Al Imam Mohammad Ibn Saud Islamic University
College of Computer and Information Sciences
Information Systems Department

Course Title:	System Analysis and Design
Course Code:	IS 339
Course Instructor:	Dr. Halah Al-Shaikh

Project Title:	**Vox cinema**
Section	**371**

Student Name	Student ID	Section No.	Signature
Nwara Mohammed Aljoufi	440019357	371	Nwara

Chapter 1: Introduction

The Vox Cinemas application is one of the most important applications for booking movie tickets, as it enables the user to book tickets online in advance.

To bypass the ticket line directly from your mobile phone,

Learn about show dates, seat availability and other services provided.

It is easy to pay and quick to get tickets.

1.1 Project Overview

The purpose of the application :

People often suffer in booking tickets, whether delaying flights or even train trips to book movie tickets, as well as the suffering of going to the ticket booth and waiting for a long time, especially in films that will be shown for the first time in cinemas, the waiting line may reach hours of waiting, and this is a great waste of time Which can be used to do something else.

The purpose of the application is to provide movie ticket reservations within a few minutes by just touches on the keyboard without the need to drive to the ticket booth and waste time waiting.

Several payment methods are also available, which speeds up the process of purchasing a ticket.

Also, through the program, you can choose the type of hall suitable for you from among several options. You can also book the seat you want and the number of seats according to your need. The system also shows the location of the seats compared to the display screen via illustrations to make sure that your choice is comfortable for you.

This application focuses on allowing users to self-reserve their tickets without the need for the intervention of the staff and without the need to go to the ticket booth.

The aim of the project is

Providing convenient and uncomplicated ticket booking methods that shorten time and effort instead of wasting time traveling to reach the ticket booth.

Chapter 2: Methodology

2.1 Project Lifecycle

I decided to choose (Waterfall Model)
Since the project chosen is not complicated and does not have many ramifications, the demands of the system are clear and do not need continuous modification
Also have plenty of time, so there is no need to rush and do not want problems in dividing the project and then assembling it.
Also want to put the system on the market in its entirety, and i do not want to download many updates, especially after downloading it in a short period of time.

planning

Analysis

Design

implementation
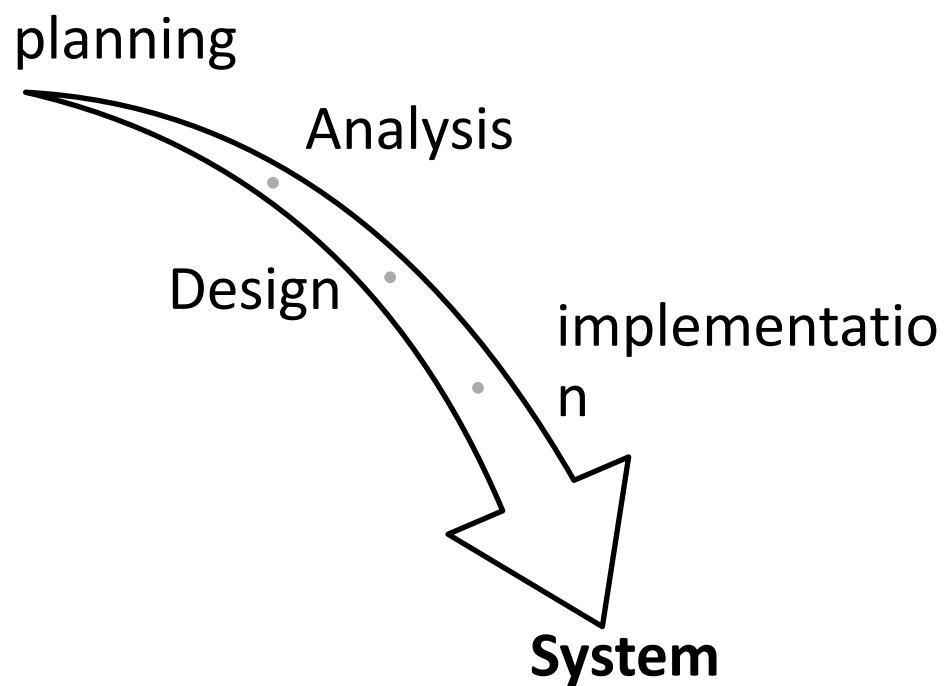
System

Chapter 3: System Analysis

3.1 Introduction

This chapter will mention the requirements definition functional and non-functional of the Application.

3.2 Requirements Definition

A requirement is simply a statement of what the system must do or what characteristic it must have.

3.2.1 Functional Requirements

User requirements:

(Access)
1. The user should be able to create an account.
2. The user should be able to log ln to the system by his name and password.

(Reservation)

3. The user should be able to search for a movie.
4. The user should be able to book a movie ticket.
5. The user should be able to select a seat.
6. The user should be able to Change the seat.
7. The user should be able to see the diagram of the seat location.
8. The user should be able to pay.
9. The user should be able to Delete booking .

(Communicate)

10. The user should be able to communicate with the staff via messages.
11. The user should be able to reserve snacks.

(notifications)
12. The user should be able to receive a booking confirmation message.
13. The user should be able to receive a message reminding the date of the movie.

staff requirements:

14. staff should be able to receive a request to reserve snacks.
15. staff should be able to communicate with the user via messages.
16. staff should be able to serve snacks.

3.2.2 Non Functional Requirements

system requirements:

(Properties)
1. The system should be able to ensure that the interface is easy.
2. The system should be able to process operations quickly.
3. The system should be able to stand up to sabotage attacks.

(availability)

4. The system should be able to available for 24 hours 365 days a year.
5. The system should be able to check the availability of the film.
6. The system should be able to check the availability of vacant seats.
7. The system should be able to display a diagram of the seat location.

(notifications)
8. The system should be able to send notifications of movie time to the user.
9. The system should be able to send notifications to confirm the reservation.
10. The system should be able to send notifications to confirm payment.

(delete and change)
11. The system should be able to delete the reservation.
12. The system should be able to change seats.

(confidentiality and payment)
13. The system should be able to store user data securely.
14. The system should be able to verify the payment process.

