

(21)-Cinema Management System

Dr. Nagwa Mustafa

Name	ID	Section	Department
هبة حسام محمد علي	20201700958	9	CS
بسنت عبد الرؤف السيد	20201700189	2	CS
وسام سمير محمد النواوي	20201700973	9	CS
يماني مصطفى يونس محمود	20201700989	9	CS
ميرنا طارق راشد نور الدين	20201700880	8	CS
عمر محمد محمود اسماعيل	20201700519	5	CS

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1. Introduction:

A cinema management system is a software solution that helps cinema owners and managers efficiently manage and automate various tasks related to running a cinema. The system typically includes features which will help maintain the All Aspects of Cinema, Movies, Customer's details, and Sale's detail. The company wants to find a solution to reduce its operating costs. The major goal of the system is to fulfill the client's wishes and provide a better working environment for the staff to work in an easy and effective way so they can save time and work in a more efficient way.

2. User Requirements:

1. The customers can display available movies, screen hall details and its schedule so that they can reserve suitable tickets.
2. The website moderator shall the permission to edit, add or delete website data (available movies - schedules - screen halls details).
3. There exists a super admin that shall gives specific permissions to moderators, not all moderators should have all permissions.
4. The sales manager can generates monthly reports showing sales information and revenues during that month.

3. Functional Requirements:

Scheduling:

-**Description:** The system should allow the admin to create and manage schedules for films, including showing times, dates, and theaters.

-**Requirements:** Film's Information such as name, time and halls.

-**Source:** Admin.

-**preconditions:**

- The admin is logged into the system.
- The films have been added to the system and their details (such as duration, language, genre and age rating) have been entered.
- The halls have been added to the system, and their details (such as location, capacity and available technology) have been entered.

-**postconditions:**

- The schedules for the films have been created and saved in the system.
- The admin can view and manage the schedules for the films.
- The customers can view the schedules for the films and purchase tickets accordingly.

-**Output:**

- A user-friendly interface where the admin can create and manage schedules for the films, including showing times, dates and theaters.
- A database that stores the schedules for the films, which can be accessed by the system and displayed to the customers.

Ticketing:

- **Description:** The system should allow customers to purchase tickets online or at the box office. It should also be able to manage seat selection and ticket printing.

-**Requirements:** Data of Tickets.

-**Source:** User.

-**preconditions:**

- The films' schedules have been created and saved in the system.
- The theaters have been added to the system, and their seating plans have been entered.

-**postconditions:**

- The customer has successfully purchased a ticket for the desired film, showing time, and theater.
- The seat has been reserved for the customer and is no longer available for other customers to purchase.
- The ticket has been printed, or a digital copy has been sent to the customer's email.

-Output:

- A user-friendly interface for customers to select and purchase tickets online or at the box office.
- A system that manages seat selection and reservation, preventing overbooking or double bookings.
- A mechanism for printing physical tickets or sending digital tickets to customers' email addresses.

Search for Movie Screen/Hall:

-Description: The search function in a cinema management system is a critical feature that enables users to search and locate movies' halls, screens and display other movie details within the cinema.

-Requirements: Film name.

-Source: User.

-preconditions:

- The movies, halls, and screens have been added to the system with their respective details.
- The user has logged into the system.

-postconditions:

- The search results are displayed in a user-friendly interface that is easy to navigate.
- The search results provide detailed information about the movies, halls, and screens, including their show timings, availability, and ticket prices.

-Output:

- A user-friendly interface that allows users to search for movies, halls, and screens within the cinema management system.
- Search results that provide detailed information about the movies, halls, and screens, including their show timings, availability, and ticket prices.
- The ability to filter search results based on various parameters, such as movie genre and hall type.
- The ability to book tickets for the selected movie directly from the search results page.

Register

-Description: This function is about adding information to create a new account.

-Input: (First name, Last name, birthdate, gender, password, Username, Phone number, E-mail).

-Source: User.

-Preconditions:

- The user has access to the registration functionality.
- The user has a valid email address and phone number.

-Postconditions:

- New account is added to the database.
- The user is logged in and directed to the appropriate page.
- The user can now access and use the features available for registered users.

-Output:

- A user-friendly interface that allows users to input their personal information.
- A confirmation message is displayed to the user upon successful registration.

Login

-Description: The Login function in a cinema management system allows registered users to access the system by providing their login credentials, including their username and password. This function is necessary for users to search for movies, halls, screens, and schedule tickets.

-Input: (Username, password).

-Source: User.

-Preconditions:

- The user has already created an account on the system.
- The user has a valid username and password.

-Postconditions:

- The user is successfully logged into the system and gains access to the system features available for registered users.
- The user can search for movies and book tickets.

-Output:

- A user-friendly interface that allows the user to input their login credentials.
- An error message is displayed if the user enters incorrect login credentials.
- A confirmation message is displayed to the user upon successful login.

Sales Analysis:

-Description: The sales analysis reports provide valuable insights into the cinema's revenue, expenses, and profits, which can help cinema owners and managers

make data-driven decisions. It allows cinema owners and managers to generate sales reports and analyze cinema's financial performance.

-**Requirements:** The number of tickets sold and the price of each of them.

-**Source:** Admin.

-**preconditions:**

- The cinema has been operational for a period of time, during which films have been shown and tickets sold.
- The sales and expense data have been entered into the system.
- The cinema owners and managers have access to the system.

