A
Mini-Project Report on

Web based Movie Theatre Management Using Python

Submitted in complete fulfillment of the requirements
for the degree of
BACHELOR OF ENGINEERING
IN
Computer Science & Engineering
Artificial Intelligence & Machine Learning

by

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CERTIFICATE

This is to certify that the project entitled "**Web based Movie Theatre Management Using Python"** is a bonafide work of Shubham Patil (22106047), Aniruddha Pawar (22106009), Manasi Patil (22106042) submitted to the University of Mumbai in complete fulfillment of the requirement for the award of **Bachelor of Engineering** in **Computer Science & Engineering (Artificial Intelligence & Machine Learning).**

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PROJECT REPORT APPROVAL

This Mini project report entitled "**Web based Movie Theatre Management Using Python"** by **Shubham Patil, Aniruddha Pawar, Manasi Patil** is approved for the degree of ***Bachelor of Engineering*** in ***Computer Science &Engineering***, (AI&ML) ***2023-24***.

External Examiner: _____

Internal Examiner: _____

Place: APSIT, Thane

Date:

DECLARATION

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

A Python-based web platform has been developed to optimize cinema operations, featuring online ticket booking, automated seat allocation, real-time schedule monitoring, and efficient data management. Tailored for both cinema administrators and patrons, the system enables administrators to efficiently handle tasks such as scheduling, ticketing, and data management, while patrons enjoy a user-friendly interface for convenient online ticket booking and seat allocation. This innovation, spurred by the demand for increased operational efficiency and enhanced customer convenience in modern cinemas, replaces traditional manual methods of ticketing, seat assignment, and schedule management, which were prone to inefficiencies. The implementation of web-based movie theatre management systems has significantly improved overall efficiency, providing a streamlined and automated experience for administrators and patrons alike, effectively meeting contemporary audience needs.

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CHAPTER 1

INTRODUCTION

1. INTRODUCTION

Our web-based movie theatre management system is a cutting-edge, comprehensive solution designed to transform the traditional movie theatre experience into a modern, streamlined, and user-centric journey. Developed with the robust Python programming language and leveraging the dynamic capabilities of the Django framework, our system presents a seamless and intuitive interface that caters to the diverse needs of both administrators and patrons.

For moviegoers, the system is a gateway to the enchanting world of cinema. It keeps patrons well-informed about the latest and upcoming shows, ensuring they are always in the loop about new releases and can plan their movie outings accordingly. Whether it's the excitement of a new blockbuster or the allure of an independent film, our platform guarantees that users are up-to-date with the cinematic landscape. Patrons have the luxury of browsing through a rich database of movies, complete with detailed descriptions, release dates, genres, directors, and cast information. The ticket booking process is a breeze, allowing users to select the show date, the number of seats they desire, and even their preferred seating from an interactive chart. This level of personalization ensures that each visit to the theatre is a unique and enjoyable experience.

On the administrative side, the system is a powerhouse of efficiency. Administrators are endowed with extensive control over the management of movie information. They can effortlessly add new movies to the schedule, update existing listings, or remove outdated information, all through an intuitive and user-friendly interface. This ensures that the information presented to patrons is accurate, comprehensive, and current. In addition to movie management, administrators also oversee theatre operations, including the scheduling of shows, monitoring ticket availability, and managing showtimes. Security is paramount in our system, and robust authentication mechanisms are in place to ensure that only authorized personnel can access the administrative features. This not only protects sensitive data but also provides a secure and personalized experience for each user.

In today's rapidly evolving entertainment landscape, our web-based movie theatre management system stands out as a beacon of innovation, convenience, and security. It is the perfect blend of technology and entertainment, designed to enhance the movie-going experience for everyone involved. Whether you're an administrator looking to streamline theatre operations or a movie enthusiast searching for the perfect cinematic adventure, our platform is here to elevate your experience to unprecedented heights. Embark on this cinematic journey with us, where the magic of movies meets the marvels of modern technology, creating unforgettable experiences that resonate with movie lovers everywhere.

CHAPTER 2

LITERATURE SURVEY

2. LITERATURE SURVEY

2.1 HISTORY

The evolution of Movie Theatre Management Systems through websites spanned several decades, with notable milestones shaping the trajectory of these systems. The late 1980s and 1990s witnessed the foundational digitization of manual processes, laying the groundwork for subsequent advancements. The late 1990s and early 2000s marked a turning point with the introduction of online booking systems, revolutionizing the way patrons interacted with movie theatres. In the 2000s, a heightened emphasis on enhanced user interfaces aimed to improve the overall user experience. The 2010s were characterized by the integration of real-time analytics, robust security measures, and the widespread adoption of mobile accessibility. This decade also saw the rise of cloud-based solutions, offering scalability and streamlined maintenance. As the 2010s progressed into the 2020s, the integration of AI and machine learning technologies became more prevalent, contributing to personalized recommendations and sophisticated predictive analytics. This ongoing evolution underscores a commitment to innovation and adaptability, ensuring that Movie Theatre Management Systems continue to meet the evolving demands of the dynamic entertainment industry.

2.2 LITERATURE REVIEW

[1] A Cinema - Online Movie Ticket Booking System: *by Aarya Nanndaann Singh M N, Akash Hegde P, Abhilash R, Akash Kumar, Prof. Priyadarshini R Volume 9, Issue 2, Mar-Apr-2023.*

The Online Movie Ticket Booking System is a web-based application facilitating moviegoers and theatre owners to manage movie-related activities online. Users can book tickets, cancel or reschedule them, and even transfer tickets to others within the application. The system incorporates features such as ticket validation to prevent unauthorized entry, a movie recommendation system based on user age and interests, and the ability to filter movie reviews by rating or comments. The theatre owner interface allows for adding screens, managing user data, and movie details. The proposed system introduces enhancements like ticket rescheduling with a one-hour advance notice, in-app ticket transfer, and improved movie recommendations, making it a more reliable and user-friendly solution than the existing system.

[2] A New approach for online movie ticket booking System: *by Arjun Kumar Mishra, Shashank Gupta, Rajeev Kumar JETIR May 2022, Volume 9, Issue 5.*

The Online Movie Ticket Booking System is a C Programming Language-based application that allows users to book movie tickets without a login system. Users can select a movie, enter customer details, choose seat numbers, and complete the booking. The system lacks a permanent data storage mechanism and features an admin password for adjusting ticket prices and viewing reservations. Users can also cancel tickets using the booking ID. The web-based system aims to provide 24x7 movie ticket booking services, reducing manual work and allowing theater owners to manage activities online. It offers information on movies, show timings, and customers, enhancing the overall movie-going experience. The framework facilitates online access to movie details, hall information, and rates, providing users with better facilities on their computers or laptops. The system caters to both prime and non-prime users, with prime users enjoying additional booking privileges and offers upon payment of a certain amount.

[3] A Project on **Online Ticket Booking System:** *by Punyaslok Sarkar, Mrs Sherly Noel, Internation Research Journal of Engineering and Technology (IRJET), Volume: 07, Issue: 05, May 2020.*

The newly designed movie ticket booking website promises a faster, cleaner, and more personalized booking experience. Users can view movie show details, book tickets, and enjoy the convenience of combo bookings with the added option of having combos delivered to their seats during the movie. Registration is required for future bookings, storing user information securely in the database. The website is built using HTML for structuring web pages, CSS for presentation style, and PHP as a server-side scripting language for web development. PHP interacts with the MySQL backend database, providing enhanced performance, scalability, and security. The project successfully meets the requirements for online ticket booking, fostering effective communication among company managers, employees, and customers throughout the ticketing process.

[4] Consumers' Predilection towards Online Movie Ticket Booking System (With reference to bookmyshow.com in Davangere city): *by Punith Kumar.D.G and Pooja.K.M.B, Studies in Indian Place Names (UGC CARE Journal) ISSN: 2394-3114Vol-40, Special Issue-25, March 2020.*

The rise of smartphones has revolutionized the business landscape, giving way to technology-driven B2C channels like online food ordering, travel ticket booking, and, notably, online movie ticket booking systems. These platforms, such as BookMyShow, Paytm, and others, offer consumers a convenient and hassle-free way to book movie tickets, eliminating issues like long queues and black-market dealings. BookMyShow, founded in 2007 and operating in over 5 countries with 5000 screens, stands out as a market leader. The study focuses on consumer preferences towards online movie ticket booking, particularly with reference to BookMyShow.com in Davangere city. The research explores factors influencing consumer choices, emphasizing the need for companies to adapt strategies based on diverse demographic factors. While consumers may initially develop a predilection for innovative services, maintaining this preference poses a challenge. The study suggests further research in different geographical locations with refined sample sizes to enhance understanding and strategic adaptation.

[5] Design and Implementation of a Movie Reservation System: *by John Bosco, Caleb Chibuikem Victor, Ayangbekun Oluwafemi J.*& Ntiaya Epse Tuma International Journal of Computer Techniques -– Volume 6 Issue 4, August 2019.*

This research implements an online movie reservation system for cinema houses mainly in Nigeria. The ease of accessibility makes booking and reservation of tickets and seats convenient for customers/users to select and watch movie at any given period from anywhere in the world. Furthermore, full implementation of this research using software approach will hereby improve the booking system of Nigerian cinemas; even in other areas of life where reservations or bookings are done, and could also revive the dying movie watching in cinemas, while also helping to cut down cost of servicing and extra manpower needed to run report sorting. This reservation system is a slice of real time management system that can be practically implemented.

[6] A Comparative Study in Online Movie Ticket Booking System: *by Archit Roy, Vinit Shahdeo, Rajesh Kaluri Published In: Volume - 10, Issue - 1, Year – 2019.*

Research was conducted which involved a comparative study of various online movie booking systems across India, Singapore, Dubai, and the USA. The existing systems, predominantly PHP backend-based, exhibited common modules such as Movie Booking, Offers, Trailers, and Upcoming Movies. However, speed and reliability issues were identified as prevalent concerns. To address these challenges, a proposed solution involves developing a new system based on Node.js and MongoDB, offering improved speed and performance. Unique features were suggested, including immediate mailing of movie trailers to users upon ticket booking and a dynamic seat selection view resembling the actual theatre layout. Additional innovations include a post-movie review system with an incentive mechanism—users receive extra funds deposited to their wallet for future use upon submitting a review. The adoption of both older and newer technologies is proposed to elevate the popularity and efficiency of the Online Movie Booking System significantly.

CHAPTER 3

PROBLEM STATEMENT

3. PROBLEM STATEMENT

Before the invention of a Movie Theatre Management System through a website, people faced several challenges in the manual administration of movie theatres. These challenges included cumbersome and time-consuming processes for scheduling shows, managing ticket sales, and tracking overall revenue. Paper-based systems often led to errors in managing movie databases and posed difficulties in maintaining an organized record of customer bookings. Handling user authentication and access control was also a concern for security. Moreover, without a centralized system, obtaining real-time insights into theatre performance and customer feedback was challenging. The need for a more efficient, automated, and streamlined approach to theatre management, prompted by these challenges, led to the invention of a web-based system. This innovation aimed to overcome manual limitations, improve operational efficiency, enhance the customer experience, and provide a technologically advanced solution to meet the evolving demands of the entertainment industry.

CHAPTER 4

EXPERIMENTAL SETUP

4. EXPERIMENTAL SETUP

4.1 HARDWARE SETUP

The system configuration required to run the software includes the following:

1. Operating System: Windows 2016+ server version for optimal performance and compatibility with the latest software updates.
2. Memory: At least 8GB of RAM to ensure smooth multitasking and efficient handling of the system's operations.
3. Disk: A minimum of 256GB solid-state drive (SSD) for quick access to data and responsive system interactions.
4. CPU: Any AMD or Intel processor from 2018 onwards, which would provide sufficient processing power for the system's needs.
5. Internet: A stable and high-speed internet connection to ensure seamless access to the system for both patrons and administrators.
6. Network: Proper network infrastructure, including routers and switches, to support the connectivity needs of the system.
7. Firewall: A robust firewall to protect the system from unauthorized access and potential cyber threats.

These requirements should help set up and run the software effectively on the system.

4.2 SOFTWARE SETUP

1. Programming Language: Python is chosen as the primary programming language for the project.
2. Web Framework: Django, a high-level Python web framework, is utilized for developing the web-based application.
3. Database: SQLite is employed as the database management system for storing and managing data within the application.
4. Frontend Framework: JavaScript is selected for frontend development, providing dynamic and interactive elements to enhance user experience.
5. Backend Language: Django is utilized as the backend language, seamlessly integrating with Python to handle server-side logic and data management.
6. Operating System: The project is hosted on a server running Windows Server, providing the underlying infrastructure for deployment and operation.
7. Code Editor: Visual Studio Code is the chosen code editor, providing a versatile and feature-rich environment for writing, editing, and debugging code.

CHAPTER 5

PROPOSED SYSTEM & IMPLEMENTATION

5. PROPOSED SYSTEM & IMPLEMENTATION

5.1 BLOCK DIAGRAM OF PROPOSED SYSTEM

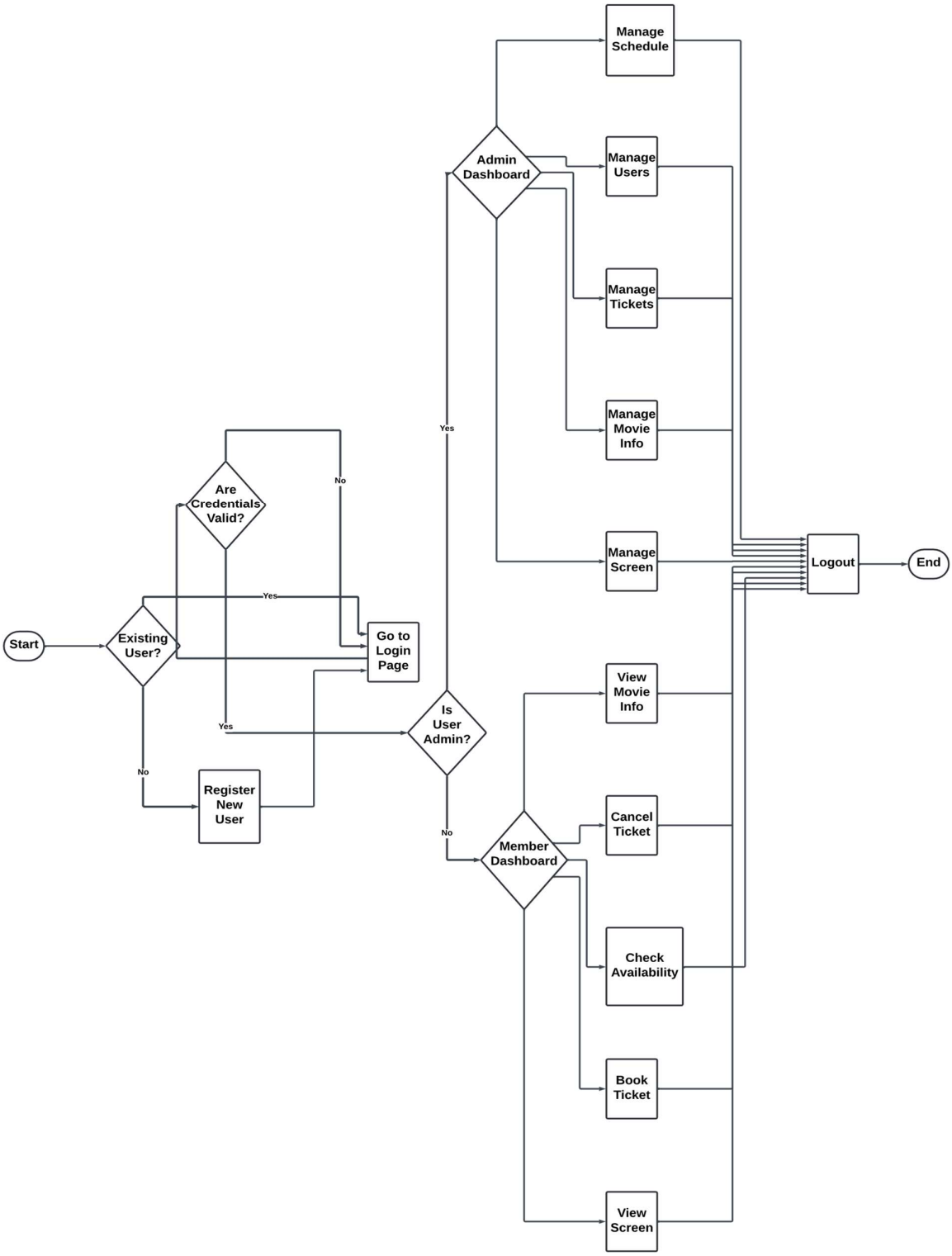

Fig 1.1 Block Diagram of Web based Movie Theatre Management System Using Python

5.2 DESCRIPTION OF BLOCK DIAGRAM

1. **Start**: The system begins here.
2. **Existing User**: Checks if the user is already registered.
    - If **Yes**: proceed to check if credentials are valid.
    - If **No**: allow the user to **Register** as a new user.
3. **Are Credentials Valid:** Validates login credentials.
    - If **Yes:** check if the user is an admin.
    - If **No**: redirect back to the **Login Page**.
4. **Is User Admin**:
    - If **Yes**: access the **Admin Dashboard**.
    - If **No**: go to the **Member Dashboard**.
5. **Admin Dashboard**: After successful login, the administrator accesses the dashboard.
    - Admin can:
        - **Manage Schedule**: Add, edit, or delete movie showtimes.
        - **Manage Users**: Block/unblock customers.
        - **Manage Tickets**: View and manage bookings.
        - **Manage Movie Info**: Update movie details.
        - **Manage Screen**: Configure screen settings.
6. **Member Dashboard**: For regular users (members):
    - **View Movie Info**: Browse movie details.
    - **Cancel Ticket**: Cancel existing bookings.
    - **Check Availability**: Check seat availability for a show.
    - **Book Ticket**: Reserve seats for a show.
    - **View Screen**: View the seating arrangement.
7. **Logout**: Ends the session for both admin and member users.
8. **End**: The system concludes here.

This flowchart outlines the major functionalities and interactions between users (both members and guests) and administrators within the movie theatre management system, including authentication checks and subsequent actions based on user roles.

5.3 IMPLEMENTATION

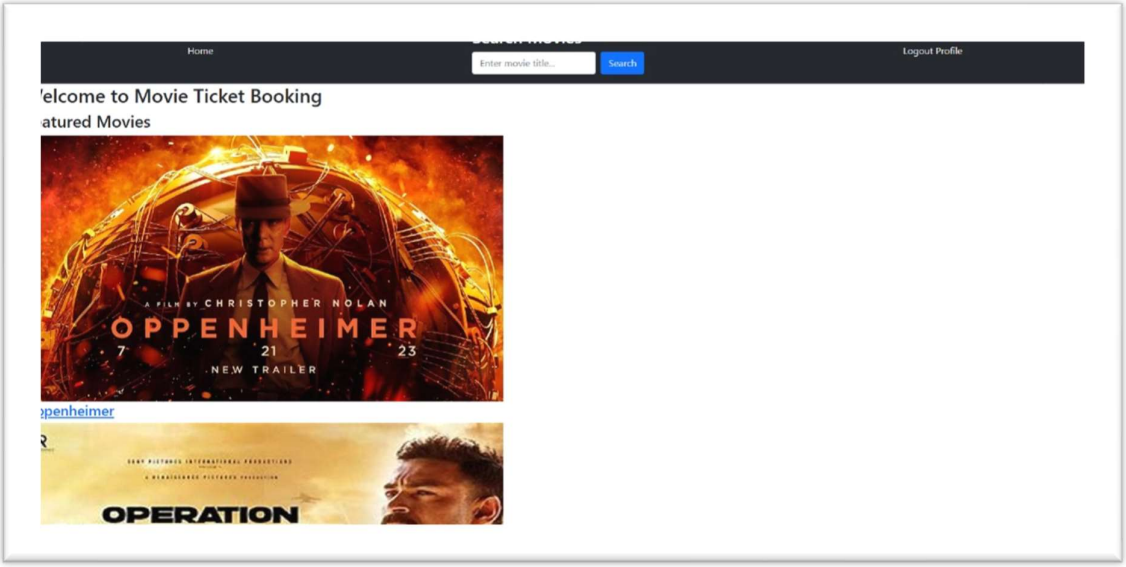

Fig 1.2 Home Page of Web based Movie Theatre Management System Using Python.

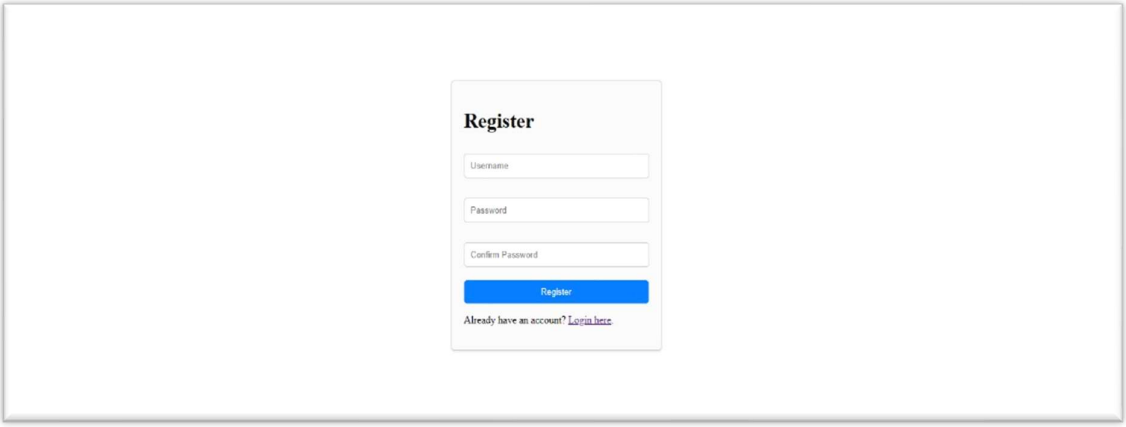

Fig 1.3 Registration Page of Web based Movie Theatre Management System Using Python.

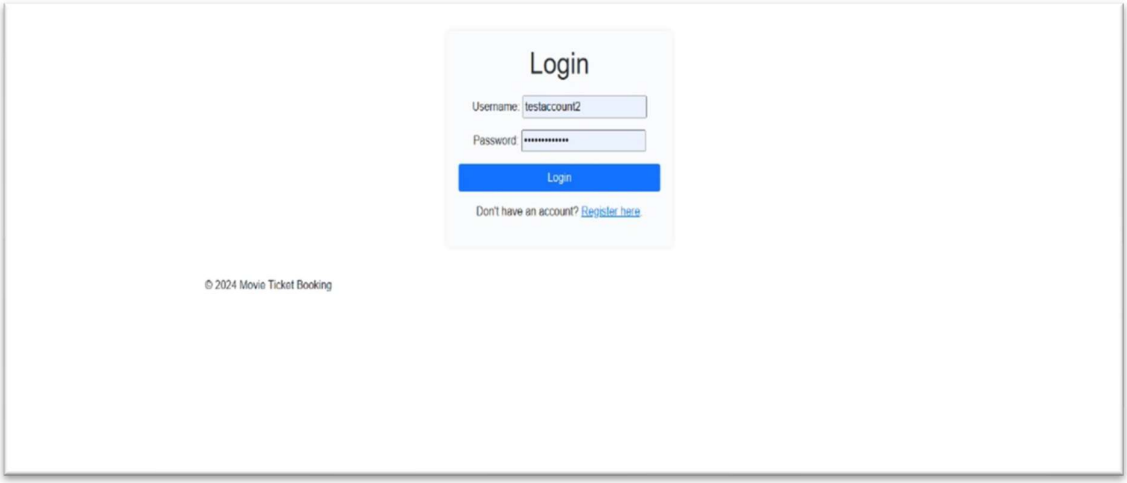

Fig 1.4 Login Page of Web based Movie Theatre Management System Using Python.

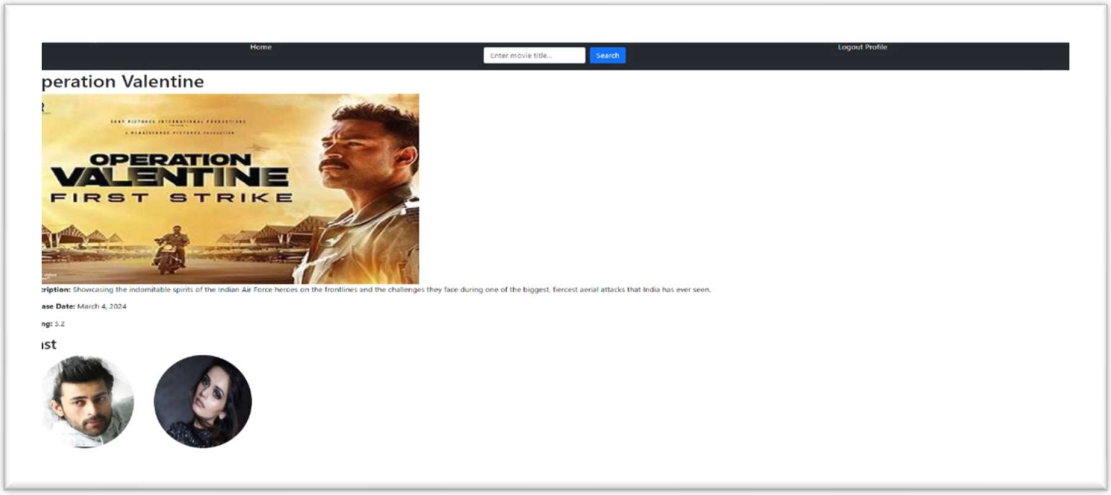

Fig 1.5 Details of the upcoming movie.

Fig 1.6 Seat booking window for users.

