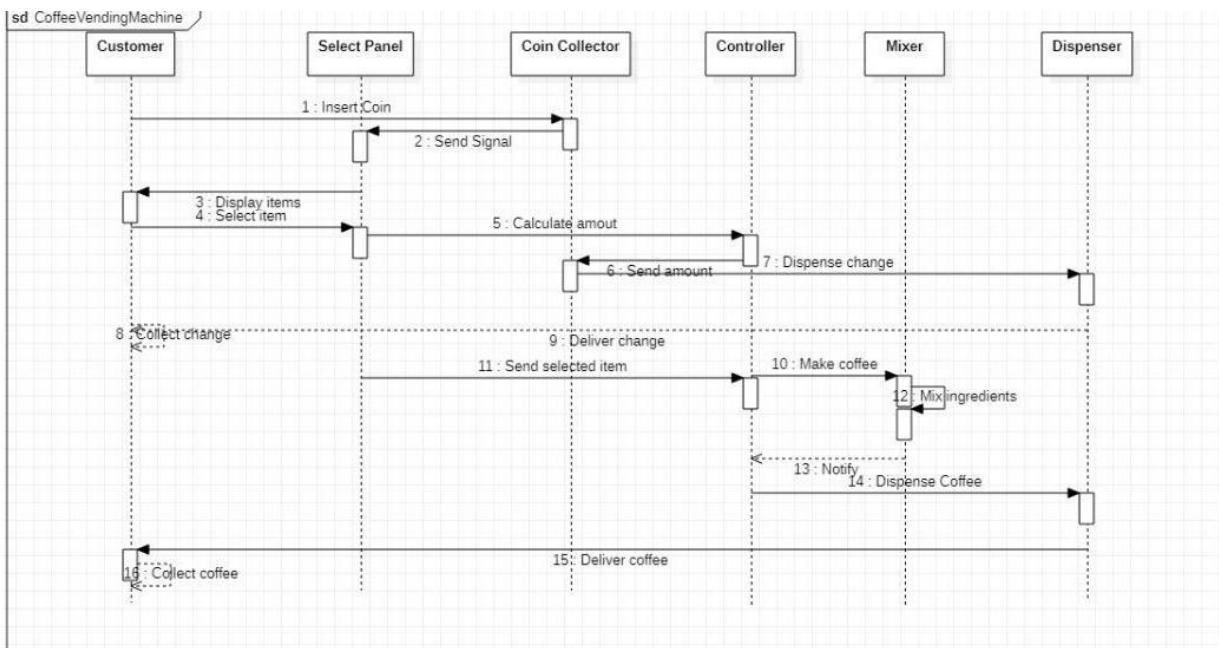
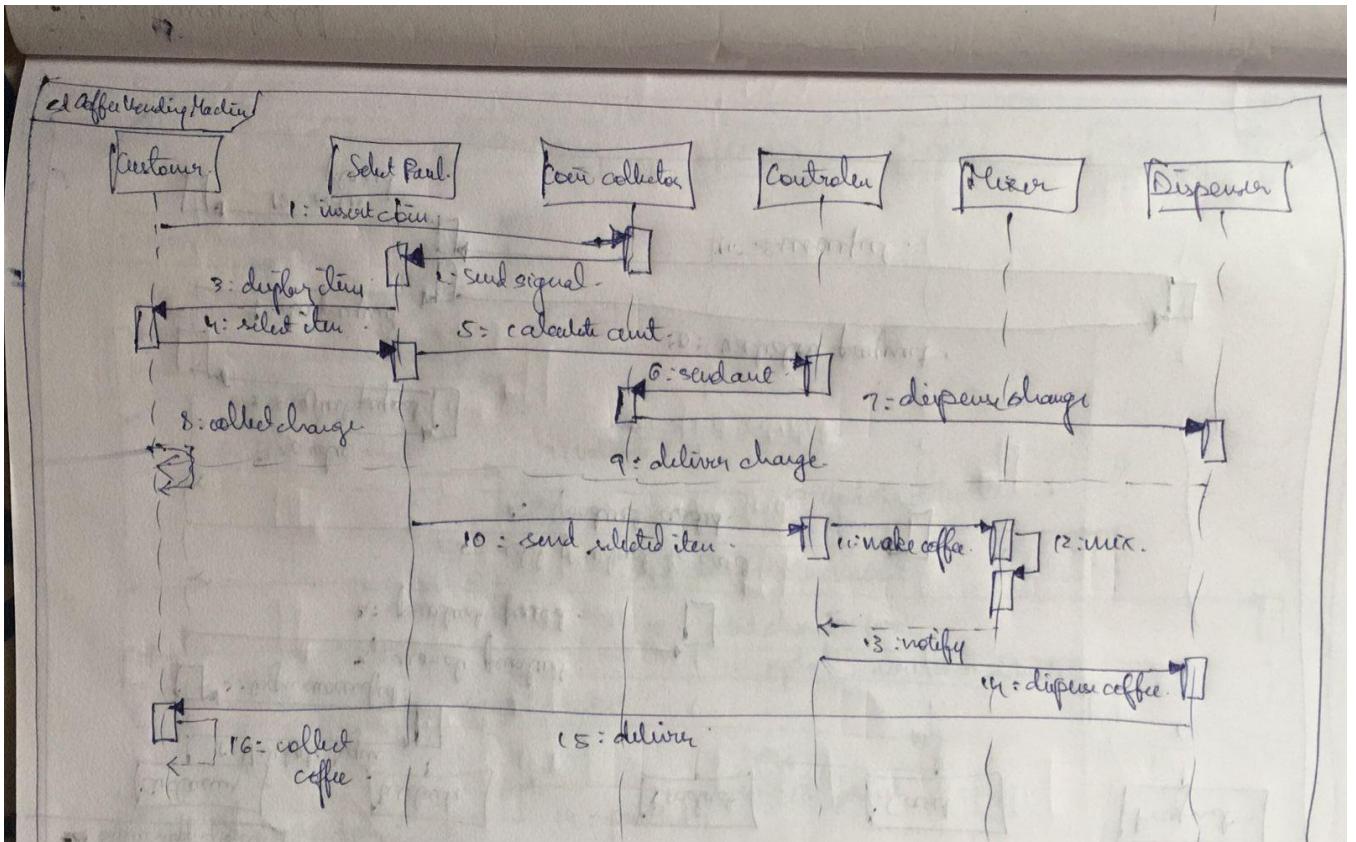
3. Draw the advanced state diagram



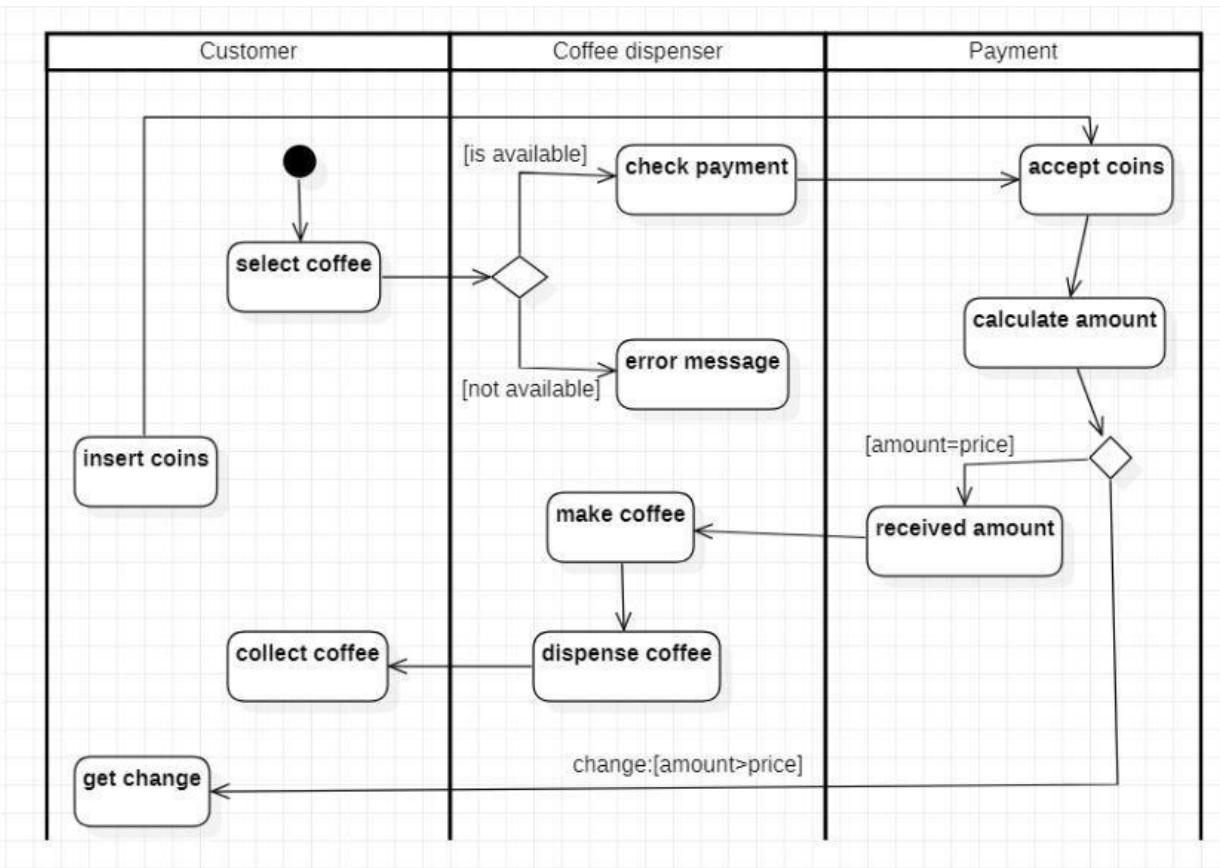
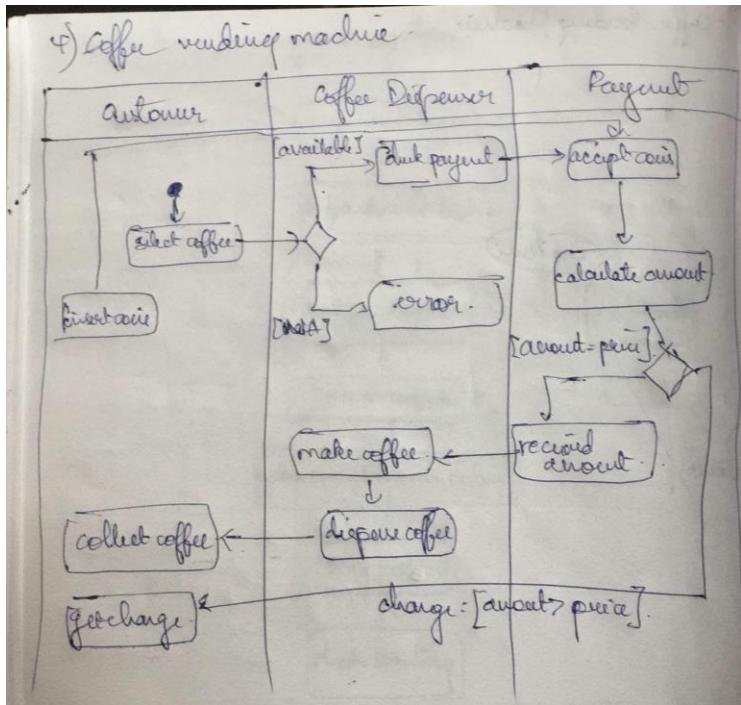
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



Exercise 5: Online Shopping System

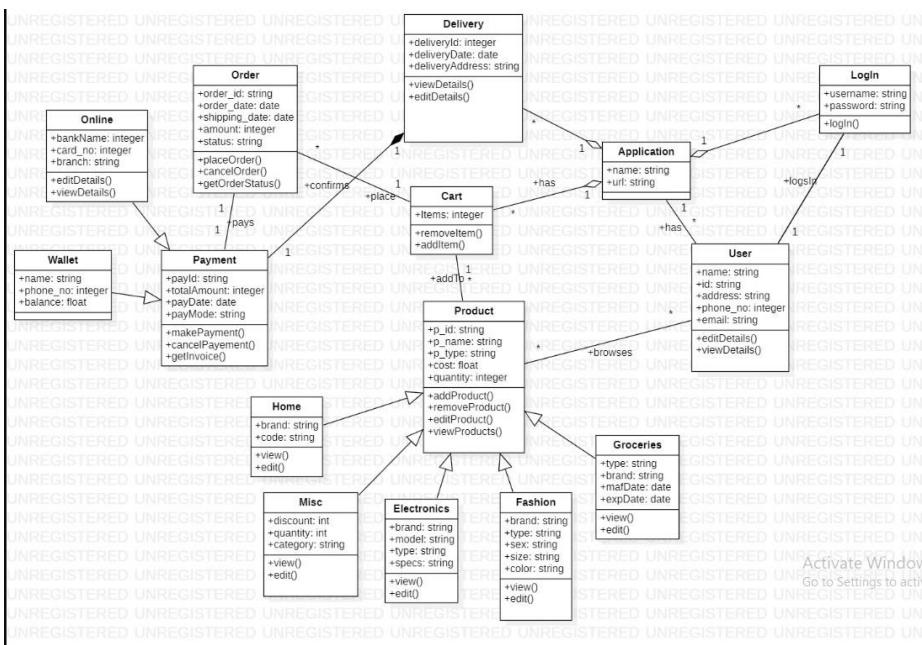
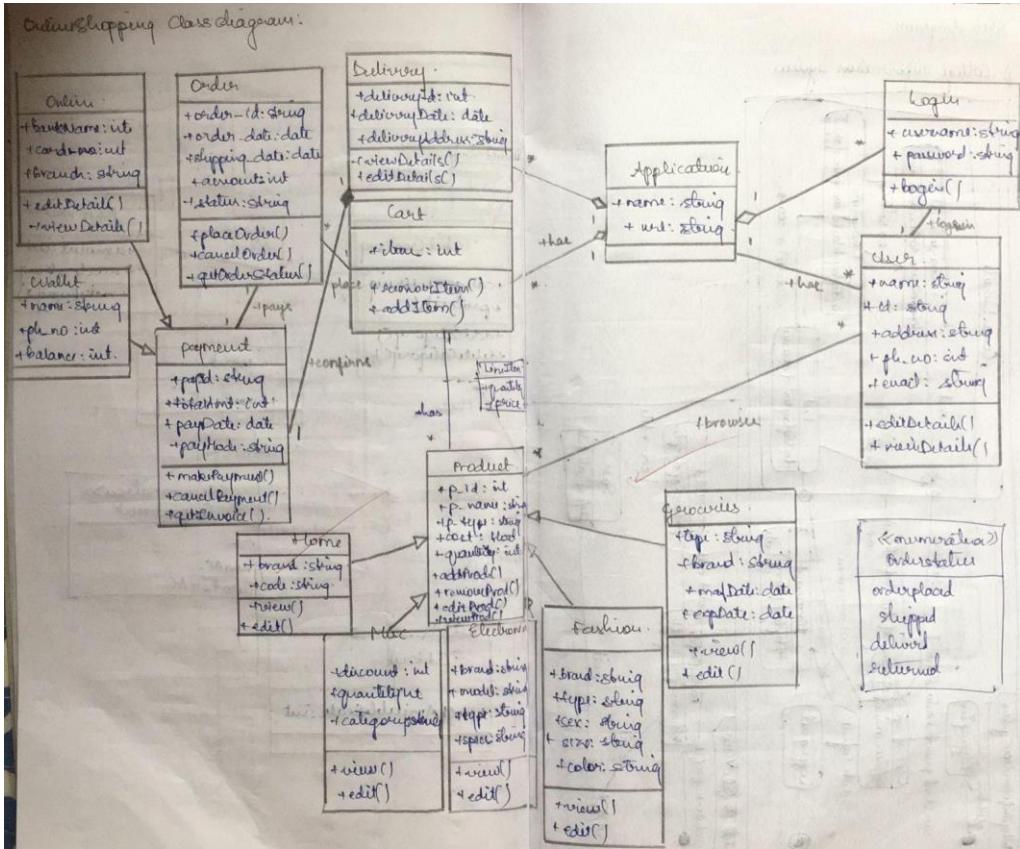
1. Write SRS

b) Online Shopping System :-

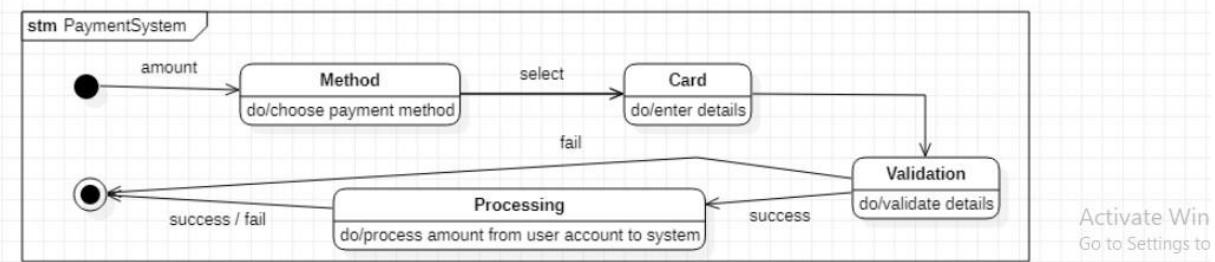
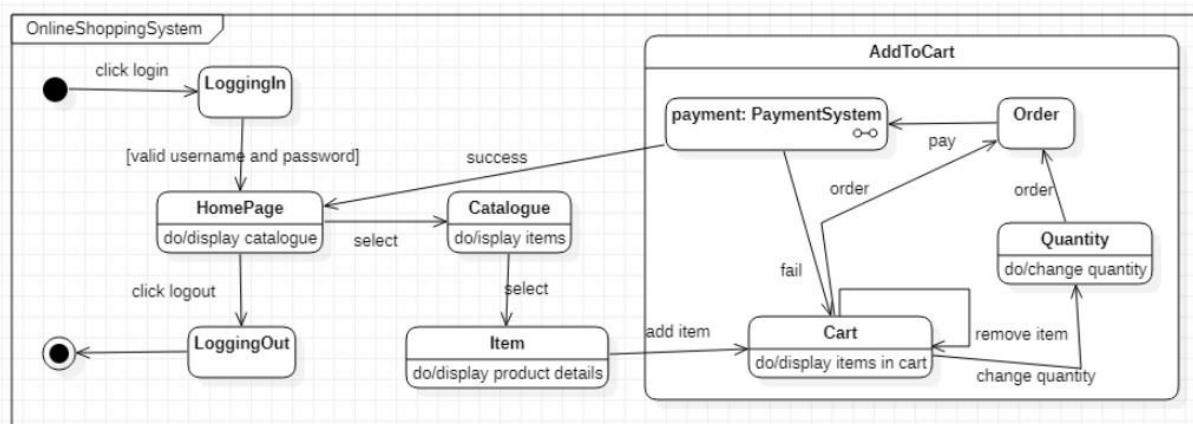
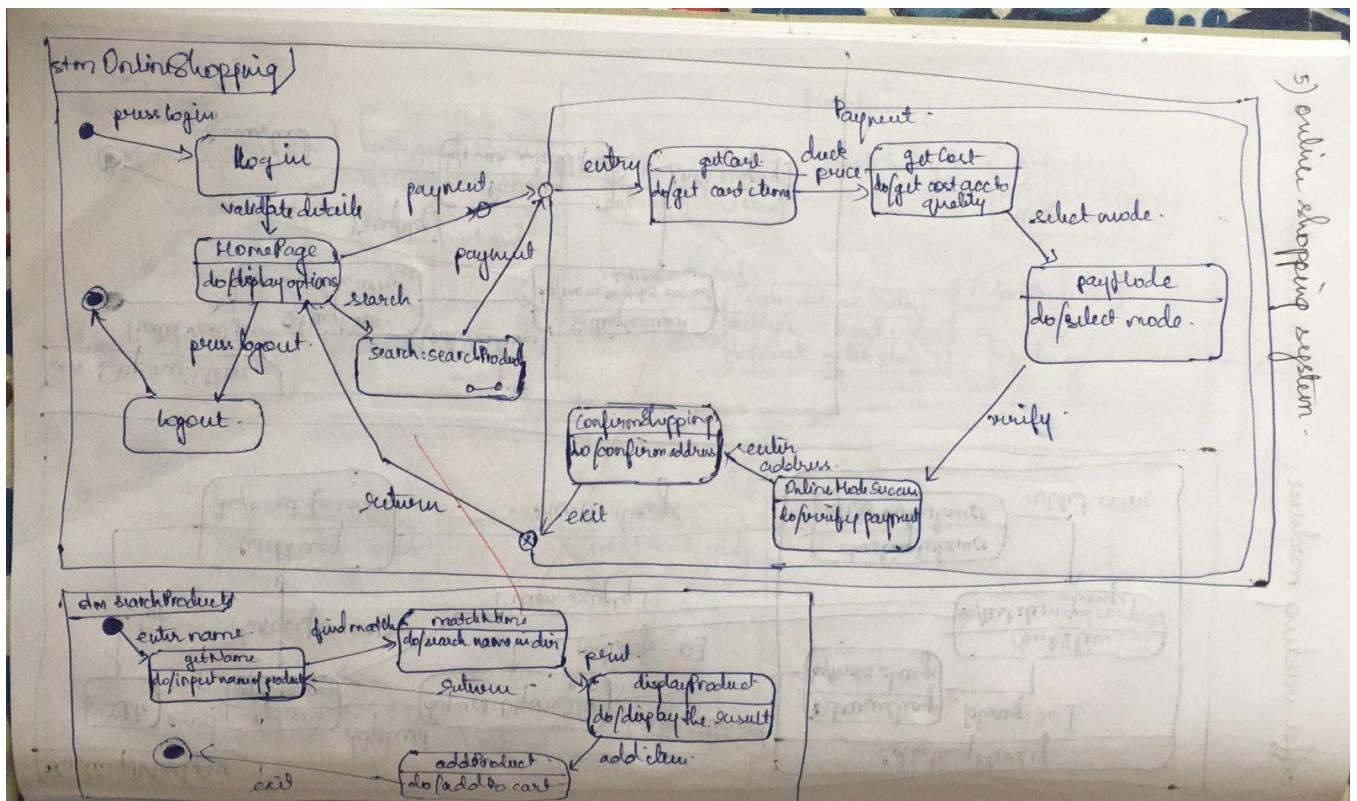
Problem Statement: This system is to reduce time, and energy as in offline shopping. We can go through products, their price, manage orders, customer service etc.

- system: Here system is handled by an user who can be admin, manager, customer.
- customer: They can register themselves online, create an account, add products to cart, update profile, manage payments etc.
- shopping card: This displays all those products which customer planned to buy. Adding, deleting, updating, checkout, calculating can be done here.
- orders: We can see the list of items ordered, the ordered date, shipped date, expected delivery date, customer details etc. With the help of existing order details, various orders can be placed.
- orderdetails: Further details about order like quality, cost, product details etc.
- manager: He manages services for customer for example listing products, getting customer details, give order details, department details.
- shipping: All details related to shipping will be shown once the order is placed and will be able to update any changes.
- Department: Describing each department/section.
- products: Image, price, quality of the product.
- category: each department has various categories.

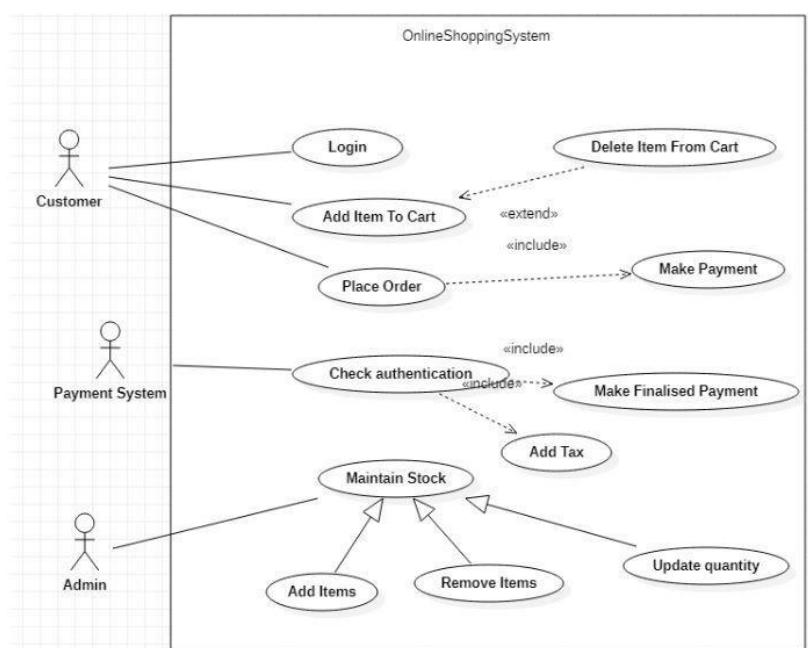
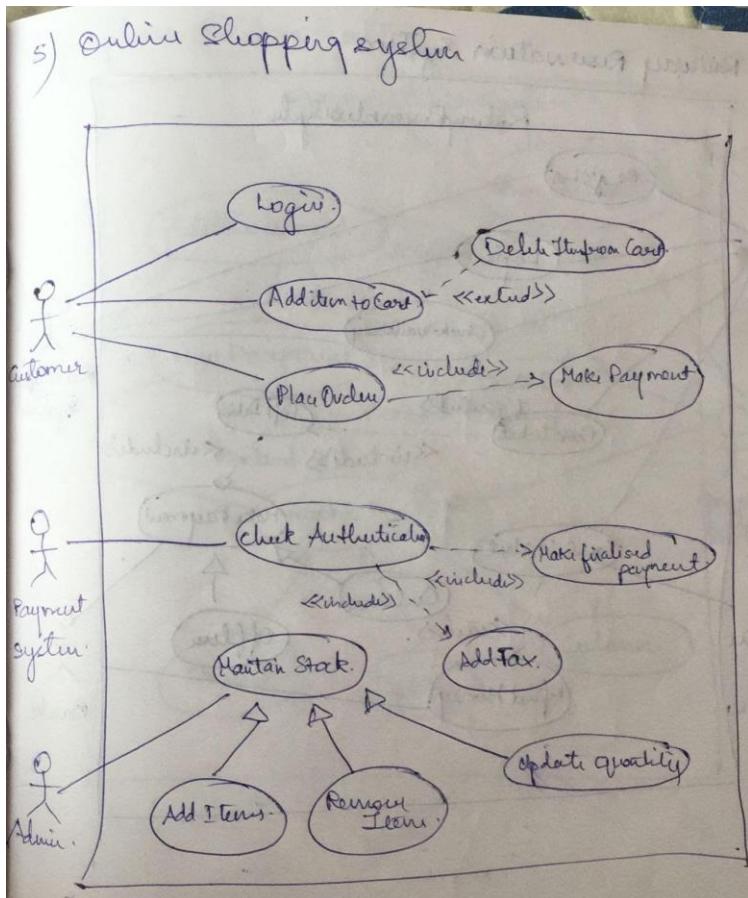
2. Draw the advanced class diagram



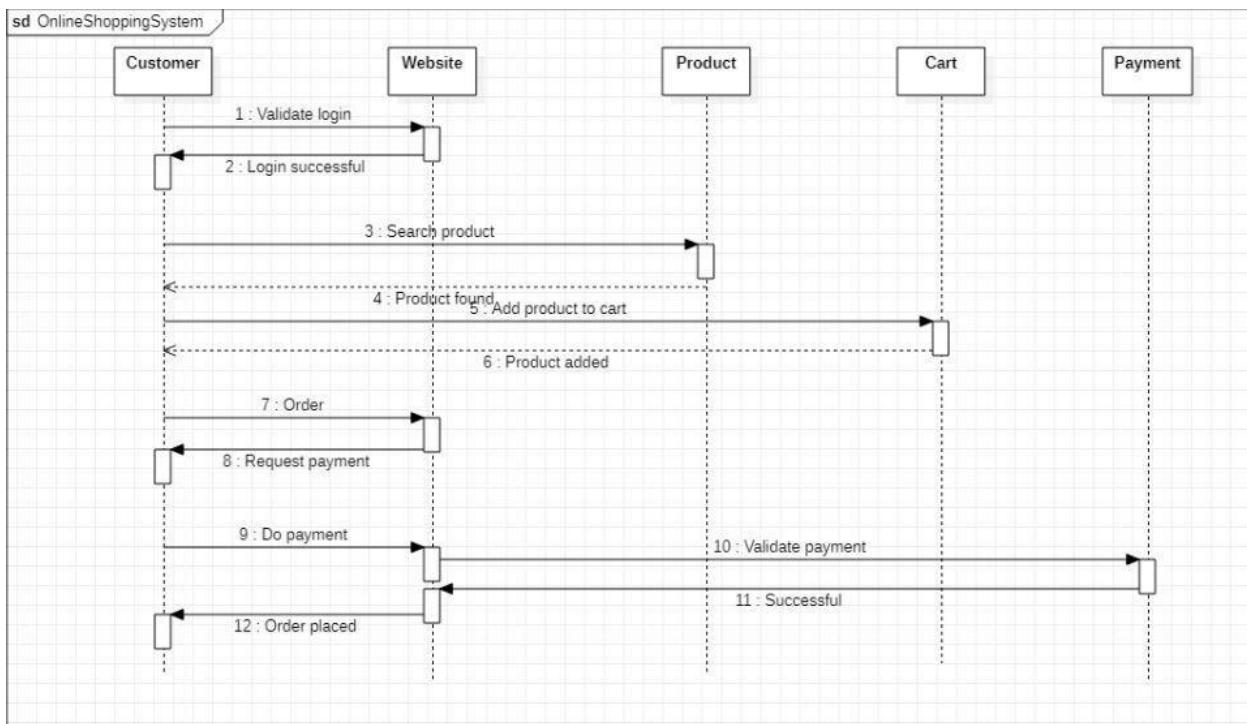
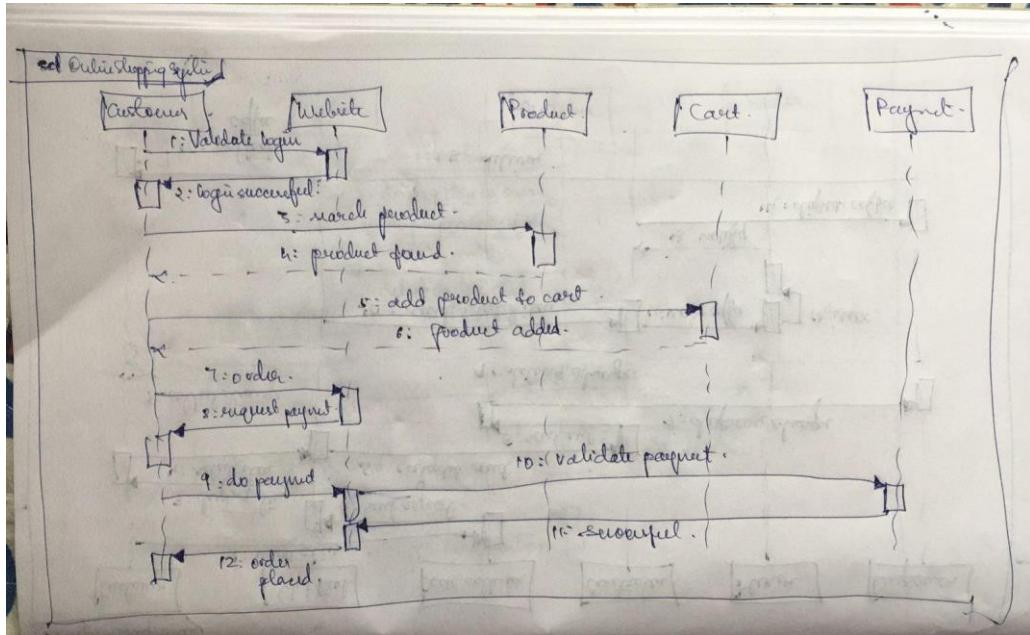
3. Draw the advanced state diagram