-**postconditions:**

- The cinema owners and managers can generate sales reports that provide insights into the cinema's revenue, expenses, and profits.
- The reports can be filtered by various parameters, such as date range, film, theater, ticket type and customer demographics.
- The reports can be exported or printed for further analysis and decision-making.

-**Output:**

- A user-friendly interface for generating sales reports.
- Reports that provide valuable insights into the cinema's financial performance, such as revenue by film, revenue by theater, revenue by date range, expenses, and profits.
- Reports that can be exported or printed for further analysis and decision-making.

4. Non-Functional Requirements:

1. Security

The system requires the users to identify themselves by using login-id and password. Any user who uses the system shall have a login-id and a password. The access to the system will be according to the privileges of the user. This will be used to authenticate the user accessing the system.

2. Availability

The system will be available to its users 24/7.

3. Performance

The system has a simple GUI, which is self-explanatory and user friendly. The lists, reports and results generated by the system will not take more than 2-3 sec Responses to queries shall take no longer than 4-5 sec to load onto the screen after the user submits the query. The system shall display confirmation messages to the user within 1-2 sec after the user submits information to the system.

4. Software Interfaces

The system will be implemented with C# using MS Visual studio IDE with provided APIs from Oracle database.

5. Accuracy

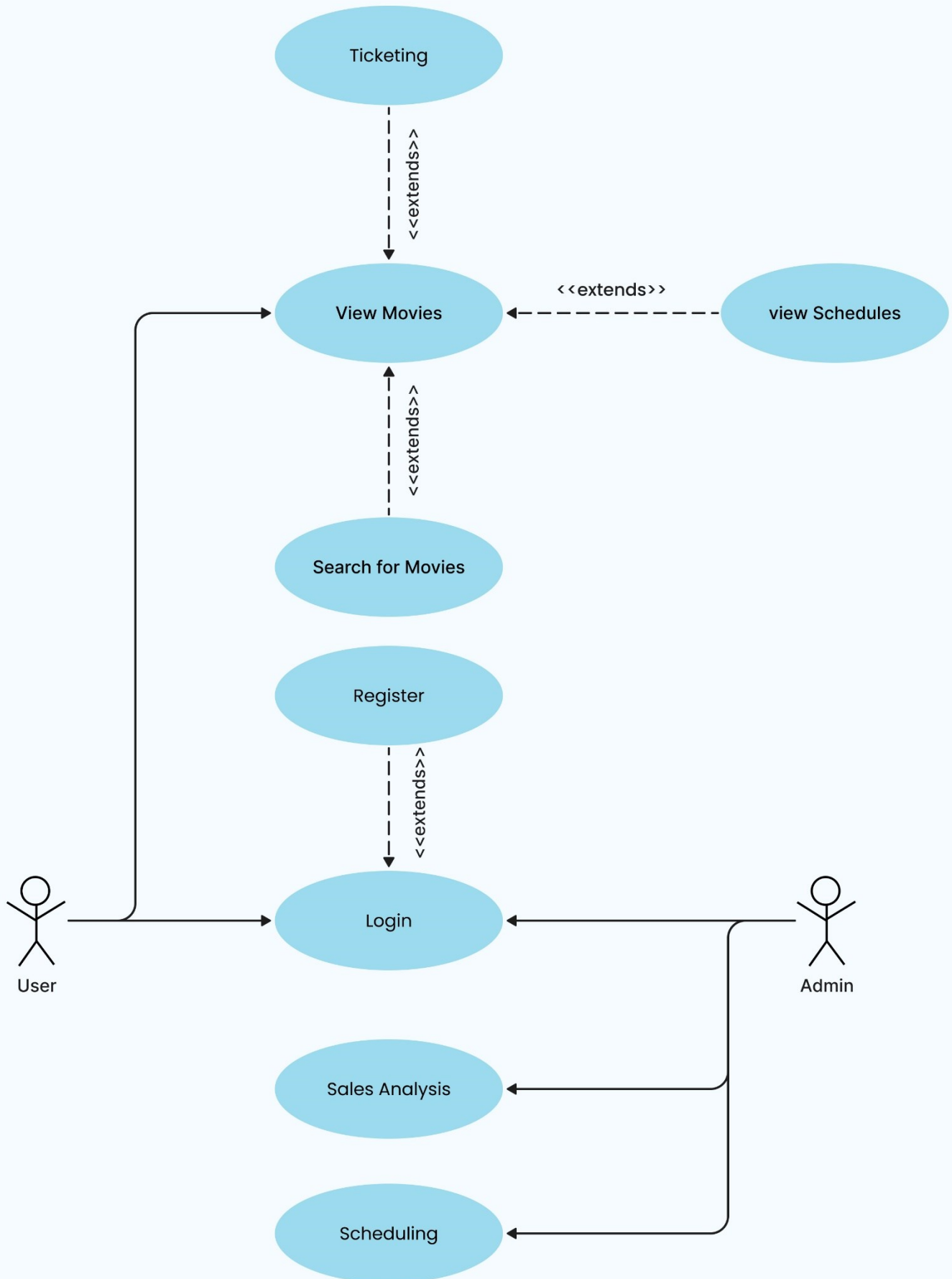
The system will generate accurate results and will behave according to the User Requirements.

6. Correctness

Our system will be according to all the requirements collected. All the requirement will be met to the User Requirements.

Use Case Diagram:

USE CASE



Sequence Diagram:

