Palestine Technical University – Kadoorie
College of Engineering and Technology
Department of Computer Systems Engineering

Project title:

Software Requirements Specification document (SRS)

for "Online movie ticket booking system"

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this document is to build an online system to manage the process of booking tickets to watch movies in the cinema and dealing with customers to facilitate this process.

1.2 DOCUMENT CONVENTIONS

This document uses the following conventions.

DB	Database
ER	Entity Relationship

1.3 INTENDED AUDIENCE AND READING SUGGESTIONS

This project is a prototype of a cinema ticketing system and was implemented under the guidance of our Software Engineering Dr. This project is useful for the cinema management team, the employees within it, as well as the customers.

1.4 PROJECT SCOPE

The purpose of the online ticket reservation system is to ease the process of booking tickets and to create a convenient and easy-to-use application for customers who want to buy movie tickets. The system relies on a relational database in which all cinema records, information and details of films and reservations are kept, with the functions of managing movie shows, reservations and advance payment. We will have a cinema website that displays many movies at multiple times and The website for the cinema helps to spread it more widely among people and thus increase its customers, as it is considered a marketing method for it and Increasing arrangement inside the cinema, so that each person attends the cinema at the showtime that he booked through the website only. The most important goal of the project is to provide a comfortable ticketing experience for users.

1.5 REFERENCES

- https://krazytech.com/projects
- Software Engineering, Tenth Edition-Ian sommerville-2016-(Learnclax.com).
- Fundamentals of Database Systems 7th Edition by Ramez Elmasri, Shamkant B. Navathe.
- https://www.youtube.com/@lucid_software (An educational YouTube channel).

2. OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

The distributed cinema database system stores the following information.

- **Movies details:**
  It includes a list of films that are shown in the cinema, the show times for each of them, the halls in the cinema, in addition to the number of seats in each screening hall, the seats available for reservation, and so o

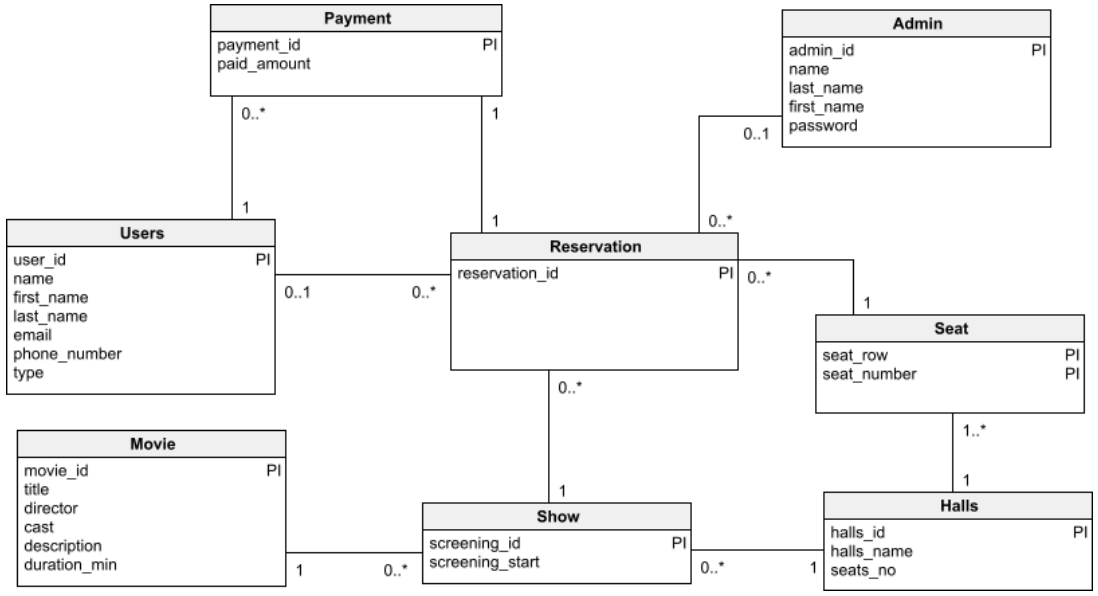
- **Customer description:**
  It includes the customer's code, name, phone number and e-mail address. This information can be used to keep the client's records in order to communicate with him for any emergency or for any other type of information.

- **Booking description:**
  It includes customer details, reservation number, movie name, showtime, reservation date, hall number, and seat number.

- **Payment description:**
  It includes payment card information such as phone number, card number, payment amount, and so on.

2.2 PRODUCT FEATURES

the major features of the cinema database system as shown in below **entity–relationship model (ER model)**



1-1 ER model

The diagram shows the layout of cinema database system – entity–relationship mode.

2.3 USER CLASS and CHARACTERISTICS

System users must be able to retrieve movie information and reservations for movies that are shown inside the cinema, so that each movie has more than one showtime and each show has a number of available seats. The system supports two types of user privileges, the customer and the employee. Customers will be able to access customer function, and employees will be able to access customer management, movies, appointments, and communication with customers to answer their inquiries.

The customer should be able to do the following functions:

- He registers with a new account in the system or login through an account he previously registered.
- Browse the list of films shown on the cinema's website.
- Searches for a specific movie through the search box on the site.
- Choose the movie you want to book a ticket to watch.
- Select the appropriate showtime from the suggested showtimes to watch the movie of his choice.
- Choose one of the seats available for reservation.
- He confirms his seat reservation by going to the payment screen and filling in the payment card information.

The Employee should have the following management functionalities:

- Administrative
    - Log in with the employee's account.
    - Add / delete a movie.
    - Add / delete an showtime.
    - Modify the details of a specific movie.
    - Modifying the details of seats, halls and reservations.
    - Create or cancel reservations in special cases.
    - Update Ticket price.

- Customer function
    - Get all the details of the movies shown on the site.
    - Get details of all reservations.
    - Review payment records.
    - Communicate with customers to answer their questions.

Each movie screening has a limited number of available seats. There are a number of films that are shown inside the cinema at different times.

2.4 OPERATING ENVIRONMENT

The operating environment for the online movie booking system is as listed below.

- distributed database.
- client/server system.
- Operating system: Windows, Android.
- database: Oracle database.
- platform: PHP.