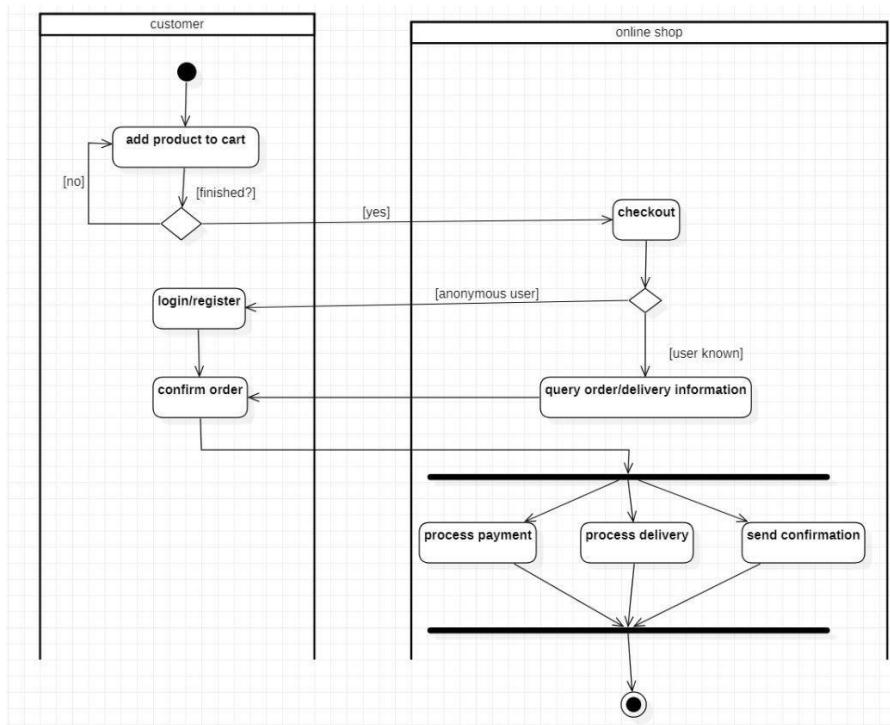
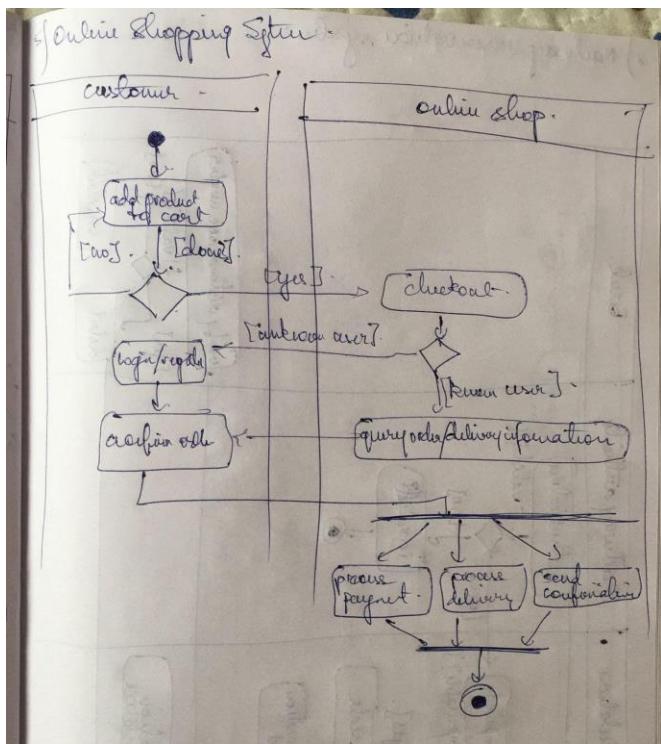
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



Exercise 6: Railway Reservation System

1. Write SRS

6) Railway Reservation System

Problem Statement: This is an easy, handy, user-friendly platform (online) which enables user (customer) to book ticket online itself just by one click instead of going there physically and online payment is also available.

System: provides train timings, reservation details, payment and cancellation details.

Reservation: Shows types of reservation like ~~seat~~, reservation confirmation, reservation against cancellation, waiting list reservation, online and onspot reservation.

Booking

class: Decides the quota, type of compartment and fare accordingly.

ticket: shows the type of ticket booked whether it is general or tatkal.

timetable: this basically shows train name, its arrival time, departure time, next upcoming train etc.

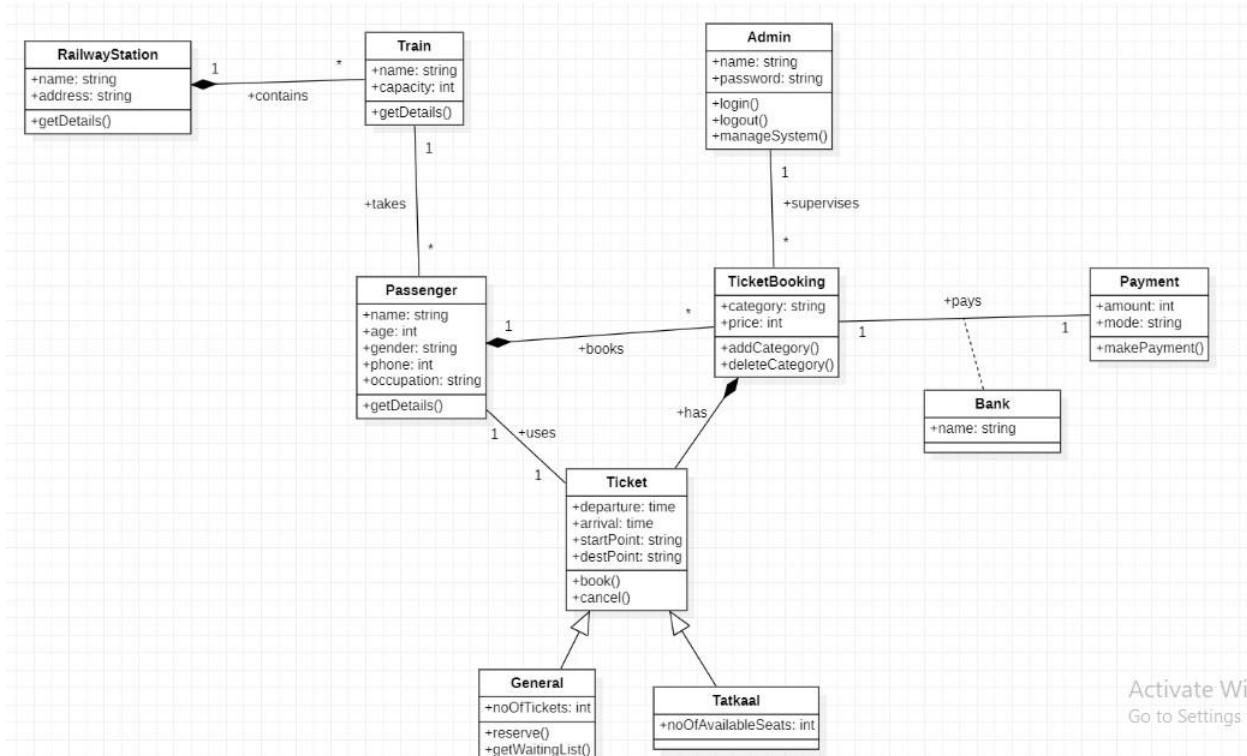
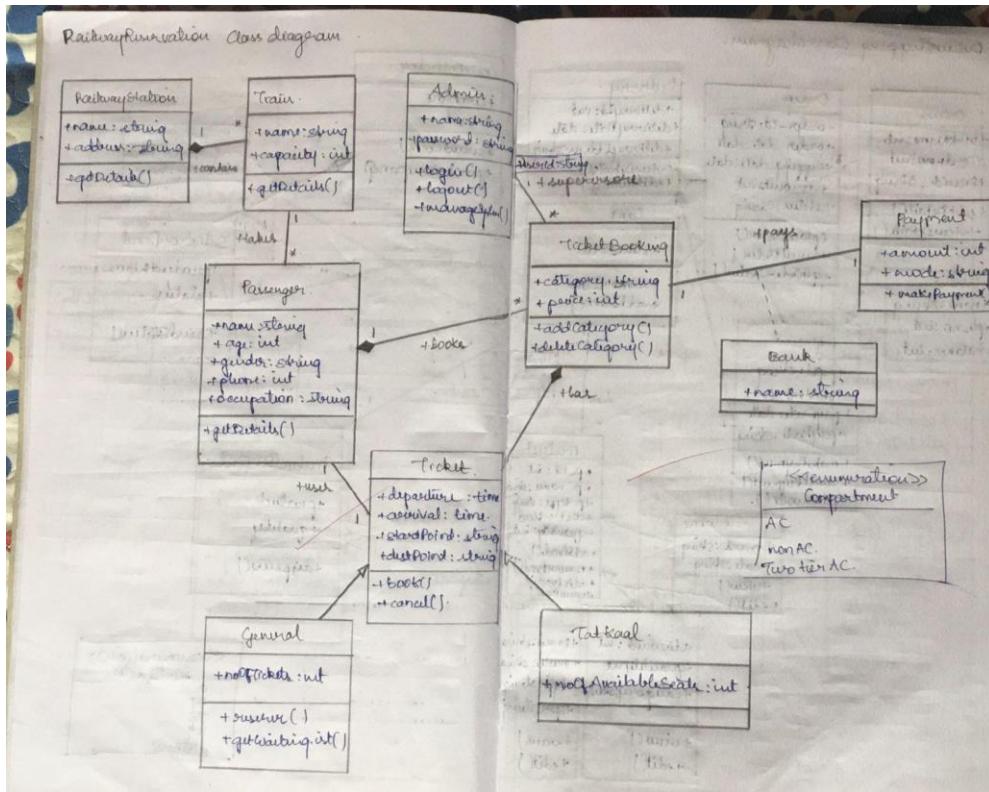
fares: displays the fare for each train between any two stations.

status: we will know the status of our allotment -

availability: mentions if a particular train is available during that time so that we can book.

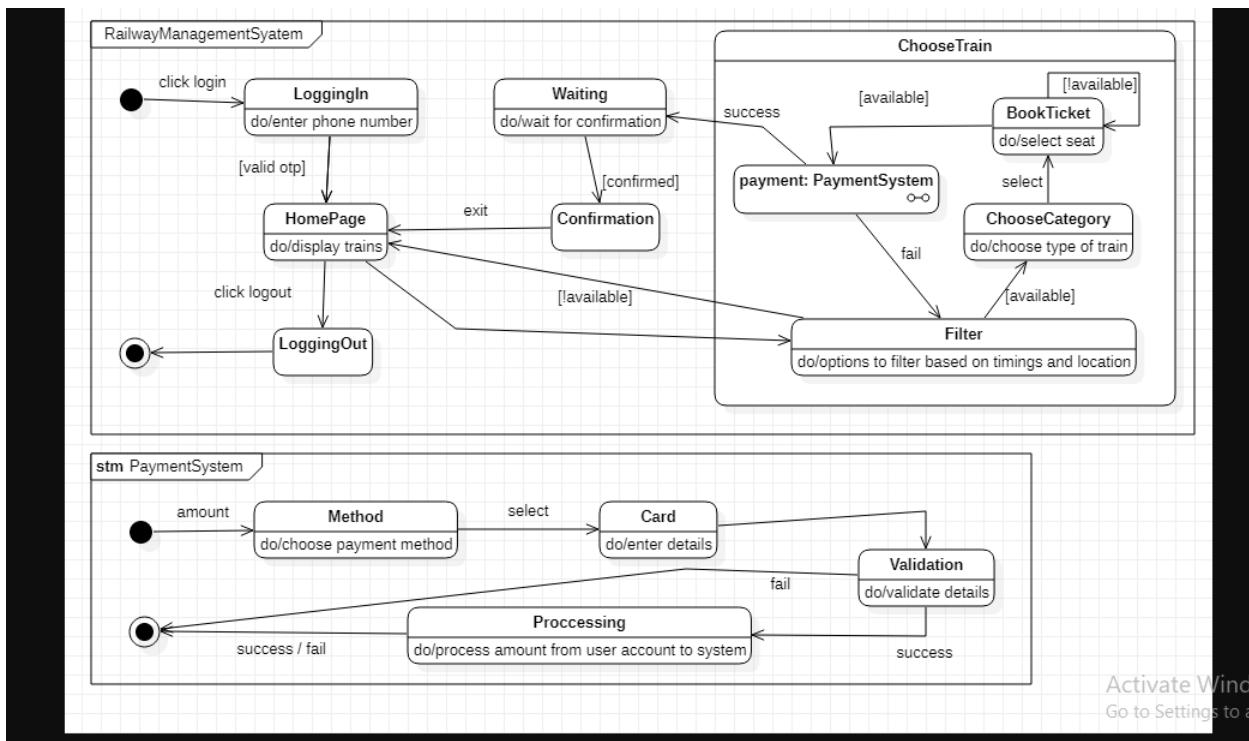
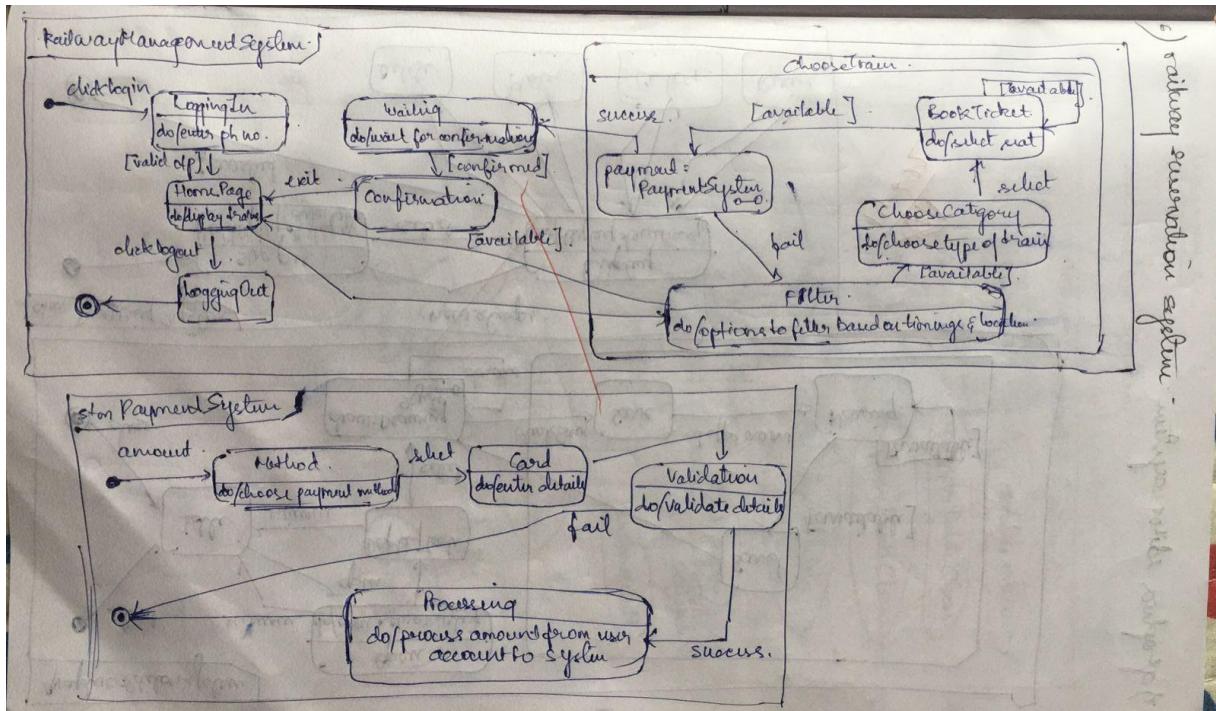
accommodation: which compartment is allotted, if its ladies or general section, ac or non ac, sleeper or sitter all such things will be mentioned.

2. Draw the advanced class diagram



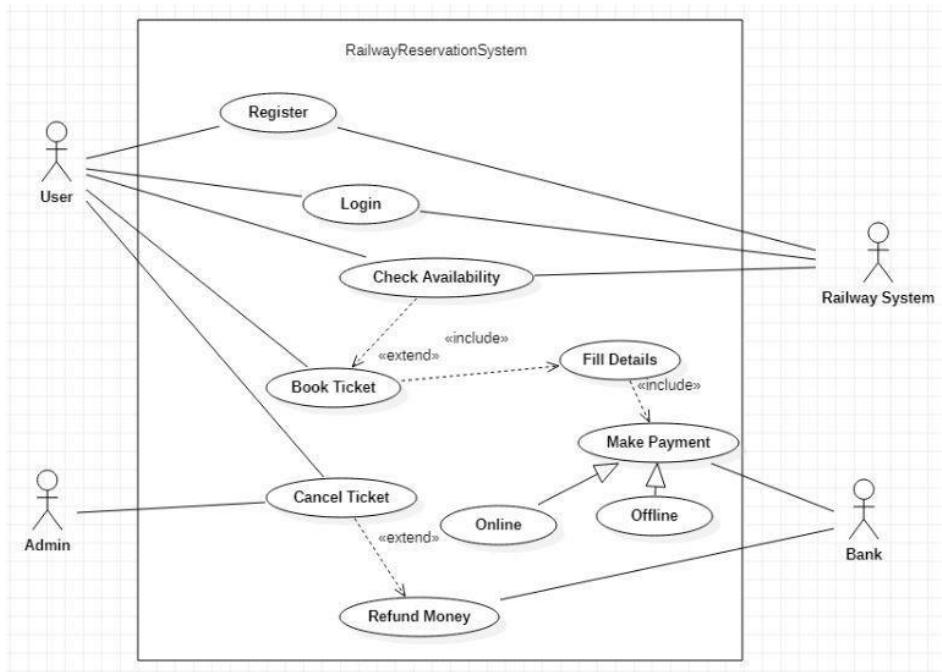
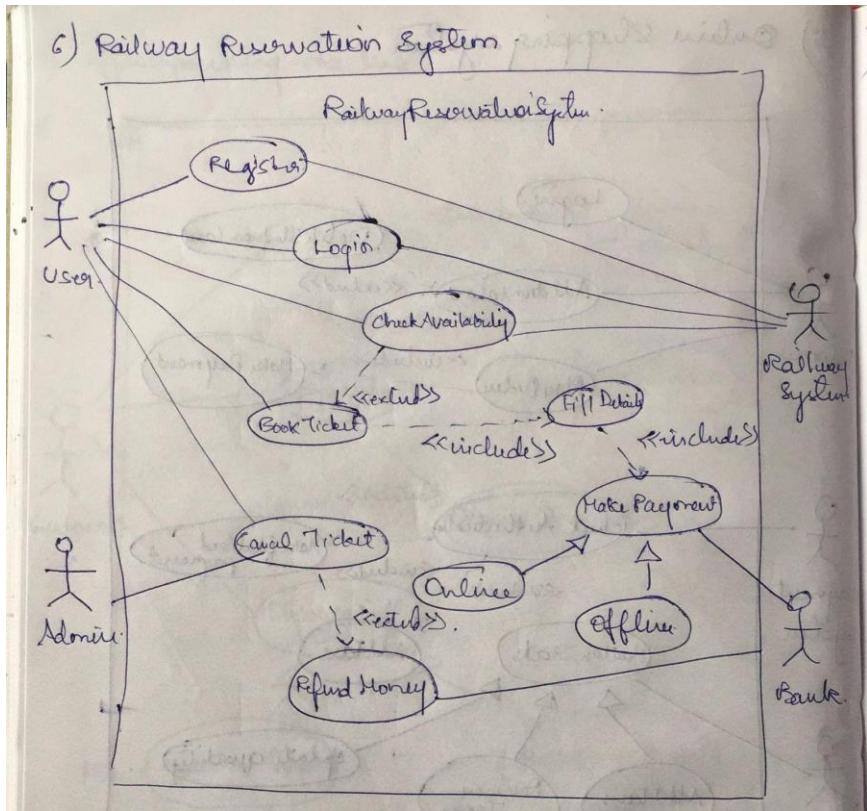
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3. Draw the advanced state diagram

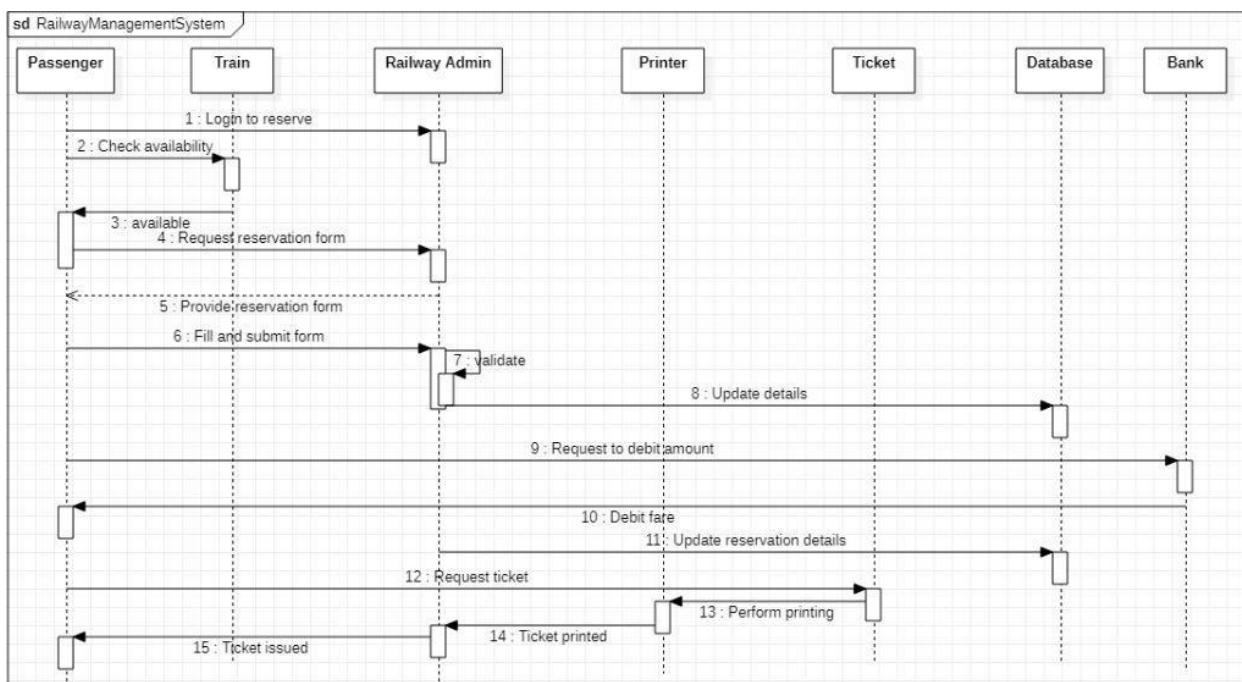
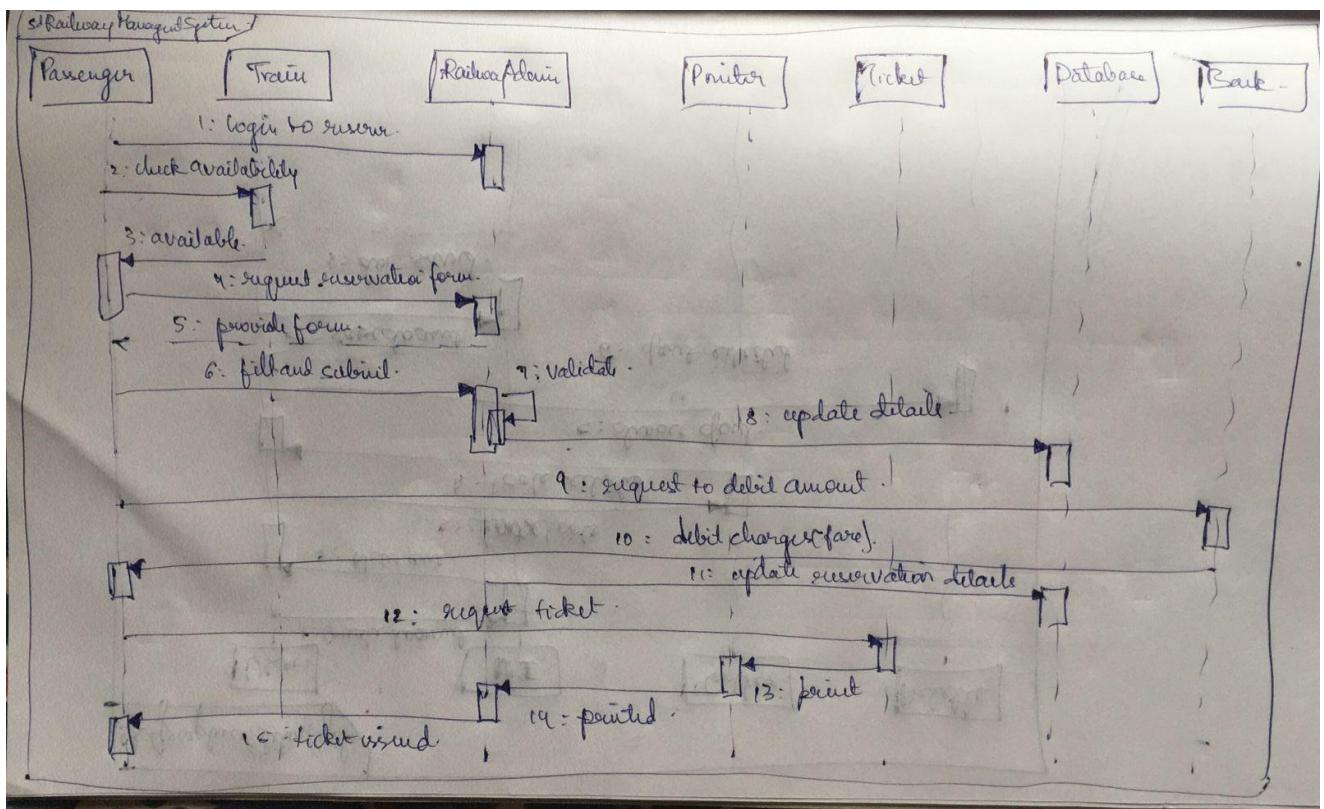


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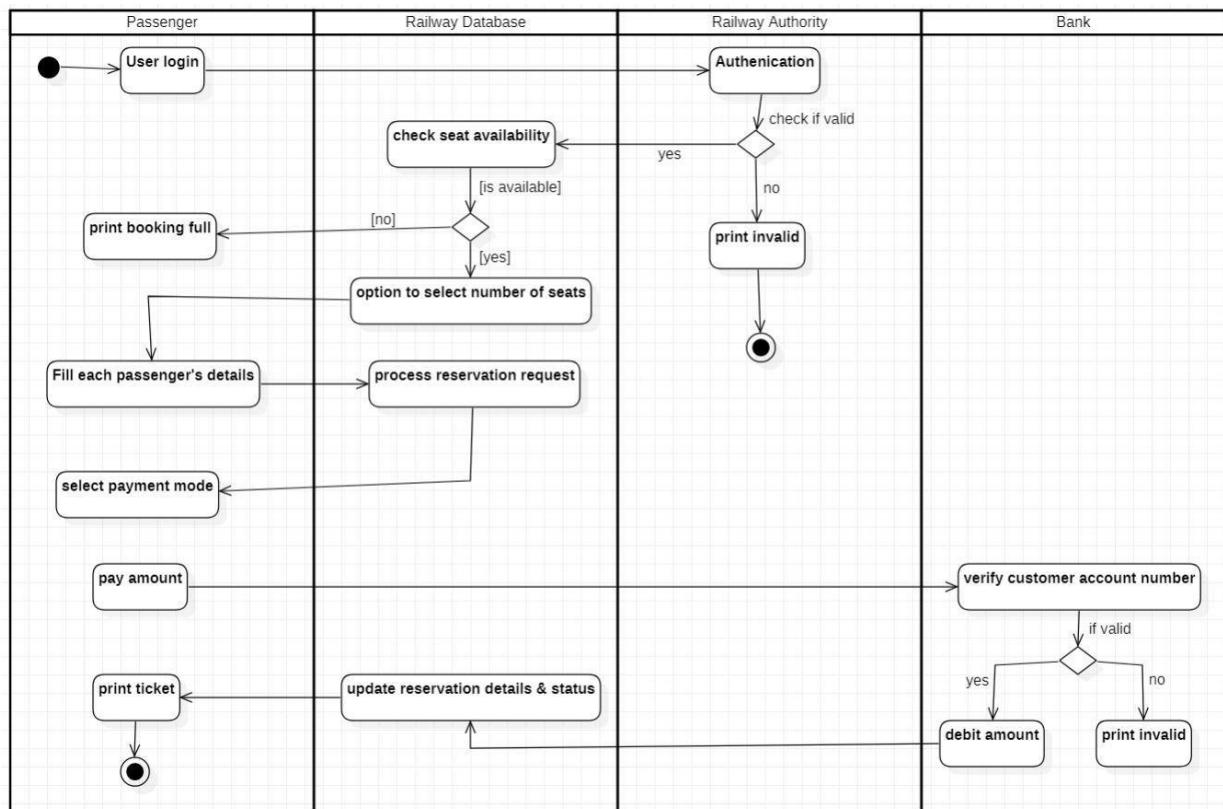
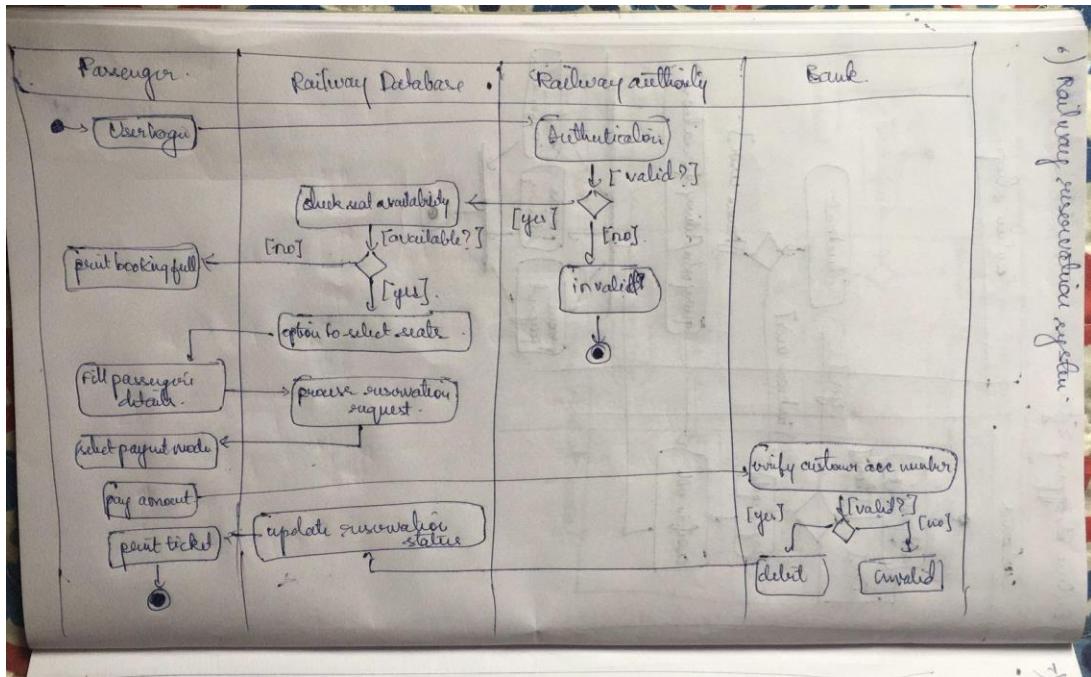
4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram



Exercise 7: Graphics Editor System

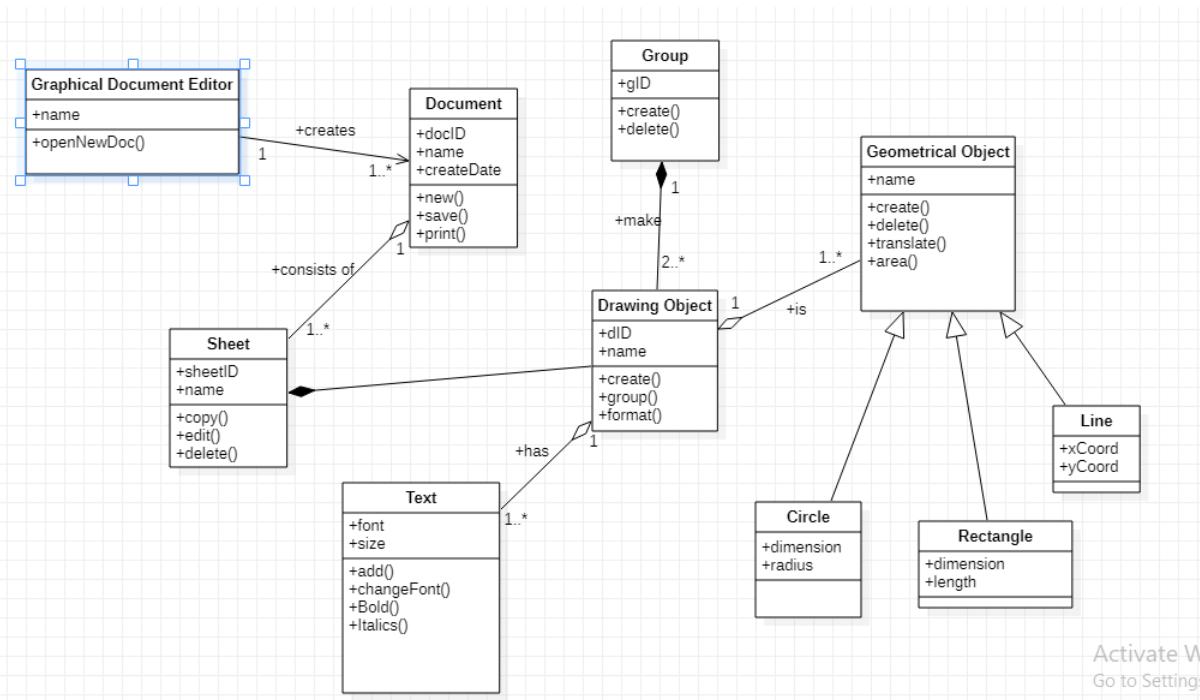
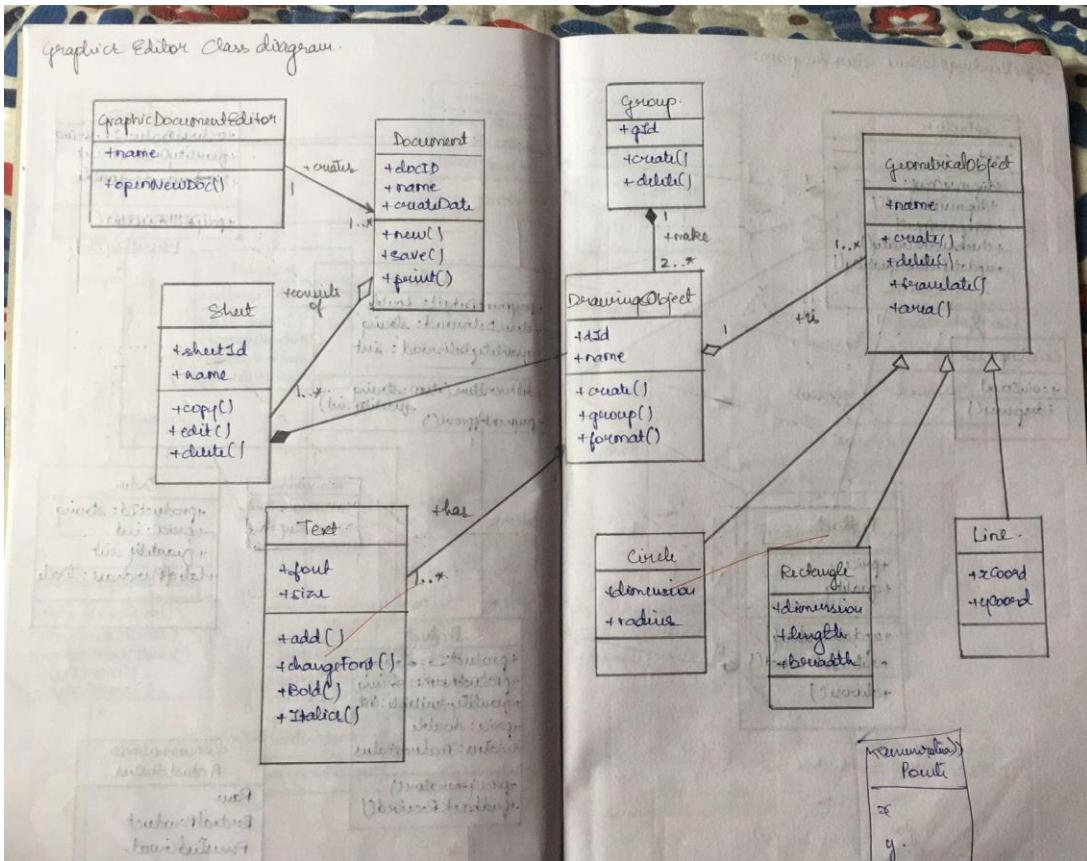
1. Write SRS

→ Graphics Editor System.

Problem Statement: This is an API which enables a programmer to develop his own graphic model editor for a specific type of model. Here the user can edit graphic objects in a drawing space. He can create any shapes to support and modify an underlying model. This allows us to drag objects from a specified model into a working graphical diagram.

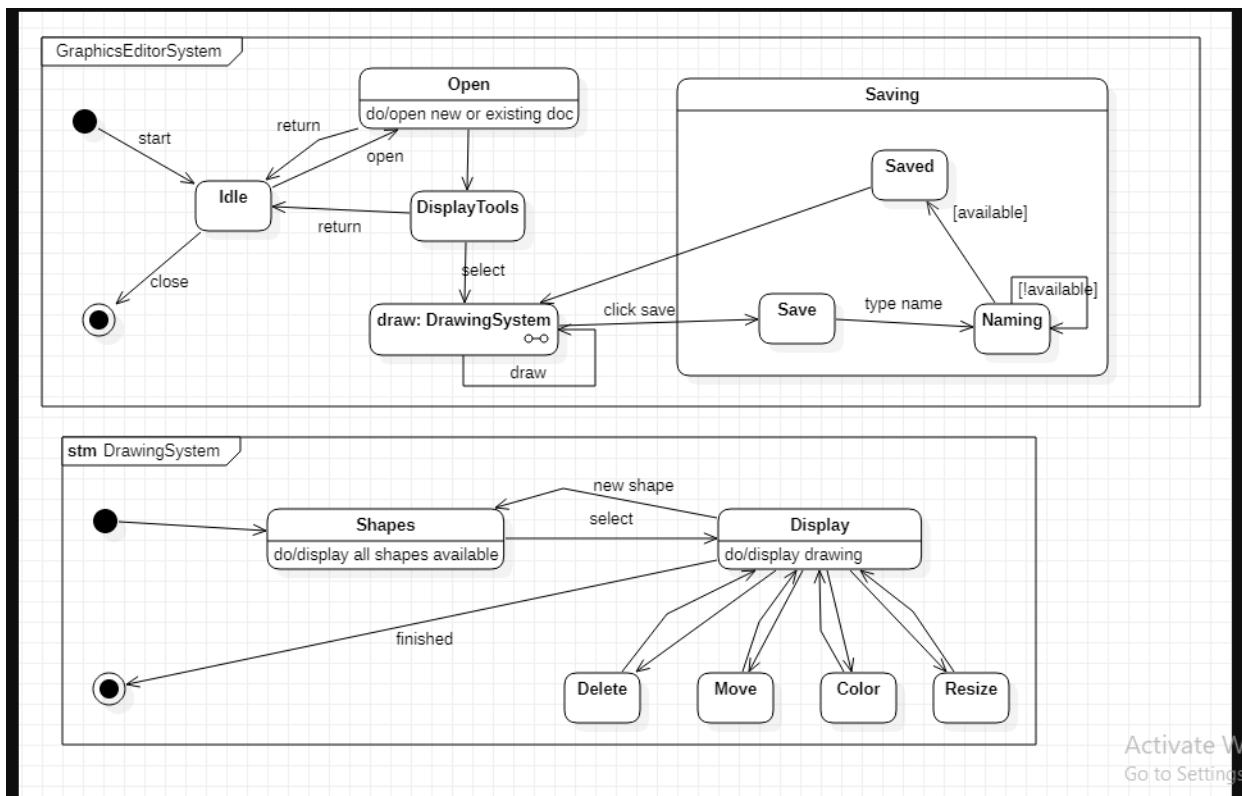
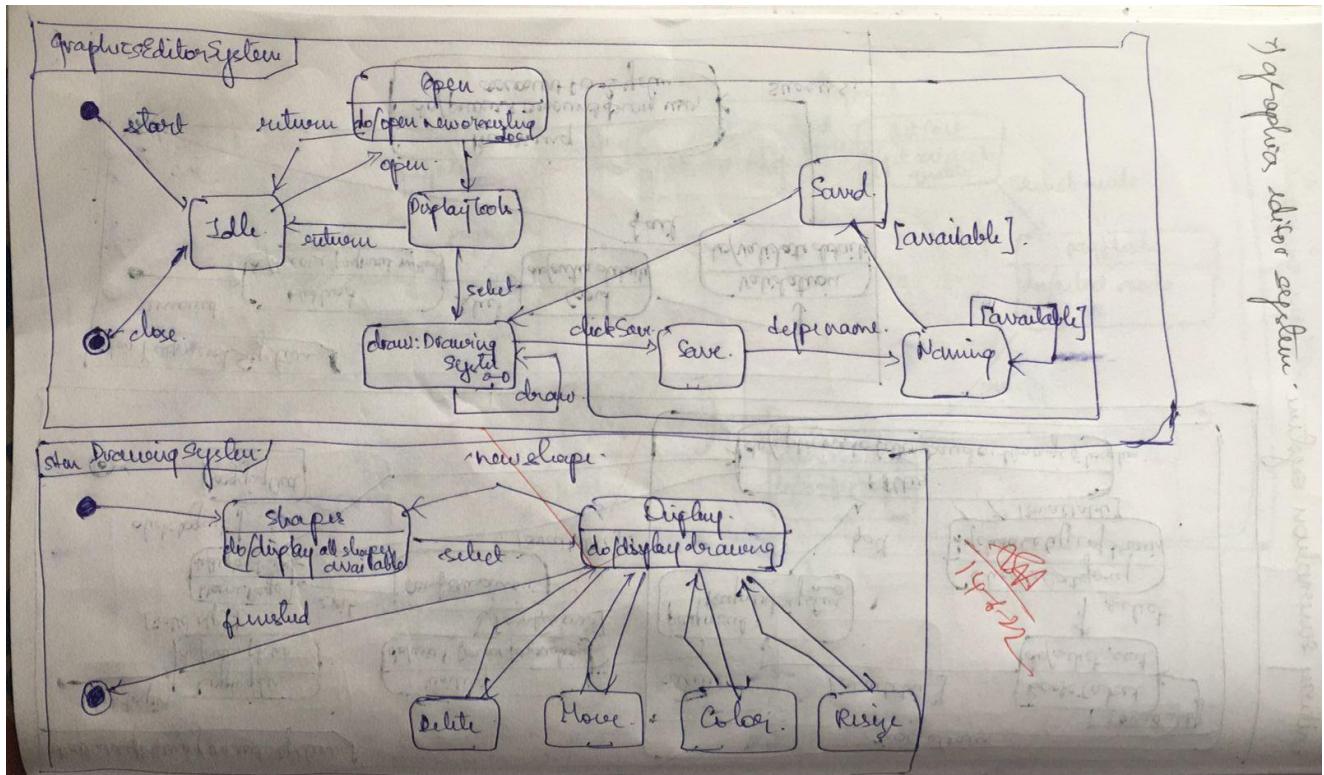
- **toolbox:** This contains tools like line, circle, rectangle, arc, text, draw, eraser.
- **palette:** This contains all the colours to fill the shape and display them.
- **toolbar:** This basically contains all the options like New, Open, Save, Toolbox, Text, toolbox etc.
- **Integrated view:** shows the overall view excluding everything like toolbar, colourbox, menu and graphic screen.
- **complex drawing:** lets us group several drawings into one.
- **zoom in and zoom out** comes handy.
- **different shades of line tool** are provided.
- **easy tool handling**.
- **consumer copyright**
- **administrator authentication**
- **developer access to the system**.

2. Draw the advanced class diagram

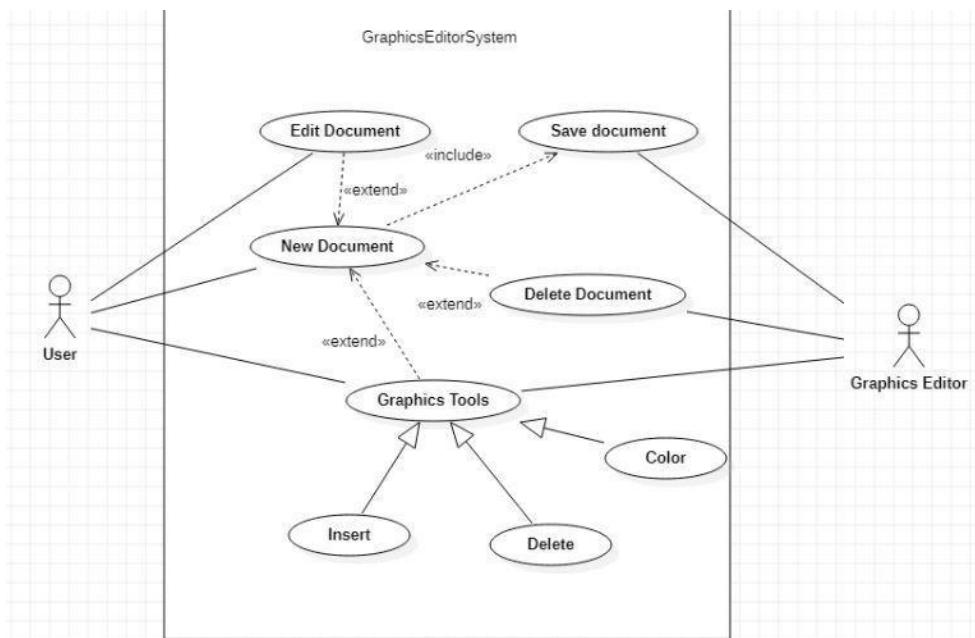
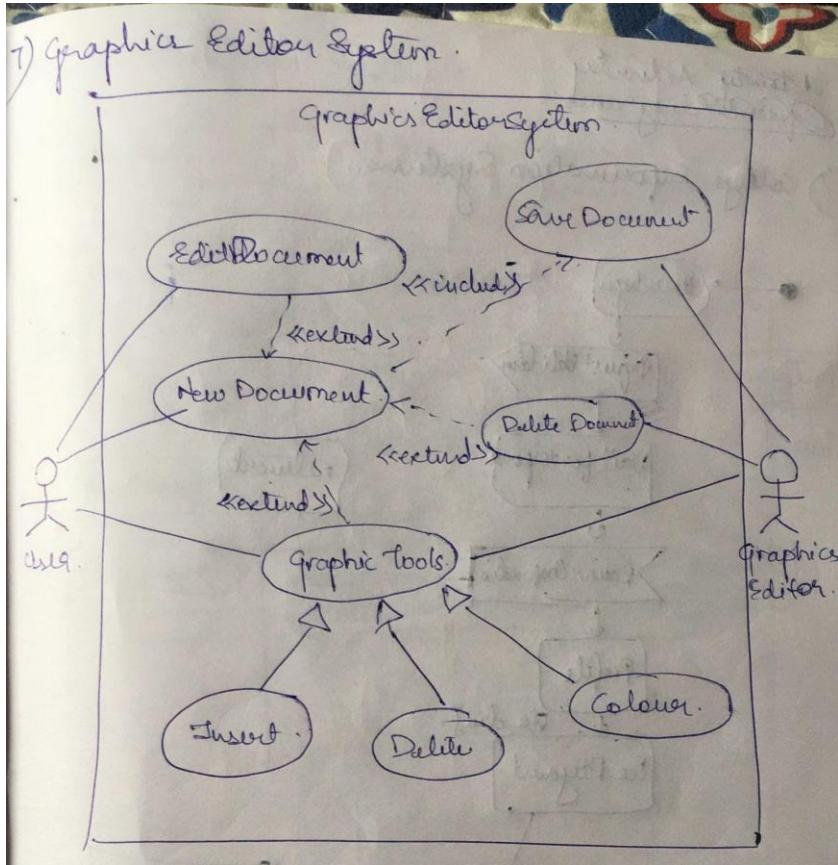


Activate W
Go to Settings

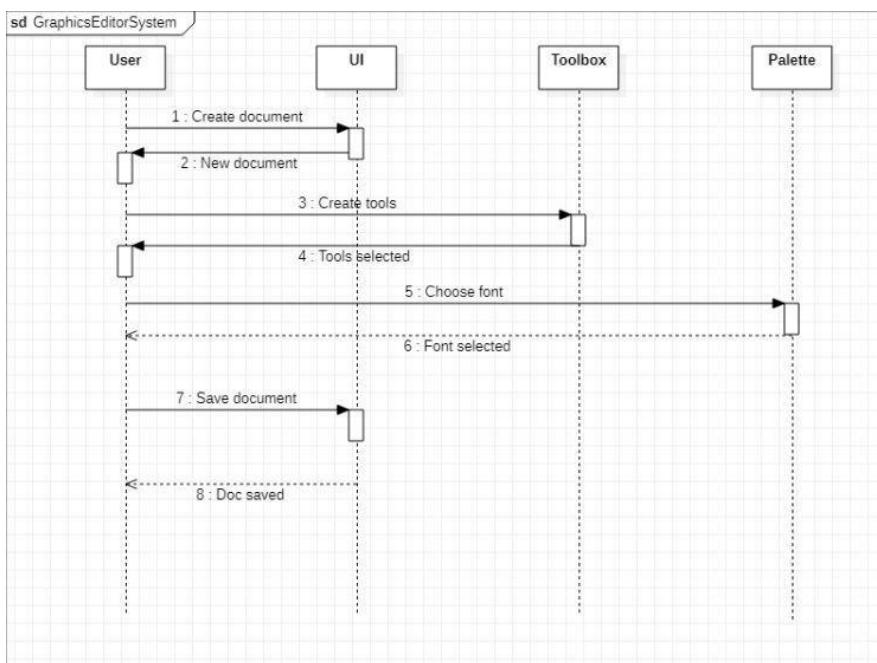
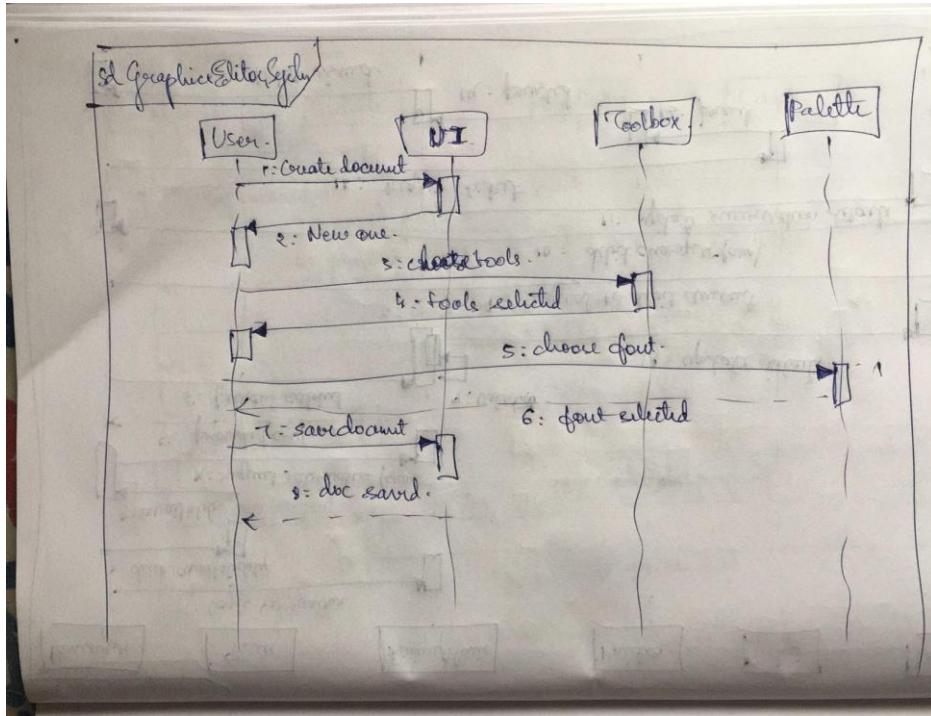
3. Draw the advanced state diagram



4. Draw the advanced use case diagram



5. Draw the advanced sequence diagram



6. Draw the advanced activity diagram

