Experiment No: 07   **Date: 05/08/2024**

MINI PROJECT

The Movie Booking System

Aim: Develop database application using front-end tool & back-end DBMS.

Abstract:

The Movie Booking System is an application designed to facilitate the management and booking of movie screenings. It includes two primary components: an Admin Panel for managing movie details, showtimes, and user bookings, and a User Interface that allows customers to browse available movies, select preferred showtimes, and book tickets.
The Admin Panel enables authorized users to add, update, and delete movie listings and manage screening schedules. The User Interface provides a streamlined and engaging experience for users, enabling easy booking and ticket management. This system is designed to be efficient, user-friendly, and scalable, making it a comprehensive solution for movie booking and management.

Scope:

The Movie Booking System is designed to enhance the management of movie screenings and user bookings. Its key areas include:

I.   **User Management:** The system allows users to create accounts, manage profiles, and view booking history.

II. **Movie Management:** Administrators can add, update, or remove movies and manage screening schedules, ensuring accurate and timely information.

III. **Booking System:** Users can browse available movies, select showtimes, and book tickets with seat selection, providing a user-friendly experience.

IV. **Scalability:** The system is designed to accommodate future enhancements, such as payment gateway integration and support for multiple theatres, making it adaptable to changing business needs.

V.   **Analytics and Reporting:** Future implementations may include analytics tools to track booking trends and user preferences, aiding administrators in decision-making.

VI. **Security:** Implementing secure user authentication and data protection measures is a priority to ensure user privacy and system integrity.

Reusability:

The Movie Booking System is designed with reusability in mind, ensuring that components can be easily integrated or modified for future projects or enhancements. Key aspects of reusability include:

a. **Modular Architecture:** The system employs a modular design, where distinct components such as user management, movie management, and booking functionalities can be developed and maintained independently. This allows developers to reuse these modules in other applications or projects with minimal adjustments.

b. **Component-Based Development:** By using reusable UI components, such as buttons, forms, and alerts, the project promotes consistent design and functionality across the application. These components can be easily adapted for other projects, reducing development time and effort.

c. **API Integration:** The system's backend can expose APIs that allow external applications to interact with its functionalities. This promotes reusability by enabling third-party

services, such as payment gateways or external booking systems, to integrate seamlessly.

d. **Database Schema:** The database design is structured to facilitate easy modification and extension. Future projects can leverage the existing schema, making it easier to build new features or applications without starting from scratch.

e. **Documentation:** Comprehensive documentation of the code and system architecture supports easier understanding and implementation for future developers, enhancing the reusability of the system's components.

Design/Implementation:

The Movie Booking System employs a client-server architecture, separating the frontend and backend for optimal performance. Key components include:

1. **Frontend:** Developed using React, the user interface is designed for ease of use and accessibility, featuring a responsive layout that adapts to various devices.
2. **Backend:** Implemented with Node.js and Express, the backend handles API requests, manages data interactions, and supports functionalities such as user authentication and movie management.
3. **Database:** MongoDB is used for flexible data storage, organizing collections for users, movies, showtimes, and bookings to ensure efficient data handling.
4. **Admin Panel:** Provides administrators with tools to manage movie listings and user bookings, enabling real-time updates and easy data management.
5. **User Workflow:** Users can easily browse movies, select showtimes, and book tickets, enhancing their overall experience.

Testing:

Testing is essential to ensure the Movie Booking System operates effectively and meets user requirements. The testing process includes:

i. **Unit Testing:** Individual components are tested to verify their functionality, ensuring that each feature, such as movie management and ticket booking, works as intended.

ii. **Integration Testing:** This checks the interaction between different modules, such as the frontend and backend, to ensure seamless communication and data flow.

iii. **Functional Testing:** Functional tests validate that the system meets specified requirements by testing user journeys, including registration, movie selection, and booking processes.

iv. **Security Testing:** Basic security measures are implemented to identify vulnerabilities and ensure that user data is protected.

v. **User Testing:** Feedback is gathered from end-users to assess usability and identify any issues before deployment.