2.5 DESIGN and IMPLEMENTATION CONSTRAINTS

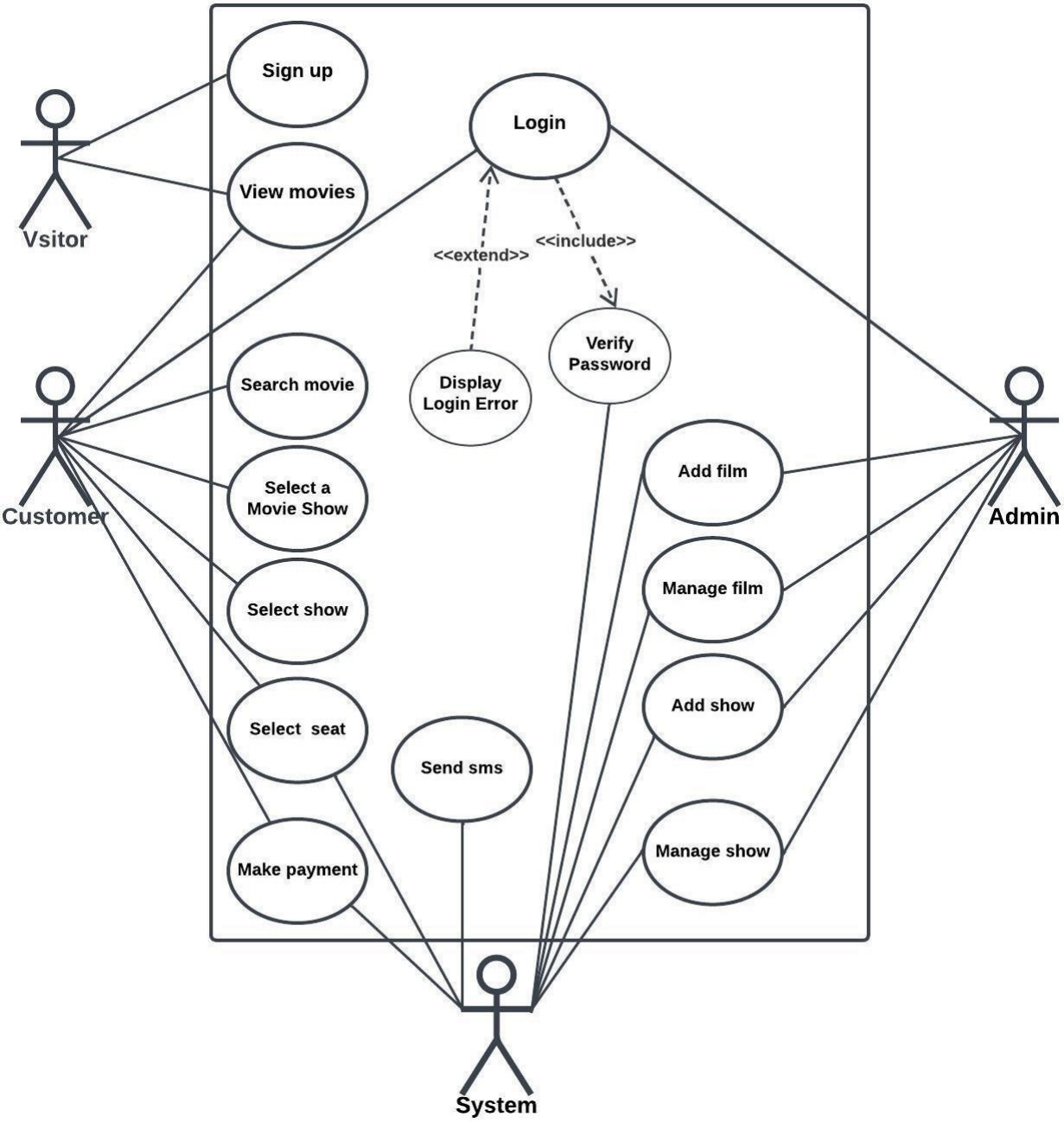
- The information of all user, films and cinema must be stored in a database that is accessible by the wibsite.
- Oracle server will be used as SQL engine and database.
- System is running 24 hours a day.
- User may access from any device that has internet browsing capabilities and internet connection.
- Users must have their correct usernames and passwords to enter into their online account and do actions.

2.6 ASSUMPTION DEPENDENCIES

- Adding more features to the system, such as canceling a reservation through the same user, or the ability to reserve more than one seat at the same time for the same show.
- Use Microsoft SQL server to store the database.
- Use ASP.net to develop the system.

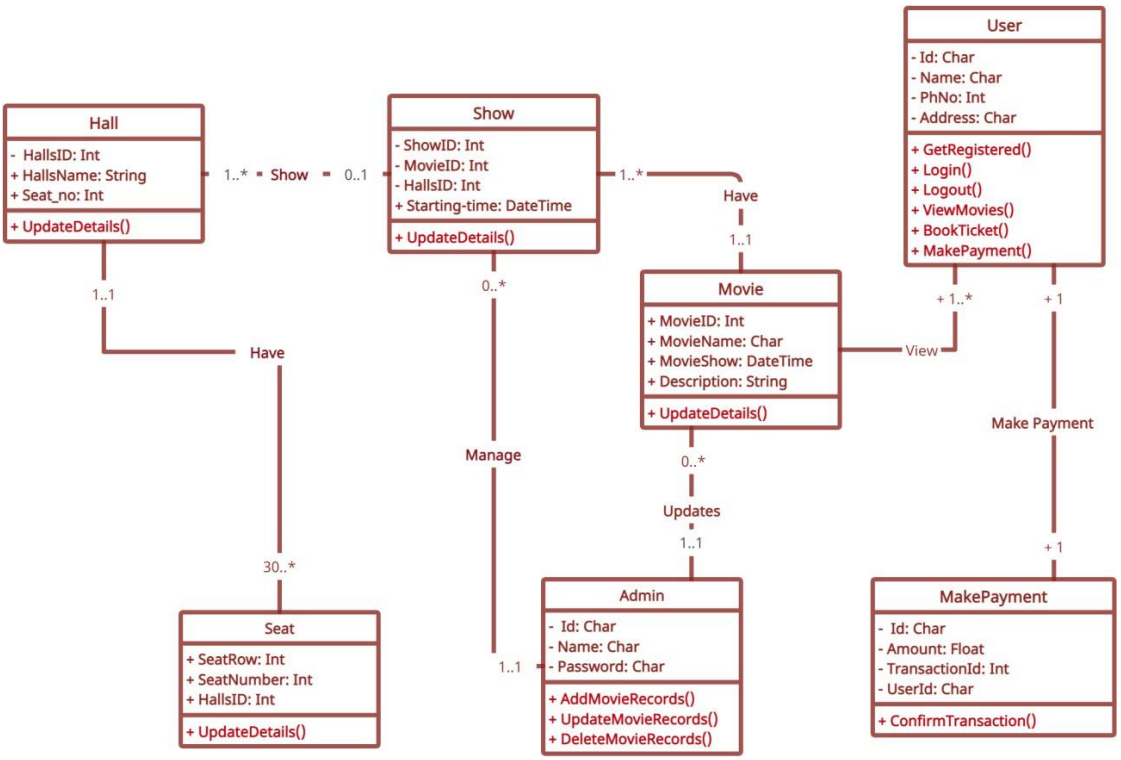
2.7 SYSTEM DIAGRAMS

- Use Case:



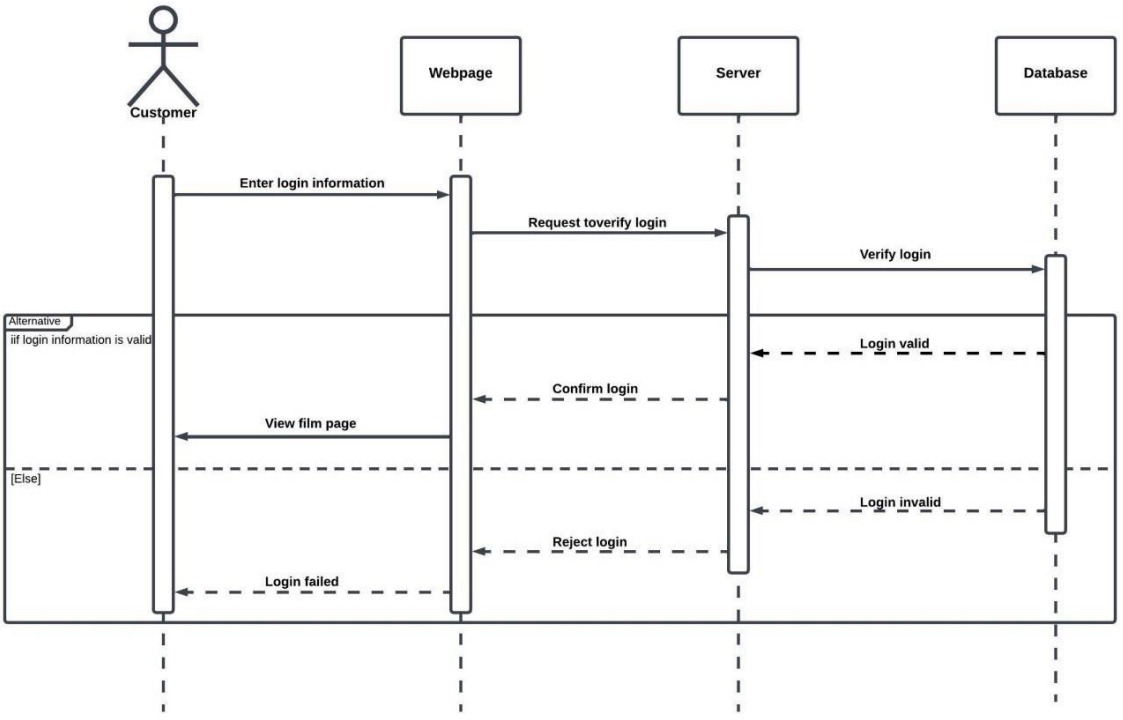
1-2 Use Case

- Class diagram

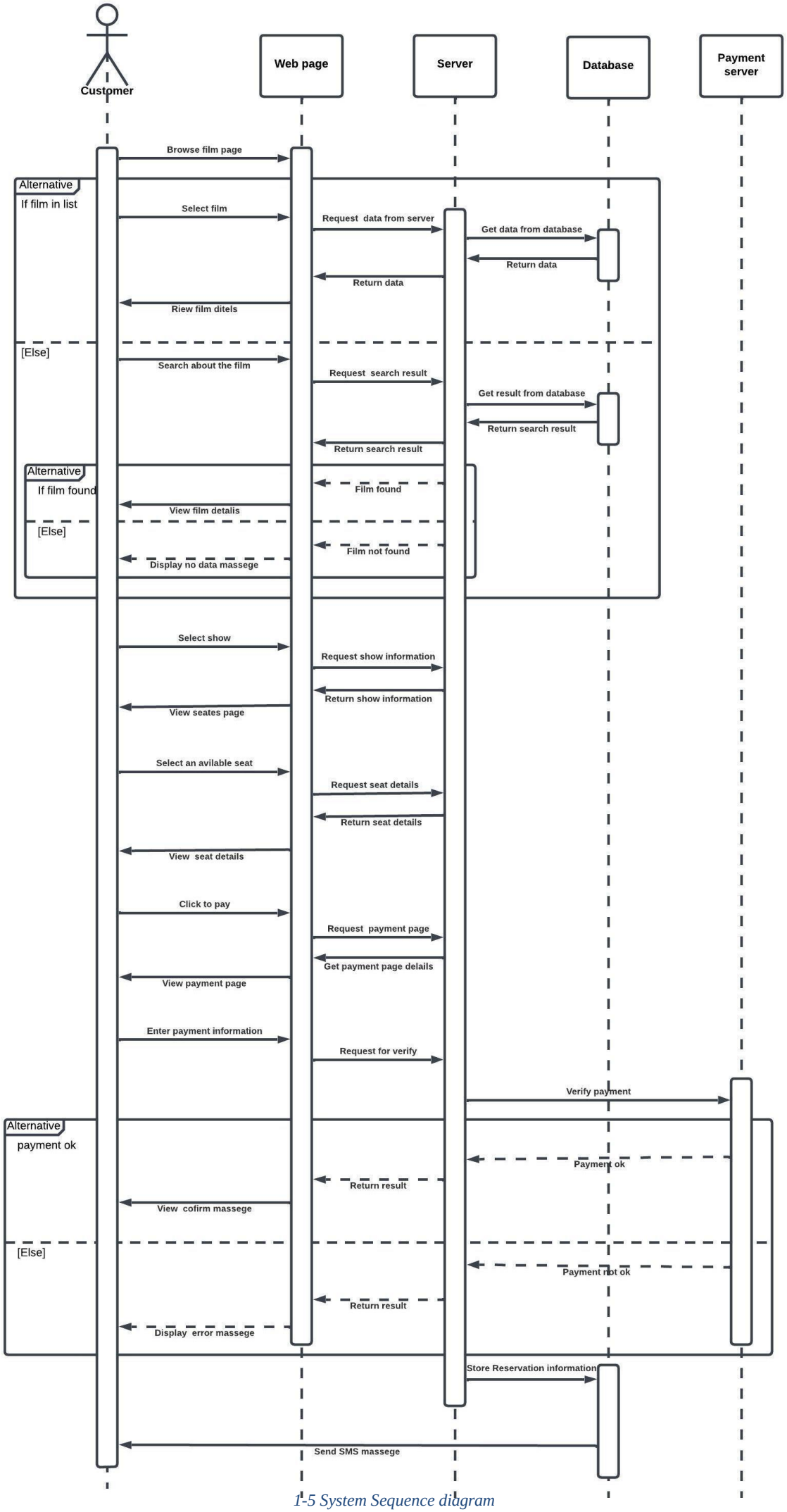


1-3 Class diagram

- Sequence diagrams



1-4 Login Sequence diagram



1-5 System Sequence diagram

3. SYSTEM FEATURES

DESCRIPTION and PRIORITY

The online ticket reservation system maintains information about shows, movies, available seats, prices and reservations, and of course it has priority because it facilitates the reservation process for customers and helps to spread the cinema more widely among people and thus increase its customers.

STIMULUS/RESPONSE SEQUENCES

- Search for a specific movie to watch.
- Displays a list of available movies and their showtimes, and make a reservation for a specific movie.
- Cancel an existing reservation.

FUNCTIONAL REQUIREMENTS

Other system features include:

- User:
  - Browse movies:
    This is by entering the main page of the site, where a list of films shown inside the cinema appears, and this page is available to system users or visitors who have not yet registered in the system.

  - Search for a movie:
    The user can search for a specific movie that is not displayed on the main page, using the search box on this page.

  - Book a ticket for a specific show:
    The user chooses the movie he wants to watch by clicking on it, then he can know all the details of the movie and choose the appropriate showtime for it from the available ones, and then he moves to the next page, which contains the existing and available seats in the showroom, so that he chooses one of the available seats, and then he can confirm his reservation for this seat By going to the payment screen and entering the required payment information to complete this process.

  - System registered and login:
    The user can create an account on the site and then use it to log in, book and pay through the site.

- Admin:
  - Add or delete a movie:
    The administrator can add or delete a movie on the site, or install a movie on the home page.

  - Edit specific movie details:
    The admin can modify the movie's details, such as modify its showtimes or adding new one.

- Add or cancel a reservation:
  The admin can reserve or cancel a reservation through the site, and this helps the admin to deal with customers in some cases in which the customer cannot do this through the site.

- Review and follow up records:
  The admin can follow up and review movie records, reservations, payment and customer information registered on the site so that he can access the cinema database.

- Communication with customers
  The admin will have a special screen through which he can communicate with customers to answer their questions and solve their problems.

- System
  - Allowing the employee to create a user to log into the system.
  - Giving the employee the permissions of modification, addition and deletion.
  - Giving the user the permissions of reservation and payment.
  - Send a message to the user after installing the reservation.

4. EXTERNAL INTERFACE REQUIREMENTS

4.1 USER INTERFACES

- Front-end software: CSS, HTML & Javascript.
- Back-end software: Oracle.

4.2 HARDWARE INTERFACES

- Windows.
- Android.
- A browser that supports CSS, HTML & Javascript.

4.3 SOFTWARE INTERFACES

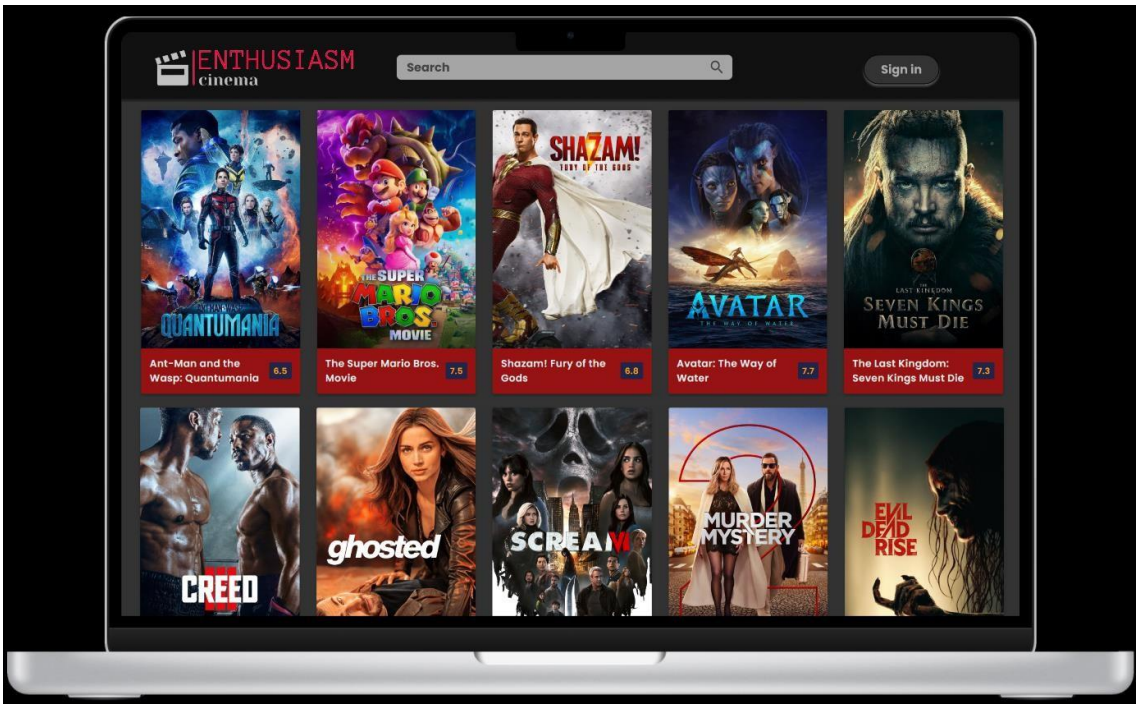
Following are the software used for the online movie ticket booking application.

Operating system	We have chosen Windows operating system for its best support and user-friendliness. We also chose the Android system because it is close to the user.
Database	To save the shows records, customer records we have chosen Oracle database.
Javascript.	To implement the project we have chosen Javascript language for its interactive support.

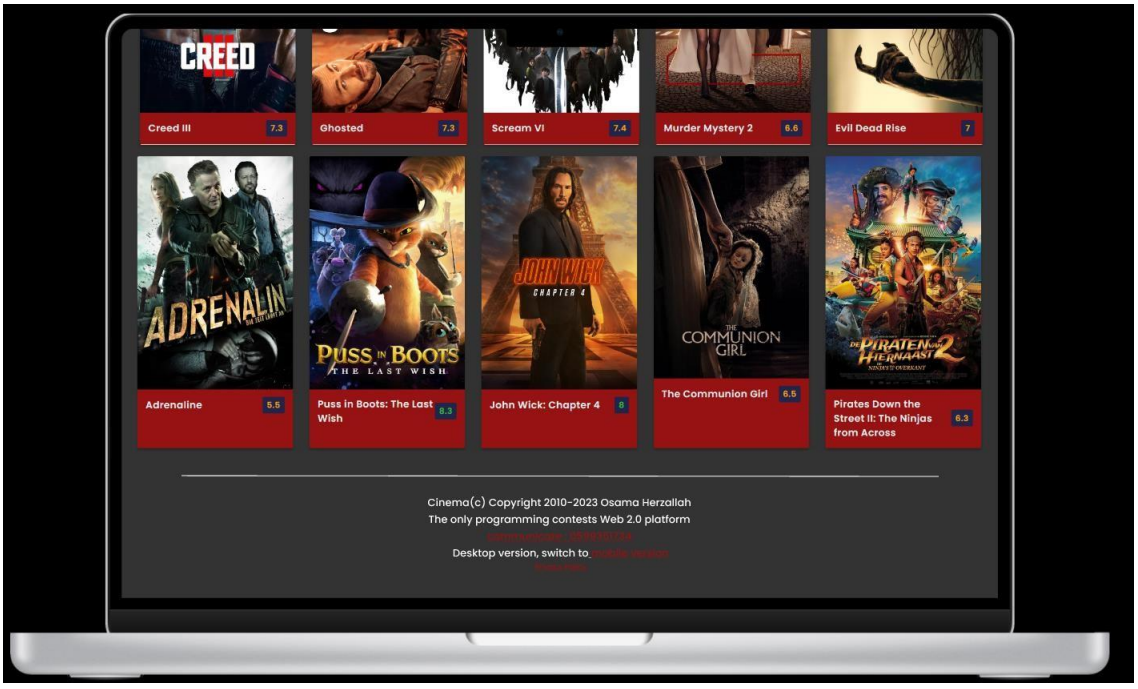
4.4 COMMUNICATION INTERFACES

This project supports all types of web browsers. We are using simple electronic forms for reservation forms, ticket booking etc.

- Start page: through it, we can browse the list of films displayed on the site or search for a movie, and we can also access the login screen and obtain information that helps us communicate with customer service.



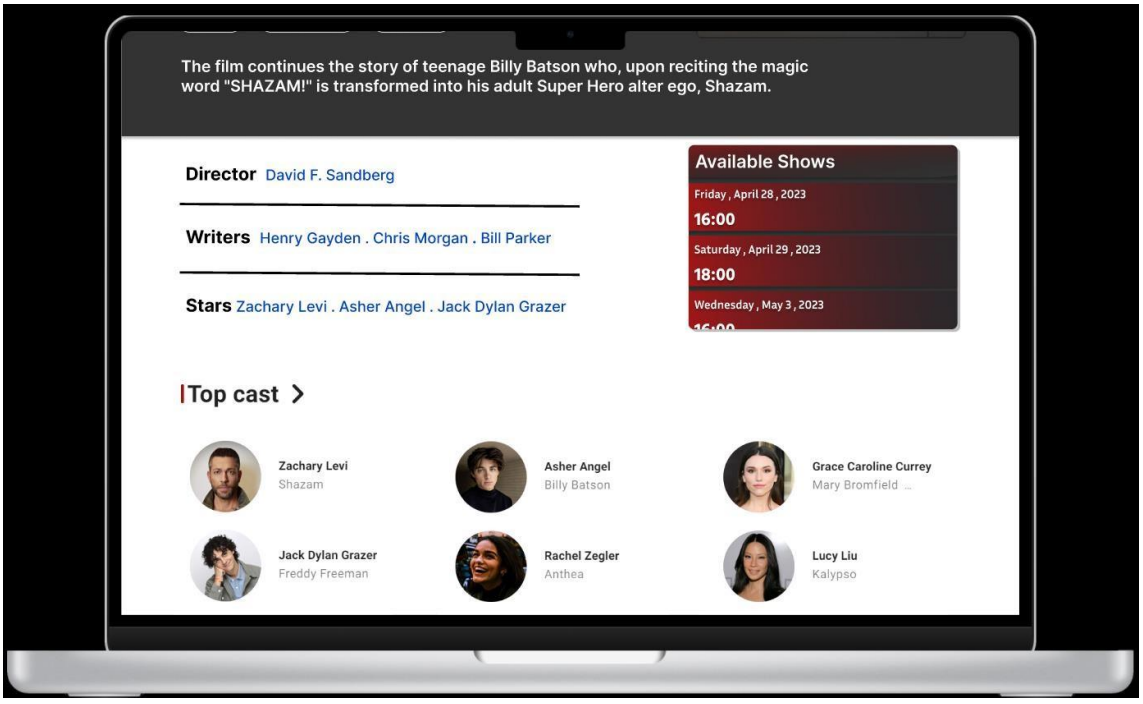
2-1 Start Page (1)



2-2 Start Page (2)

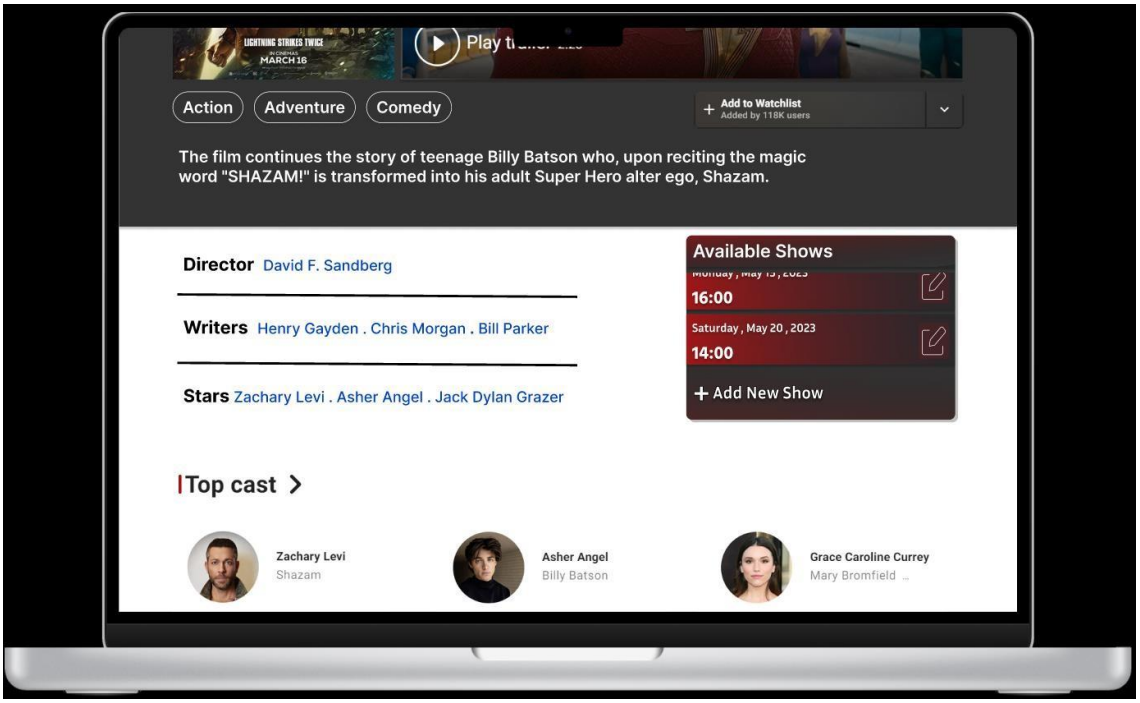
- Movie details page: Through it, we see all the details of the movie that was chosen, such as its classification, announcement, overview, rating, and the top cast. Find out the details of the available shows for this movie and choose the appropriate ones, and we can add it to the wish list.
  The administrator can also add new show or modify the details of the available shows.

2-3 Movie details page (1)



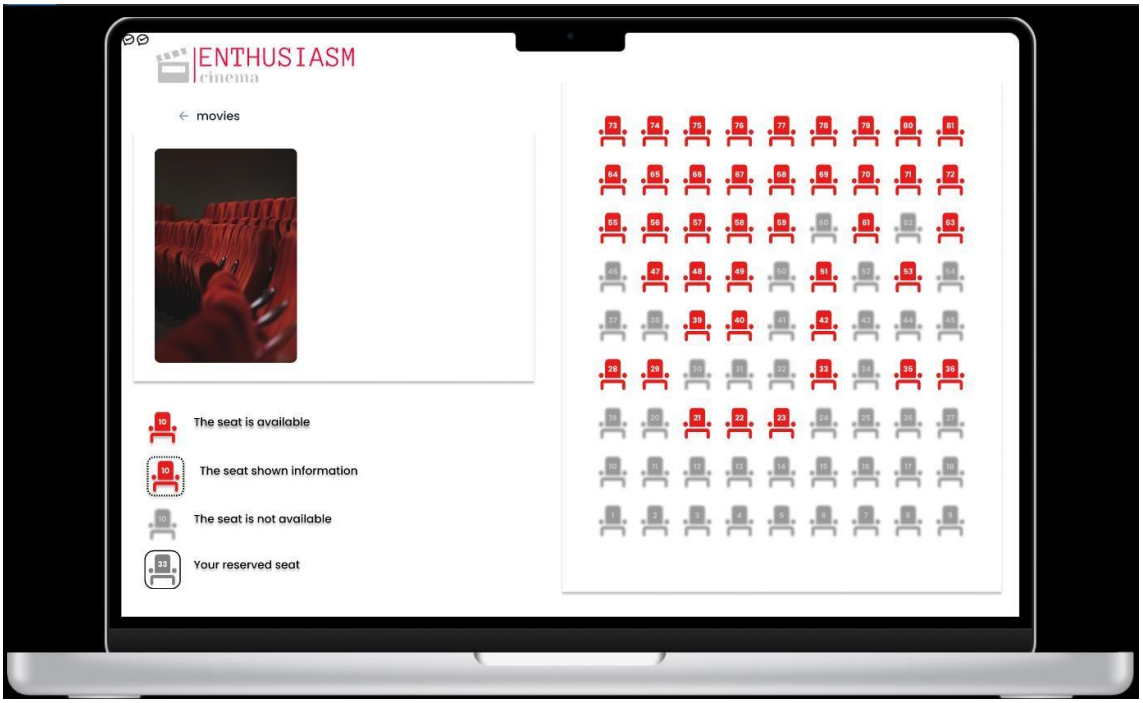
2-4 Movie details page (2)

- From admin view.



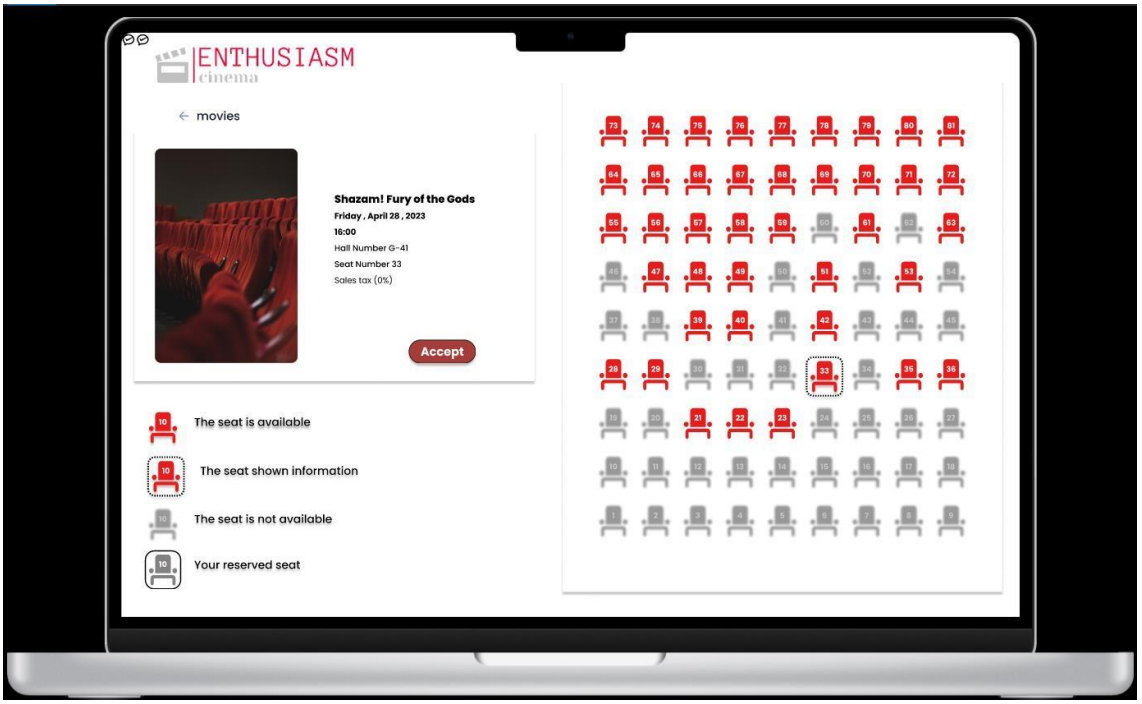
2-5 Movie details page (Admin)

- Seats details page: through it, we can know the details and status of each seat in the show and choose one of the available seats to reserve it, so that the available seats can be distinguished from others by the color in which they appear.



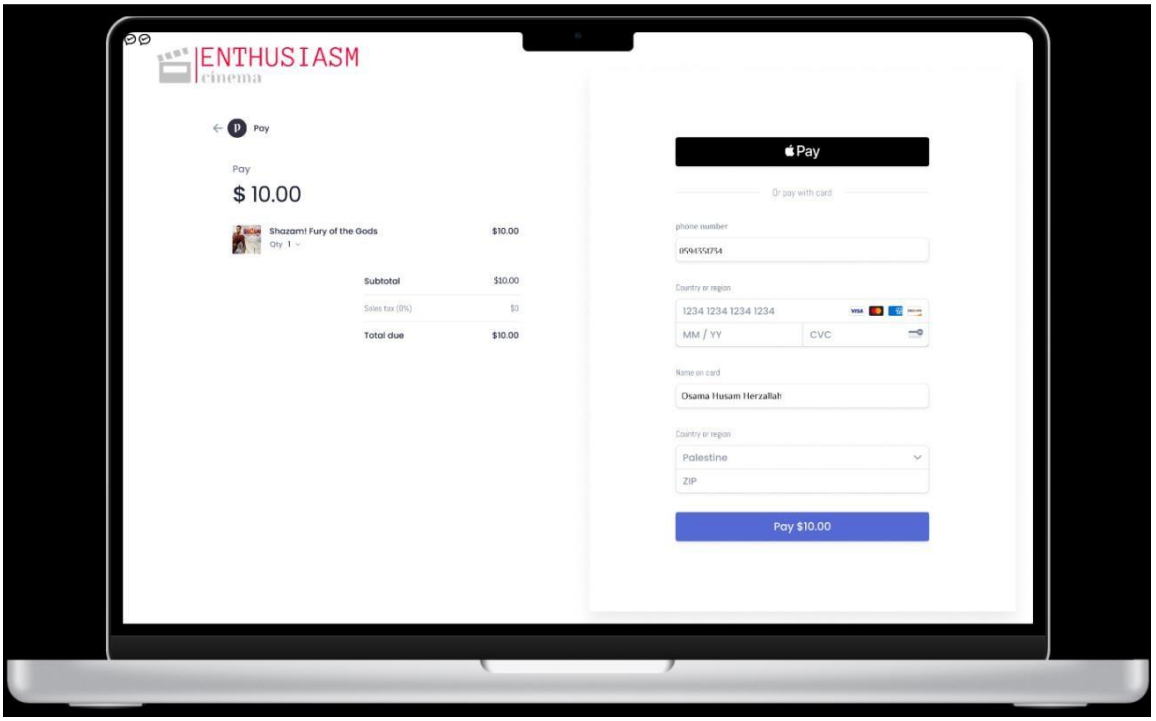
2-6 Seats details page (1)

- The page when selecting one of the available seats.



2-7 Seats details page (2)

- Payment page: to confirm the reservation, we go to the payment page, where we enter the information necessary to complete the payment process, and payment details such as the ticket price appear.

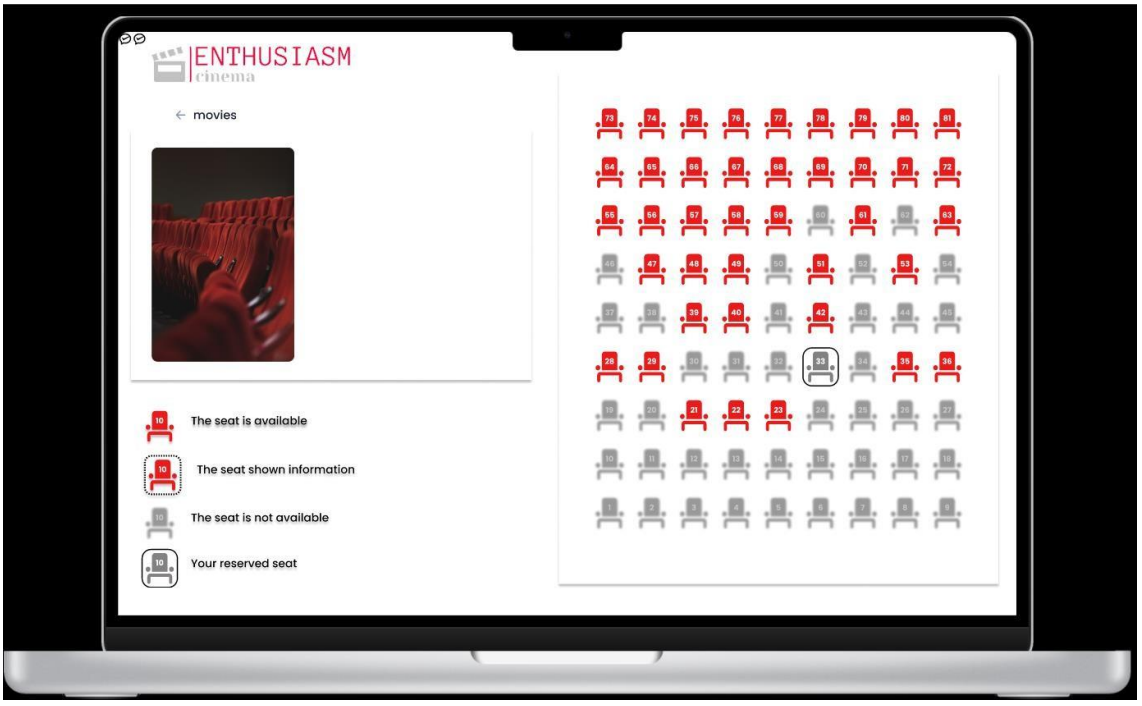


2-8 Payment page

- When the payment is completed successfully, this page will appear for a few seconds.

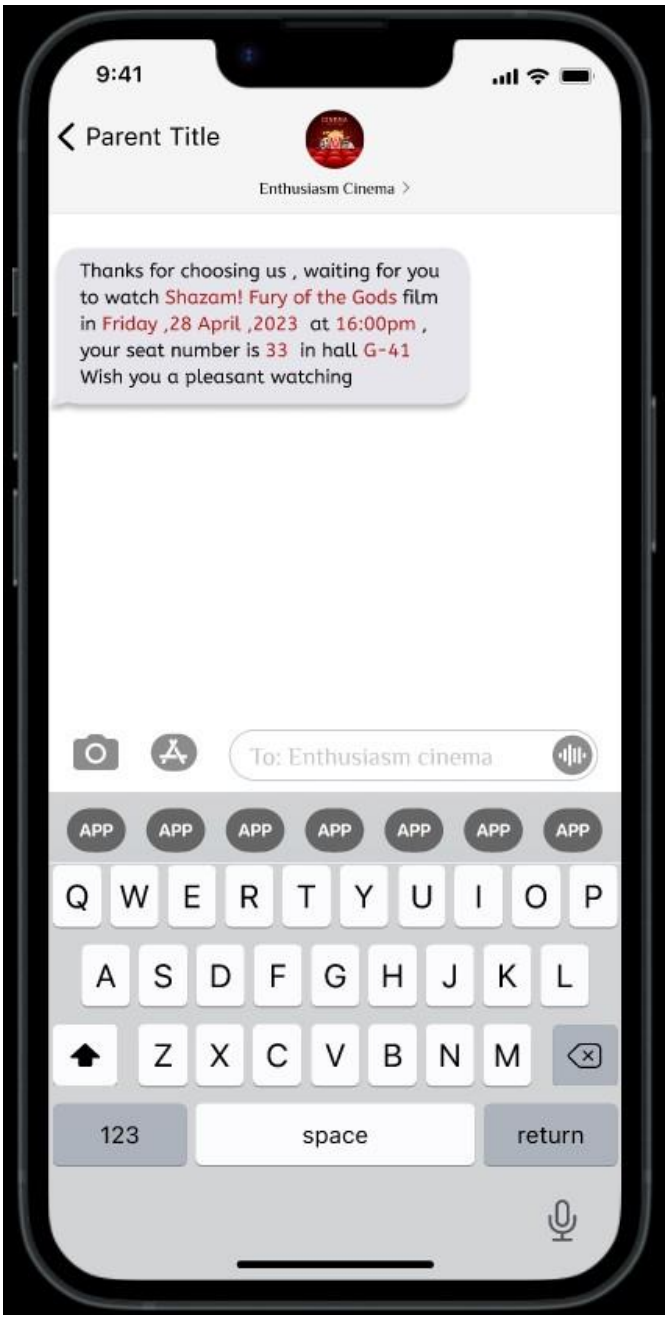
2-9 Thanks page

- After that, we return to the seat details page, so that the seat that has been reserved becomes distinct from the rest of the seats, and other seats can be reserved.



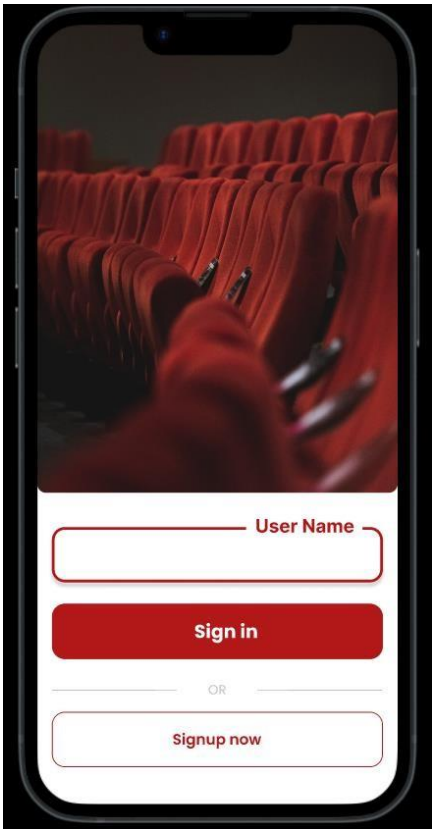
2-10 Seats details page (3)

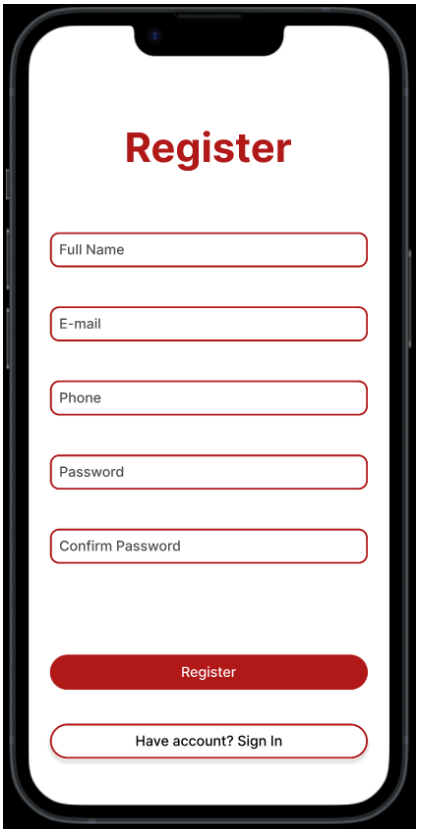
• After completing the reservation process, a text message will be sent to the customer containing all the details of his reservation.

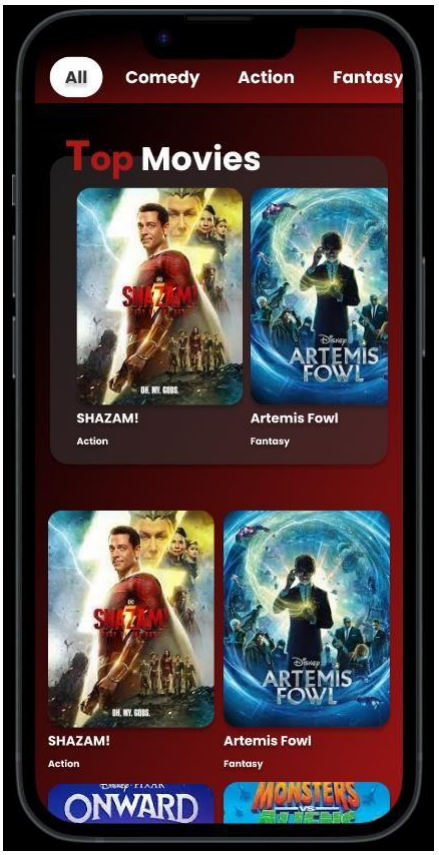


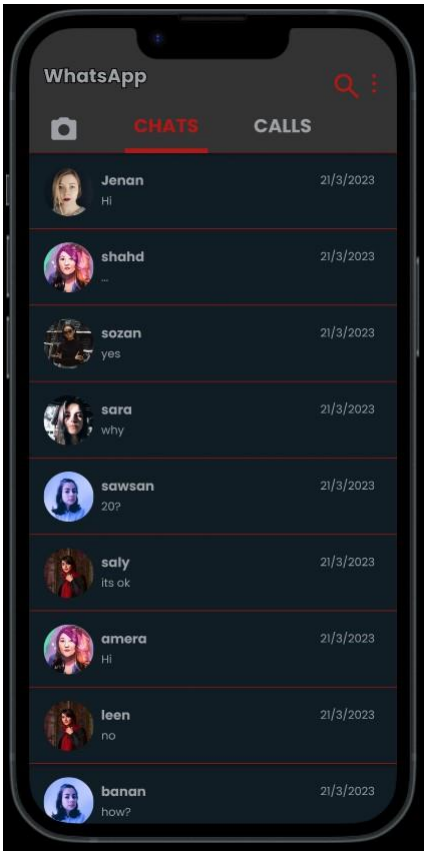
2-11 SMS Screen

These are some of the screens that appear when using the phone's browser to enter the site and book.









2-12 Phone Screens

5. NONFUNCTIONAL REQUIREMENTS

5.1 PERFORMANCE REQUIREMENTS

- The system should let user place an order in a short period of time.

- The system is represented by an ER-diagram, which is a technique for representing the logical structure of a database in a pictorial manner. to organize data and relationships in the form of entities, attributes, and relationships.

- All tables in the database should be normalized at least up to 3rd normal form. So fetching data from database shall not exceed 5 to 10 seconds in worst case.

5.2 SAFETY REQUIREMENTS

The system makes regular backups in order to keep a copy of the database and the records and data inside it so that we can recover and rebuild the system in the event of damage or a problem such as a disk failure.

5.3 SECURITY REQUIREMENTS

The system fulfills the security requirements as it requires a login with a name and a password in order to perform the reservation or payment process, and when the payment process is made, the system requests all payment card information in order to complete this process, and the system maintains the confidentiality of user data, records and payment information for them. No one can access them and encrypt passwords when they are saved.

5.4 SOFTWARE QUALITY ATTRIBUTES

- Availability: The shows should be available on the specified date and specified time customers are doing advance reservations.

- Correctness: All details and information in the system must be correct, such as reservation details, so each customer will watch the movie for which he booked a ticket at the correct time and in the seat he reserved through the website.

- Maintainability: The web application must support regular updates to ensure compatibility with the latest web technologies, Bug fixes, and security patches.

- Usability: The system should satisfy a maximum number of customers' needs. The application should be accessible on multiple devices, including desktop and mobile.

Thank you Dr. Osama Hamed for supervising this project, providing us with guidance and always answering our questions.