3.3 Functional Modeling

3.3.1 Use-Case diagram
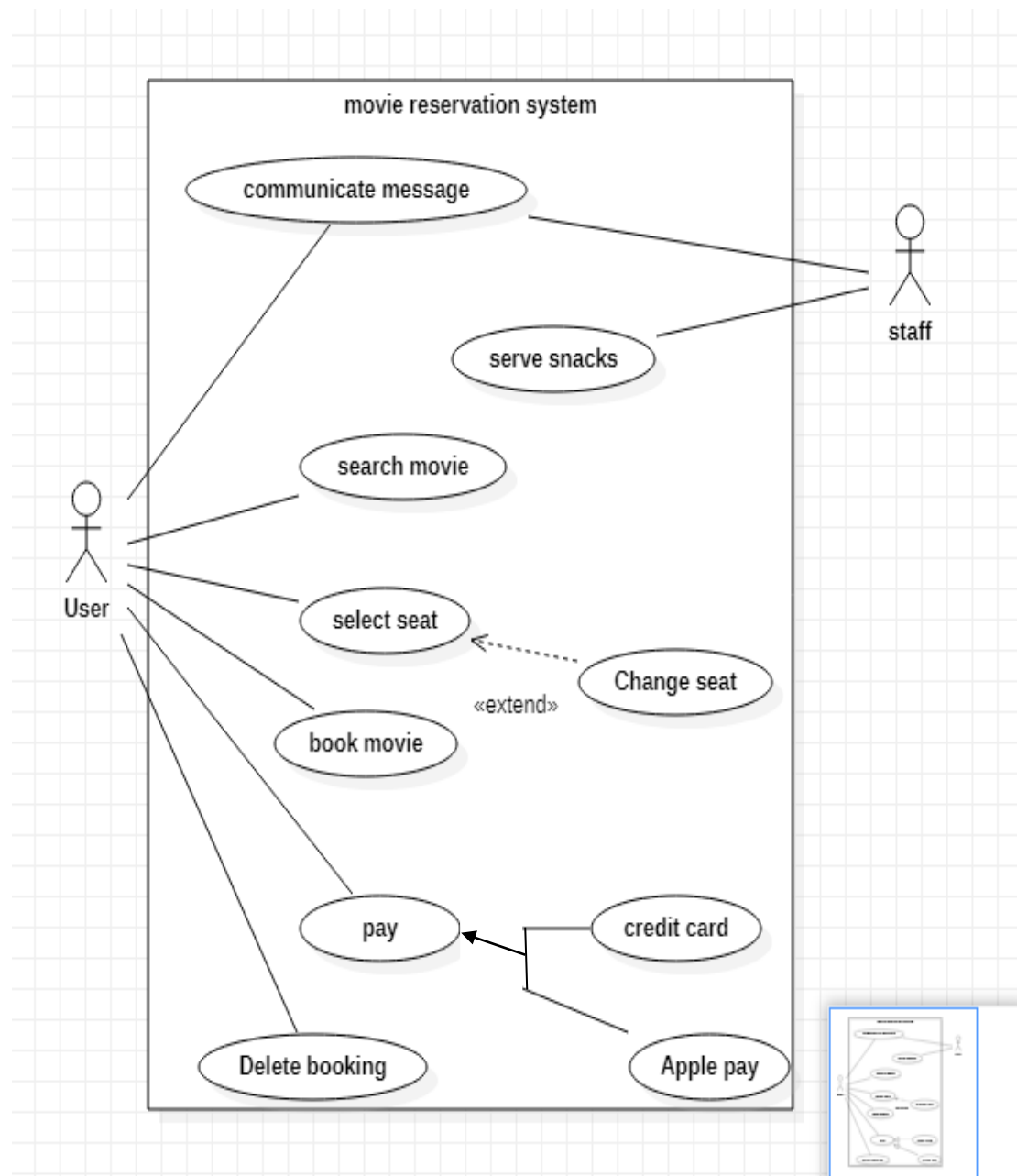
3.3.2 Use-Case description

Use-case describtion#1

Use case name : search movie	ID : 1	Importance level : High
Primary Actor: user	Use case type: Detail, Essential	
Stakeholders and Interests: User : wants to search for movie to book . Staff :		
Brief Description: This use case describes how the user can search for a movie on the program .		
Trigger: User decides to search for a movie. Type: External		
Relationships: Association: User Include: Extend: Generalization:		

Normal Flow of Events:
  1. The user opens the program
  2. The user clicks on the search movie box
  3. The user writes the name of the movie
  4. The user is searching for the movie
  5. The user book the movie.
  6. The search result appears to the User.		

SubFlows: 3.1 If the movie does not exist, display an error message.		
Alternate/Exceptional Flows : 3.a - wrong movie name. 2.1.a- wrong date of birth		

Use-case describtion#2

Use case name : select seat	ID :2	Importance level : High
Primary Actor: User	Use case type: Detail, Essential	
Stakeholders and Interests: User : wants to select seat . Staff :		
Brief Description: This use case describes how the user can select a seat on the program .		
Trigger: User decides to select a seat. Type: External.		
Relationships: Association: User. Include: Extend: Change seat. Generalization:		

Normal Flow of Events:
   1. The user is viewing the seats.
   2. The user selects the seat.
   3. The user chooses the seat.
   4. The result of the selection is shown to the user.		

SubFlows: 2.1 If the seat is not available, display an error message.		
Alternate/Exceptional Flows : 3.a - The seat is already reserved.		

Use-case describtion#3

Use case name : book movie	ID :3	Importance level : High
Primary Actor: User	Use case type: Detail, Essential	
Stakeholders and Interests: User : wants to book a movie . Staff :		
Brief Description: This use case describes how the user can book a movie .		
Trigger: The user search for a movie . Type: External.		
Relationships: Association: User Include: Extend: Generalization:		

Normal Flow of Events:
    1. The user select the movie.
      1.1 If the user select an adult movie, check the date of birth.
    2. The user confirms the reservation, time and seat.
    3. user pays.		

SubFlows:		
Alternate/Exceptional Flows : 2.a The user does not confirm the reservation 3.a The user does not have an account to pay		

Use-case describtion#4

Use case name : Delete booking	ID : 4	Importance level : High
Primary Actor: User	Use case type: Detail, Essential	
Stakeholders and Interests: User : wants to Delete booking of the movie . Staff :		
Brief Description: This use case describes how the user can delete booking a movie .		
Trigger: The user presses the delete button in the program. Type: External		
Relationships: Association: User Include: Extend: Generalization:		

Normal Flow of Events:
    1. The user presses the delete button
    2. User receives confirmation of deletion
        2.1 If the user cancels the deletion request, the deletion will be rejected
    3. The user presses the confirm button
    4. The deletion process is complete		

SubFlows:		
Alternate/Exceptional Flows : 3.a Deletion request denied , the delete Request rejected.		

Use-case describtion#5

Use case name : pay	ID :5	Importance level : high
Primary Actor: User	Use case type: Detail, Essential	
Stakeholders and Interests: User : wants to pay for the ticket they want to buy. Staff :		
Brief Description: This use case describes how the user can pay for booking a movie.		
Trigger: The user has confirmed the reservation and wants to pay. Type: External.		
Relationships: Association: User . Include: Extend: Generalization: Apple Pay – credit card .		
Normal Flow of Events: 1. The user presses the pay button 2. The user chooses the method of payment 2.1 If the user chooses to pay by credit card.The Pay by credit card is performed 3. User confirms payment 4. Payment done		
SubFlows 2.2 If the user chooses to pay by Apple Pay. The Pay by Apple Pay is performed		
Alternate/Exceptional Flows : 3.a The balance is not enough, the payment is rejected.		

Use case name : serve snacks	ID :6	Importance level : high
Primary Actor: Staff	Use case type: Detail, Essential	
Stakeholders and Interests: User : Staff : wants to serve a snack		
Brief Description: This use case describes how the Staff can serve a snack.		
Trigger: The Staff received a request to purchase a snack. Type: External.		
Relationships: Association: Staff . Include: Extend: Generalization:		
Normal Flow of Events: 1. The Staff received an request to buy a snack 2. Ensure that the Staff has the snacks available in the electronic system 2.1 If the user chooses snacks it is available. The request is performed. 3. The Staff accepted the request 4. The Staff sends a notification to the user that the request is ready		
SubFlows		
Alternate/Exceptional Flows : 2.a The user chooses snacks it is Not available.		

3.3.3 Activity diagrams

Activity diagram#1:Booking a movie
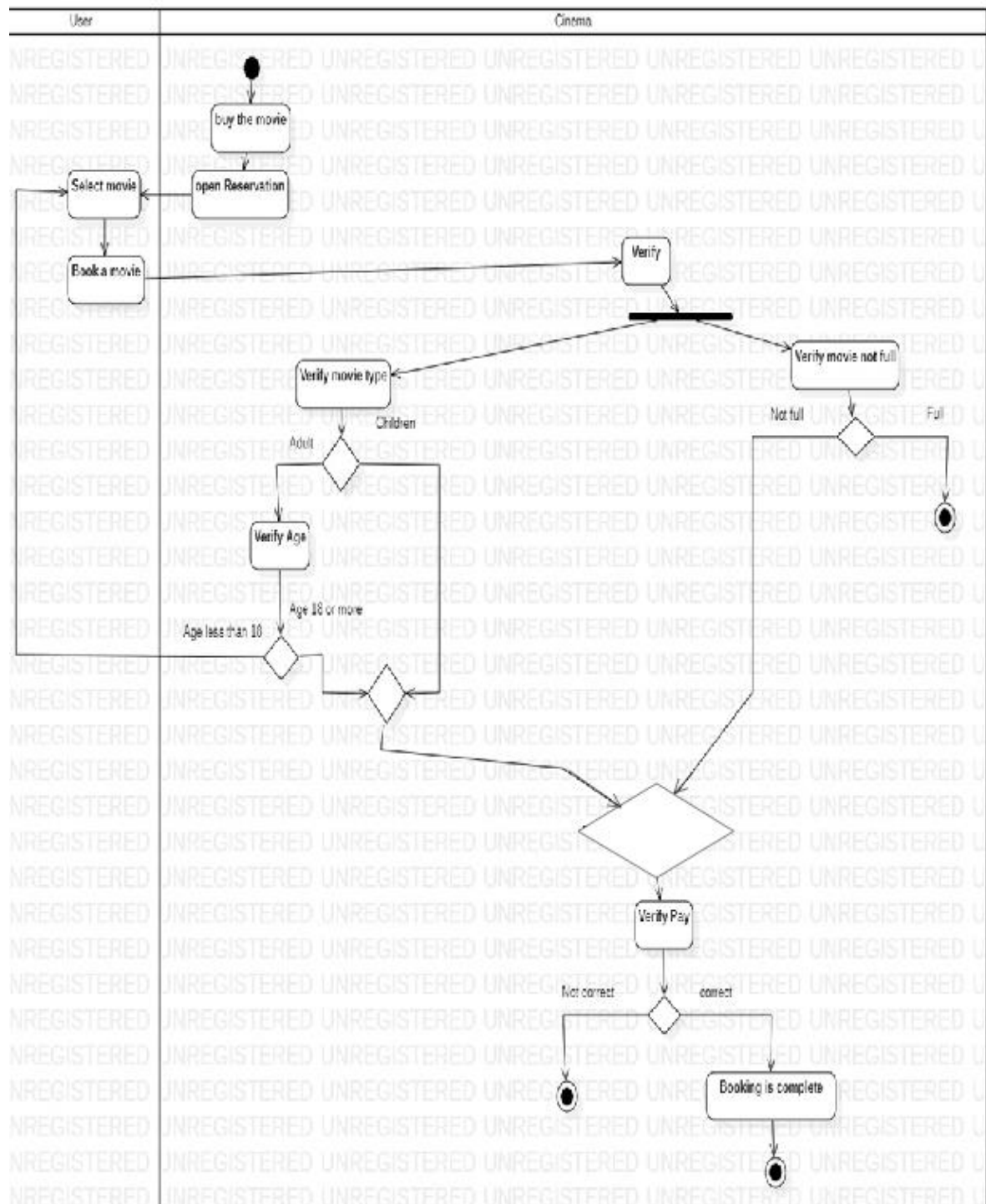
Activity diagram#2: Pay
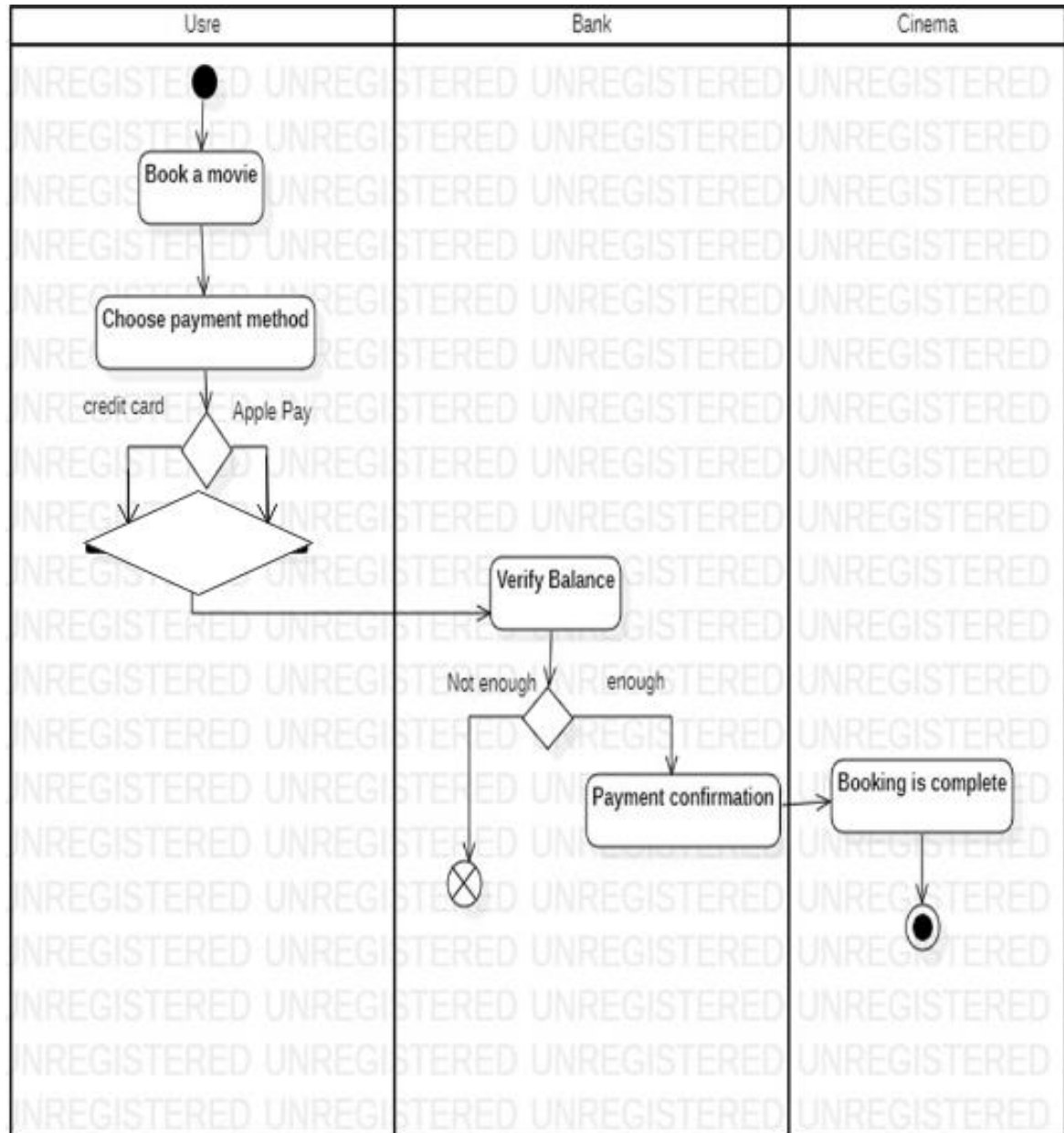
Activity diagram#3: Delete booking

17
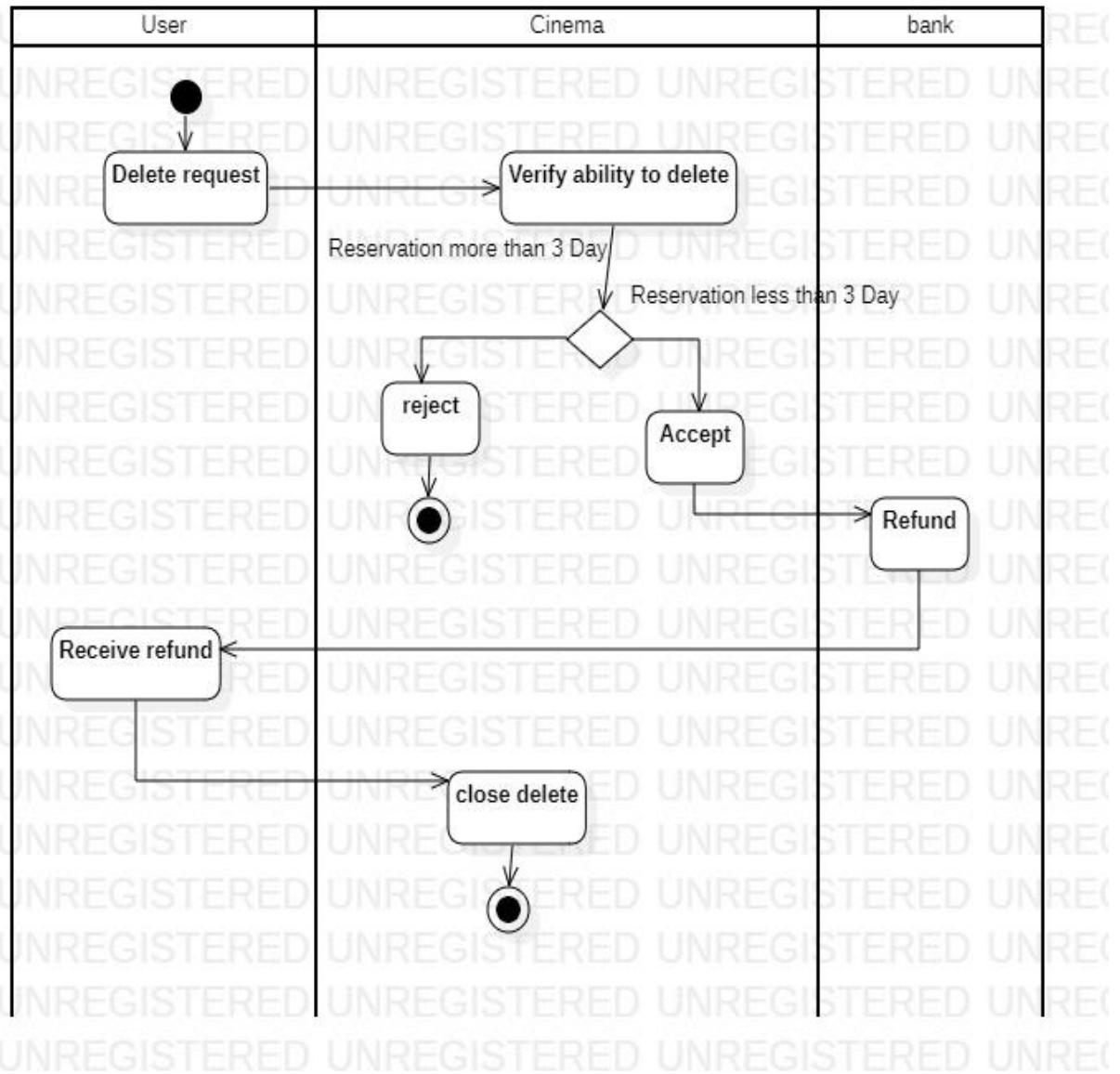
3.4 Structural Modeling

3.4.1 class Diagram

3.4.2 object Diagram

Ahmad Aldossary:User

Gender:male

FName:Ahmad

LName:Aldossary

Password:ahm-434

Email:Aal@hotmail.com

phoneNumber:055123456

Birthday:10/2/1985

Movie1:Movie

Movename: No time to die
Genre:Action
Duration:165 min
ReleaseDate:30Septemper2021
Actor:Daniel,Rimi Malek,ana de armas
Language:English
Translation:Arabic

Payment1:payment

Amount:112
CardNumber:2412458970866
CCV:111
CardExpirDate:1/5/24

Cinama1:Cinama

Location: Al Qasr
Mall
Seattype:Standard
Show time:5:30

Booking1:Booking

totalprice:112

Seat1:seat

seatnumber:1
seattype:Standard
seatlocation:CINAMA5

Pop corn:Snack

typeOFsnack:salted popcorn
Snack number:2

Tecket1:Tecket

Price:55

Saad:staff

namestaff:saad
paswordstaf:sad-324

Message1:message

Text:Request received

3.4.3 CRC card

Front Side:

Class Name: Payment	ID:7	Type:concrete,Domain
Description: It is the payment for the booking process to confirm it.		**Associated Use Case:**5

Responsibilities	Collaborators
Pay for the booking that user wants and theway he wants.	User Booking Apple bay Credit card

Back Side:

Attributes:

  Amount (double)

Relationships:

    Generalization (a-kind-of):   Apple pay,Credit card
    Aggregation (has-parts):   Booking
    Other Associations: User

3.5 Behavioral Modeling

3.5.1 Sequence diagram

Sequence diagram#1:pay Use case
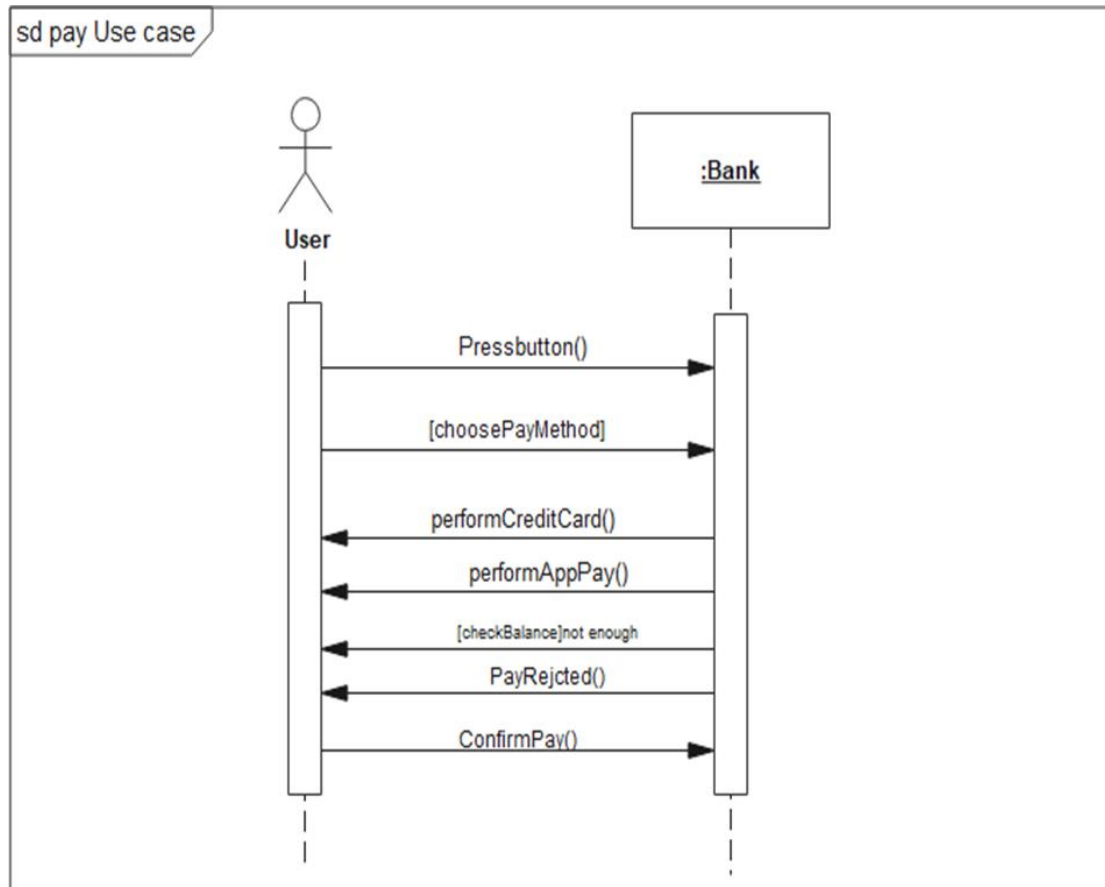
Sequence diagram#2: serve snacks use

sd serve snacks Use case

User — :Staff — System

requestSnack()
[checkAvailability]found()
requestAccepted()
readySnack()
notAvailable()
requestRejected()
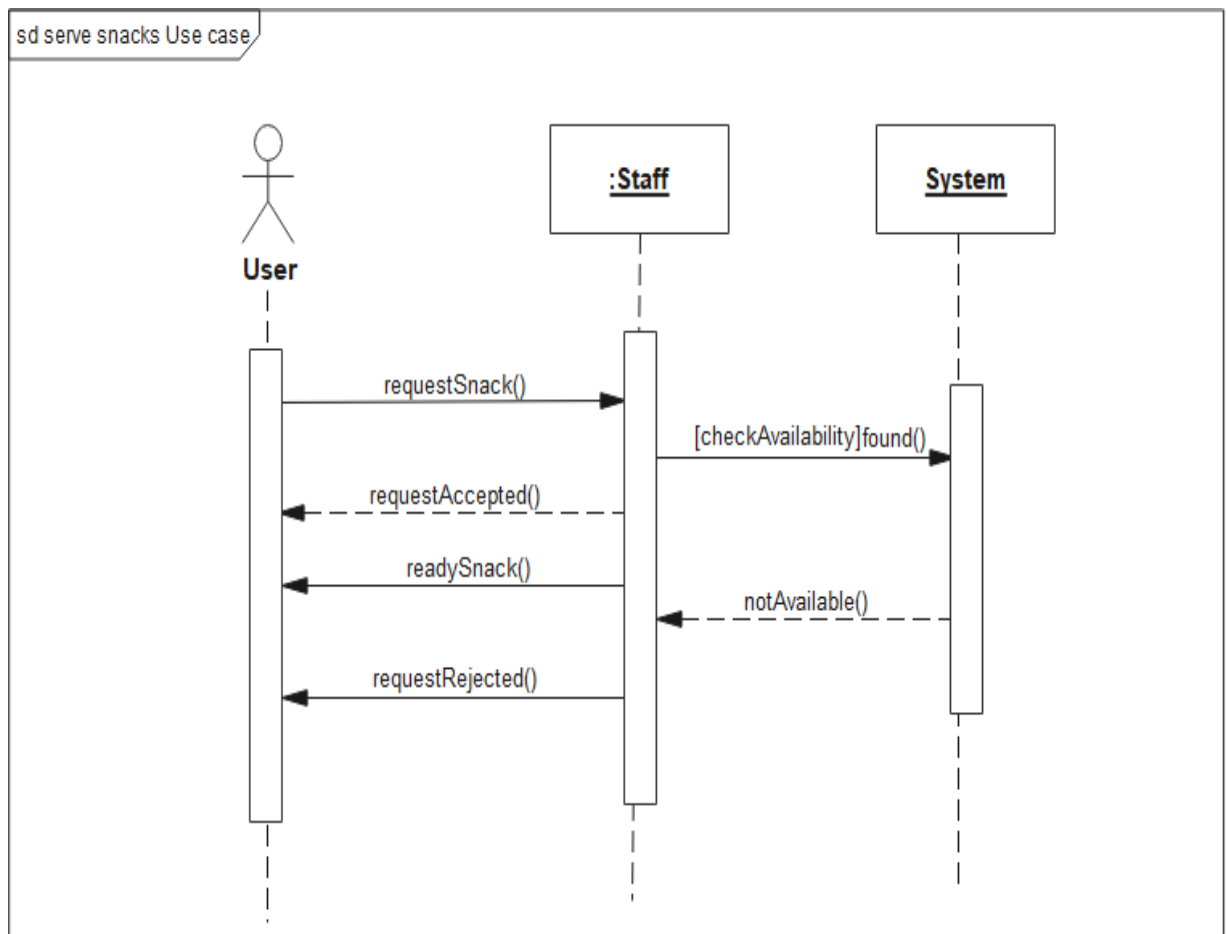
Sequence diagram#3:select seat Use case

sd select seat Use case

User — :Application

viewSeat()
selectSeat()
seatReserved()
chooseSeat()
displaySelection()
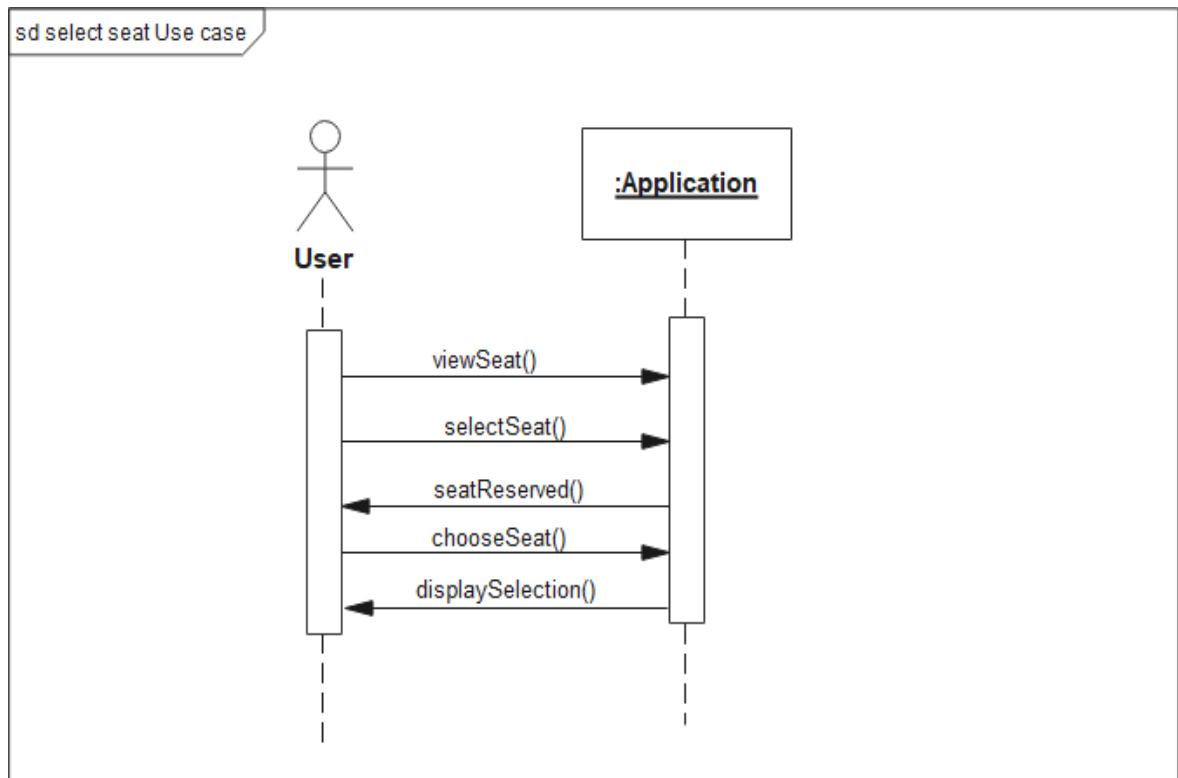
3.5.2 Behavioral state machine for any complex object()
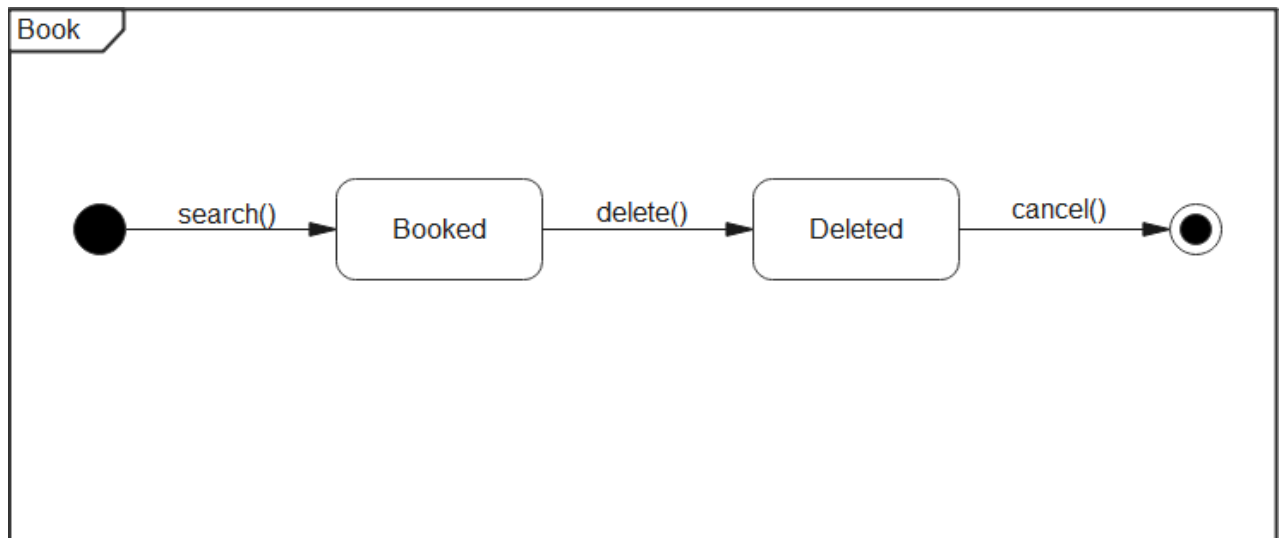
Chapter 4: System Design

4.1.1 Deployment diagrams
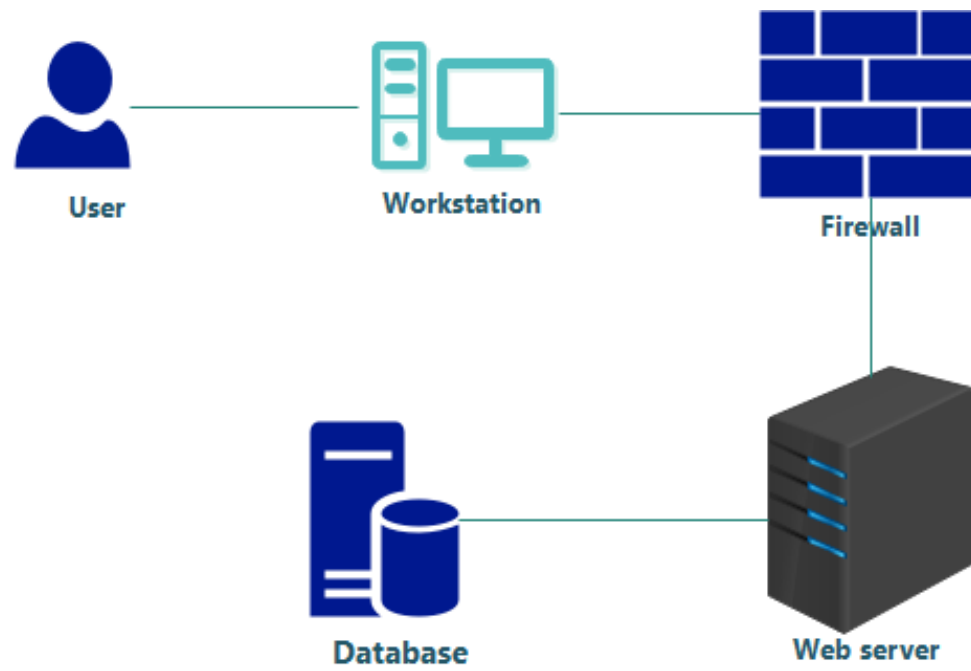
4.1.2 User Interfaces Design

interfaces related to the use-cases with their small description and purpose to design.

1. **This is the Register interface:**
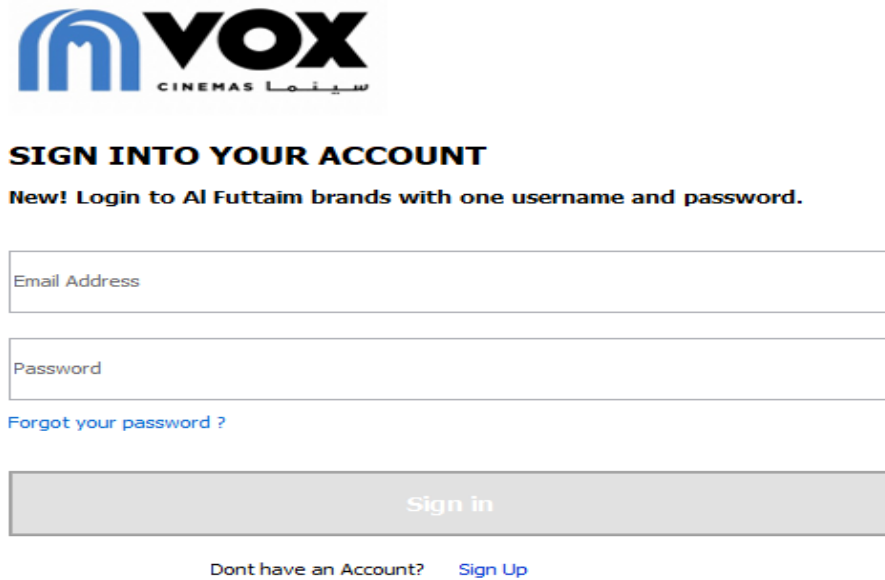
2. **If you Already have account then this is sign in interface:**

3. **This is the main interface and here you can choose the location of the cinema and the movie :**
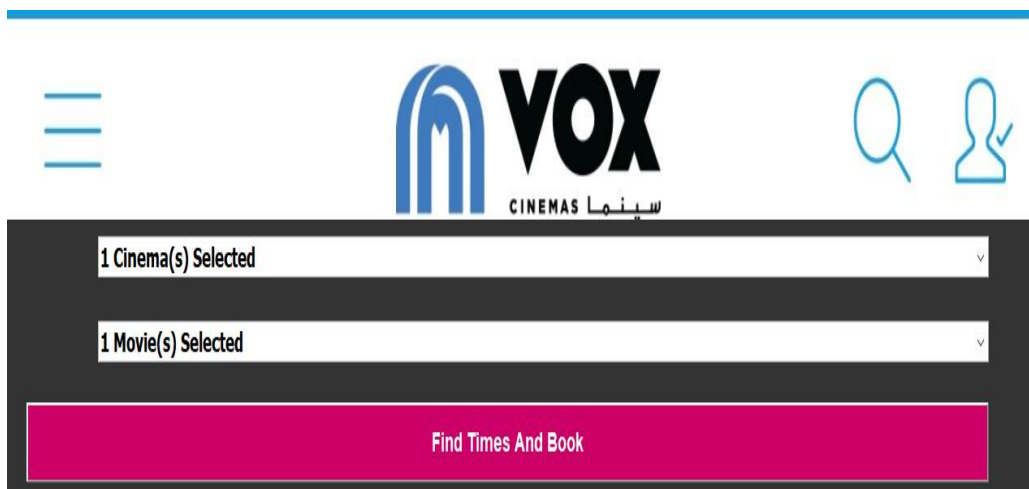
4. After select the location of the cinema and movie, the time and date of the show will appear :
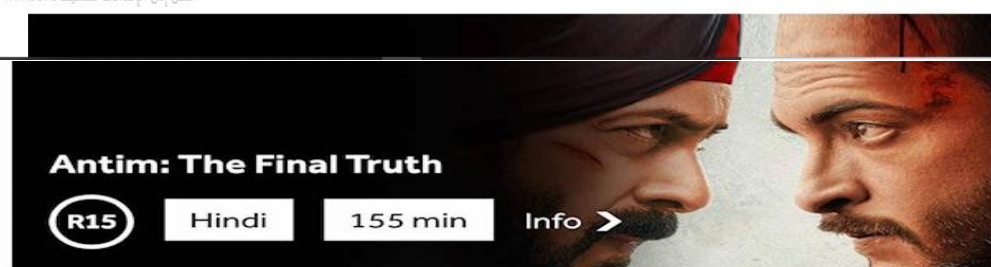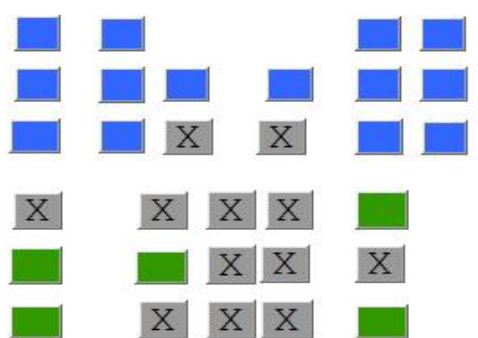
5. **After choose date and time, you must select the seat and this is the interface:**

CHOOSE SEATS

In line with government guidelines and, for your comfort and peace of mind, we are operating at reduced capacity.

SCREEN

| X | Unavavaliable | | Your Seat | | Premium | | Standerd |

Your Selected Seats

No seat selected

Conform

Antim: The Final Truth

7:10pm Friday, 03 December 2021

Al Qasr Mall - Riyadh   0.00 SAR

6. **Here the interface to enter offers if there:**

7. Here the interface to enter snacks:

8. Here the interface for payment:

REVIEW & PAY

In line with government guidelines and, for your comfort and peace of mind, we are operating at reduced capacity.

Antim: The Final Truth

(R15) Hindi 155 min

Venue: Al Qasr Mall - Riyadh
When: 1:20am Friday, 03 December 2021
Experience: Standard
Screen: CINEMA 15
Seats: E-6

1 x Standard Ticket	55.00 SAR
Booking Fee	5.00 SAR
Total before VAT	52.17 SAR
15% VAT	7.83 SAR
ORDER TOTAL	**60.00 SAR**

CHOOSE YOUR PAYMENT METHOD

◉ Credit and Dedit Cards
◯ Apple Pay

Card Number   MM/YY CVV

☐ Store card for future use?

X

VISA

مصرف الراجحي
alrajhi bank

للتحقق من عملية الشراء

تم ارسال رمز التحقق الى جوالكم المنتهى ب
لتأكيد الدفع إلى Vox Cinema بمبلغ SAR 60.00 باستخدام بطاقة

Verification Code

ارسال

طلب كلمة سر جديدة

Terms of Use | ?Need help

9. **Finally, You can go to your account to view purchases and offers:**

VOX
CINEMAS سينما

My Account

PROMOTIONS ⌄

PURCHASES You have ⌄

MANAGE DETAILS & PAYMENT ⌄

Logout

Chapter 5: Discussion and Conclusion

The final section of the project is the Conclusion section. Briefly summarize the overall conclusion of the data analysis based on the purpose of the study. Also explain the importance of the major finding to educational practice.

The Vox Cinemas is one of the most important applications for booking movie tickets, It is easy to pay and quick to get tickets. Watch the latest movies Check out film timings, trailers, new movie releases and book tickets online!

On this project is discussed and covered analysis & design phases start in business requirements and 3 different models include Functional with Use case and Activity diagram ,Structural with Class diagram, Object diagram and CRC card, in the end have Behavioral model with sequence diagram and state machine.Finally moved to design phase discover Deployment and user interface.

In short, I have applied what has been studied throughout this semester.

References:

https://ksa.voxcinemas.com/ar