Admin panel:

Register:

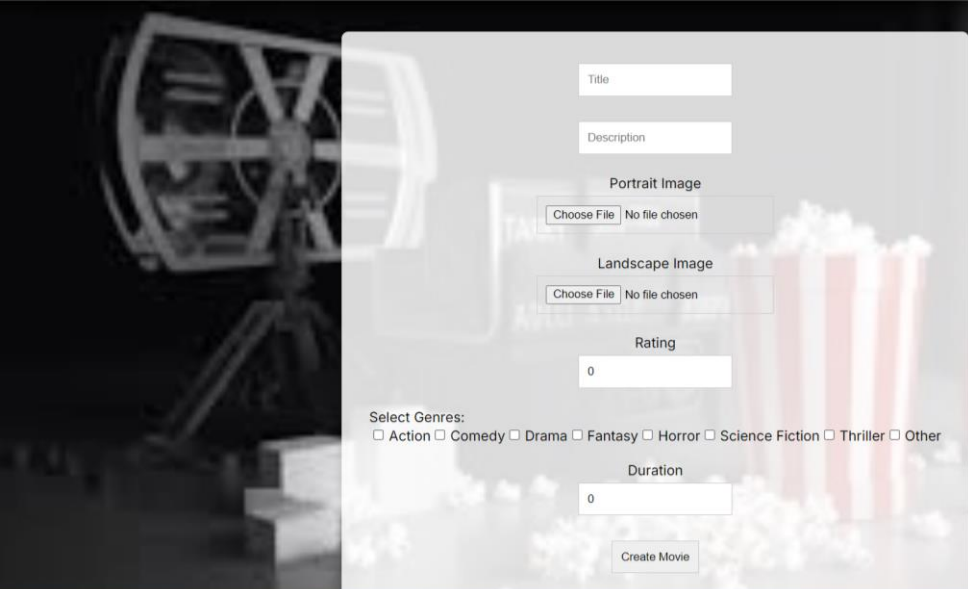**_id:** ObjectId('6716102691fa3e119d3b48a6')
name : "Carl"
email : "carl@gmail.com"
password : "$2b$08$lYxl7JkaBAWldU29cRZO5OwUF03mMUIOVYS9tK3/THouRehOXE5tq"
createdAt : 2024-10-21T08:26:14.332+00:00
updatedAt : 2024-10-21T08:26:14.332+00:00
__v : 0

_id: ObjectId('67161a7991fa3e119d3b4a47')
name : "sai"
email : "sai@gmail.com"
password : "$2b$08$NX8PkzlxsjvOxs.A/Ar5UOVqJbkwsTUNNHzFie/1KS2arWYKfJdr2"
createdAt : 2024-10-21T09:10:17.446+00:00
updatedAt : 2024-10-21T09:10:17.446+00:00
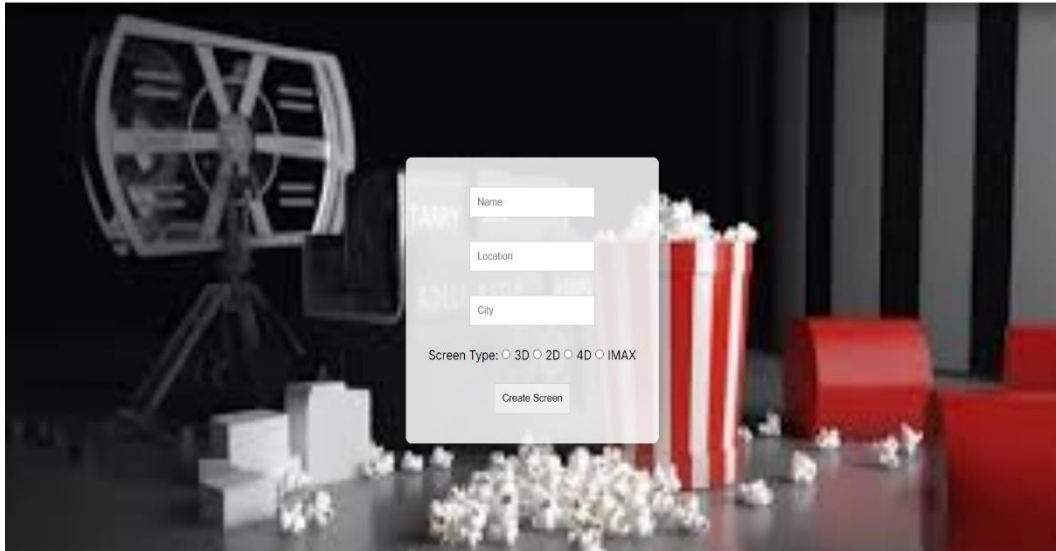**__v :** 0

Add movie:

_id: ObjectId('671610eb91fa3e119d3b48ab')
title : "Jigra"
description : "Jigra is the heart wrenching tale of a sister taking on the world to a…"
portraitImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729499370/obkmgpa53…"
landscapeImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729499371/xsyrkhj04…"
rating : 7.6
genre : Array (3)
duration : 230
cast : Array (empty)
crew : Array (empty)
__v : 0

_id: ObjectId('671611b291fa3e119d3b48ad')
title : "Venom: the last dance"
description : "Eddie and Venom are on the run. Hunted by both of their worlds and wit…"
portraitImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729499567/evlotywp9…"
landscapeImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729499569/vuuz5utmk…"
rating : 7
genre : Array (2)
duration : 150
cast : Array (empty)
crew : Array (empty)
__v : 0

_id: ObjectId('6716136d91fa3e119d3b48b0')
title : "Panni"
description : "Hanumant Kendre`s marriage got called off by the girl Suvarna`s family…"
portraitImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729500011/xgfro7ruc…"
landscapeImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729500012/ugtnlwnph…"
rating : 8.3
genre : Array (2)
duration : 230
cast : Array (empty)
crew : Array (empty)
__v : 0

_id: ObjectId('671615a791fa3e119d3b4955')
title : "Vicky Vidhya Ka Vo Wala Video"
description : "A newly married couple`s relationship and reputation are put at risk w…"
portraitImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729500581/stwqgfxsu…"
landscapeImgUrl : "http://res.cloudinary.com/dhixjvvnt/image/upload/v1729500582/zfniagsve…"
rating : 7
genre : Array (3)
duration : 232
cast : Array (empty)
crew : Array (empty)
__v : 0

Add screen & schedule:

BOOK MOVIE   Add Movie   Add Screen   Add Schedule   Add Celeb

Name

Location

City

Screen Type: ○ 3D ○ 2D ○ 4D ○ IMAX

Create Screen

BOOK MOVIE   Add Movie   Add Screen   Add Schedule   Add Celeb

City   Search

Screens

Movies

Jigra	**Venom: the last dance**	**Panni**	**Vicky Vidhya Ka Vo Wala Video**
Jigra is the heart wrenching tale of a sister taking on the world to avenge her brother. Their odyssey of reunification tests their bond, their morals, and their inner strengths. Who wouldn`t set the world on fire to protect what`s theirs?	Eddie and Venom are on the run. Hunted by both of their worlds and with the net closing in, the duo are forced into a devastating decision that will bring the curtains down on Venom and Eddie`s last dance.	Hanumant Kendre`s marriage got called off by the girl Suvarna`s family due to water crisis in his drought prone village. Hanumant promised the girl that he would marry her the day he resolves this crisis in his village. "Will you wait for me?" He asked. What unfolded ahead is a breathtaking true story of human endeavor driven by love.	A newly married couple`s relationship and reputation are put at risk when their private video CD is stolen. The story follows their frantic and roller coaster journey to recover the CD, navigating a series of unexpected difficulties along the way.
7.6	7	8.3	7
ActionDramaThriller	ActionScience Fiction	DramaFantasy	ActionDramaFantasy
230	150	230	232

Vaittaiyan: the hunter	**the wild robot**	**the wild robot**
A sought-after supercop gets caught in a series of unexpected events in a criminal case. Amidst his struggle to justify the act, he must confront his moral compass while fighting corrupt, larger-than-life forces. Vettaiyan explores the underbelly of crime	Shipwrecked on a deserted island, a robot named Roz must learn to adapt to its new surroundings. Building relationships with the native animals, Roz soon develops a parental bond with an orphaned gosling.	Shipwrecked on a deserted island, a robot named Roz must learn to adapt to its new surroundings. Building relationships with the native animals, Roz soon develops a parental bond with an orphaned gosling.
	8.2	8.2

_id: ObjectId('6716138e91fa3e119d3b48b2')
name : "Screen 1"
location : "Mall"
seats : Array (3)
city : "mumbai"
screenType : "2D"
movieSchedules : Array (9)
__v : 9

_id: ObjectId('671613aa91fa3e119d3b48b6')
name : "Screen 3"
location : "PVR"
seats : Array (3)
city : "mumbai"
screenType : "3D"
movieSchedules : Array (4)
__v : 4

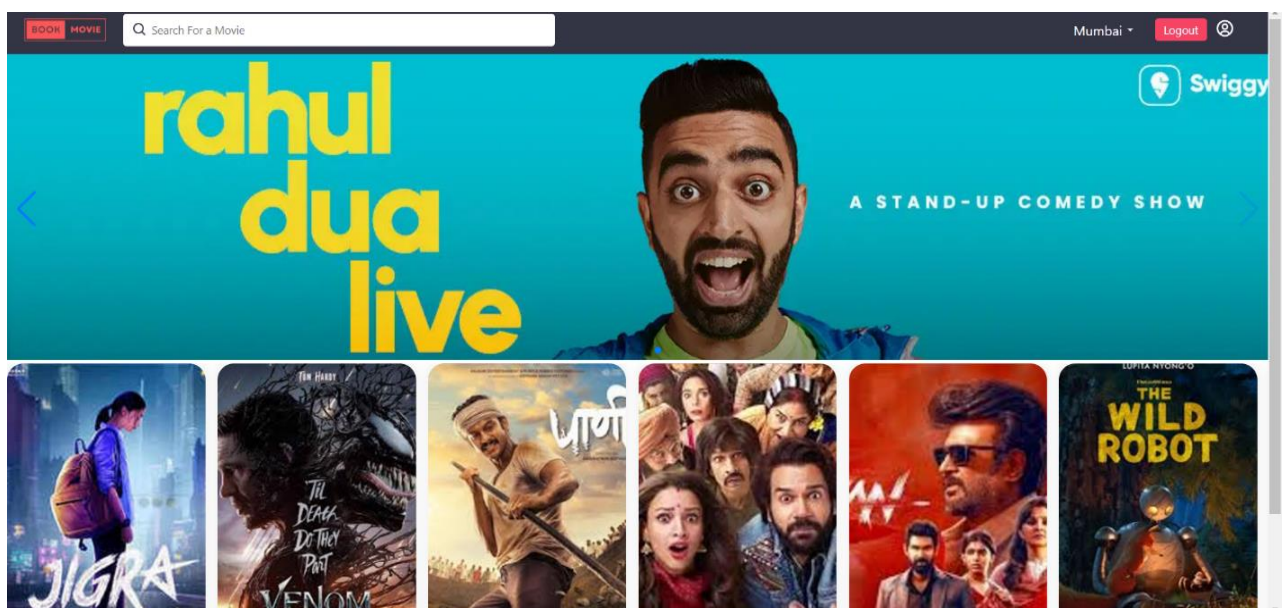**User Interface:**

Register:

_id: ObjectId('67160fa591fa3e119d3b489c')
name : "Elena"
password : "$2b$08$Fq/gqFphSi0iGqb8ZOLeg.8tklsgez/RLFZKBT41eIhZzYWKdnJ3C"
email : "elena@gmail.com"
▸ bookings : Array (2)
city : "Mumbai"
createdAt : 2024-10-21T08:24:05.640+00:00
updatedAt : 2024-10-21T09:17:07.902+00:00
__v : 2

Homepage:

Movie details:

Dates & Screens

Seats & payment:

BOOK MOVIE   🔍 Search For a Movie   Mumbai ▾   Logout   ⨀

Jigra - Screen 1
Action, Drama, Thriller

08:30

○ Not available   ○ Available   ● Selected

platinum - Rs. 500

H   1 **2** **3** 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

G   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

F   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

gold - Rs. 300

E   1 2 3 4 5 6 7 8 9 10   1 2 **3** **4** **5** **6** 7 8 9 10

D   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

C   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

silver - Rs. 150

B   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

A   1 2 3 4 5 6 7 8 9 10   1 2 3 4 5 6 7 8 9 10

Total   Rs. 2200   Book Now

Profile page:

```
_id: ObjectId('671e523eef146560a4f78e76')
showTime : "08:30"
showDate : 2024-10-28T00:00:00.000+00:00
movieId : ObjectId('671610eb91fa3e119d3b48ab')
screenId : ObjectId('6716138e91fa3e119d3b48b2')
▶ seats : Array (6)
totalPrice : 2200
paymentId : "123456789"
paymentType : "online"
userId : ObjectId('67160fa591fa3e119d3b489c')
__v : 0
```

Conclusion:

The database application was created successfully using front-end HTML, CSS, React and back-end Node.js, Express and database MongoDB.