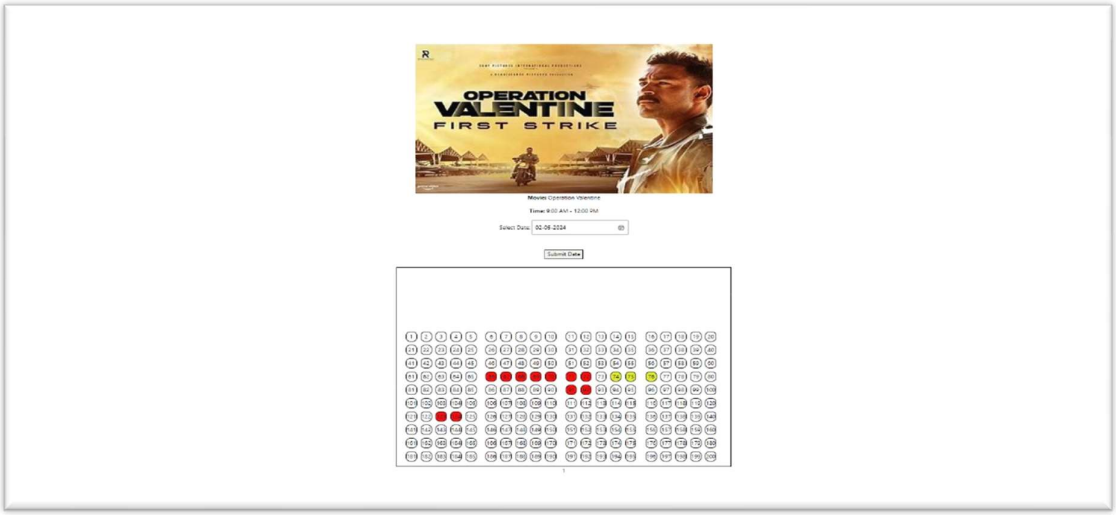

Fig 1.7 Website displaying seating arrangement and available seats

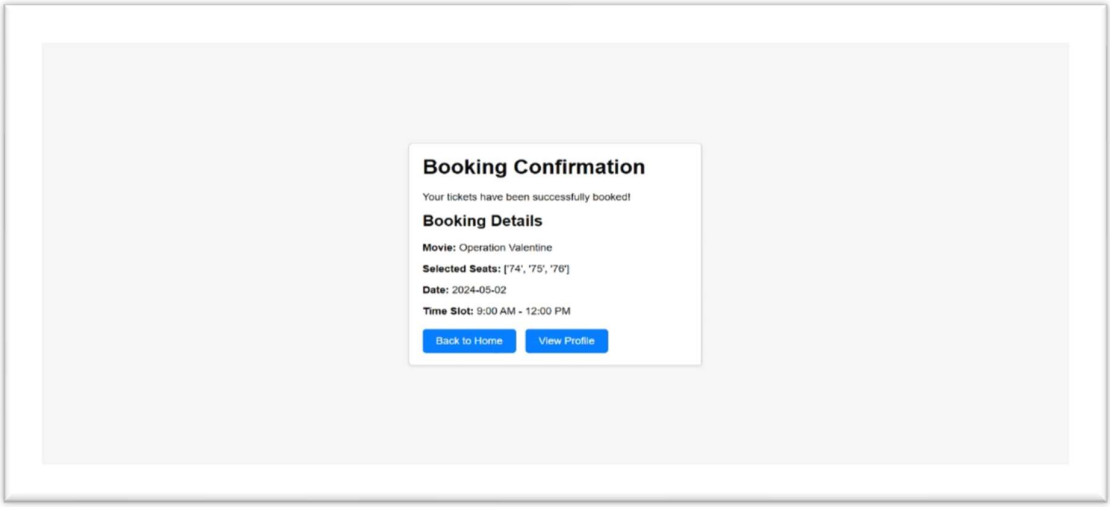

Fig 1.8 Website displaying Booking Confirmation details

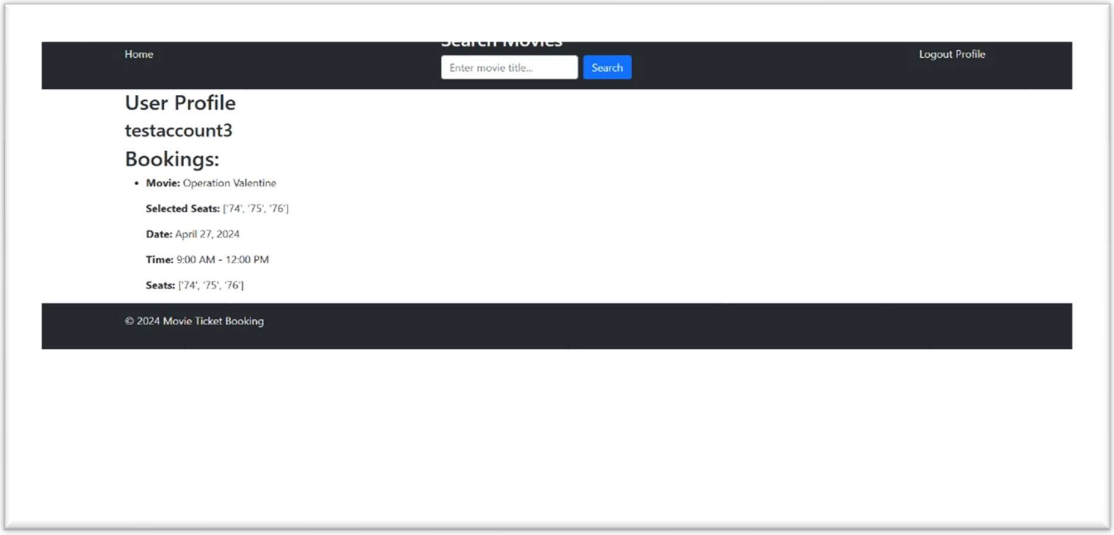

Fig 1.9 Website displaying booking details

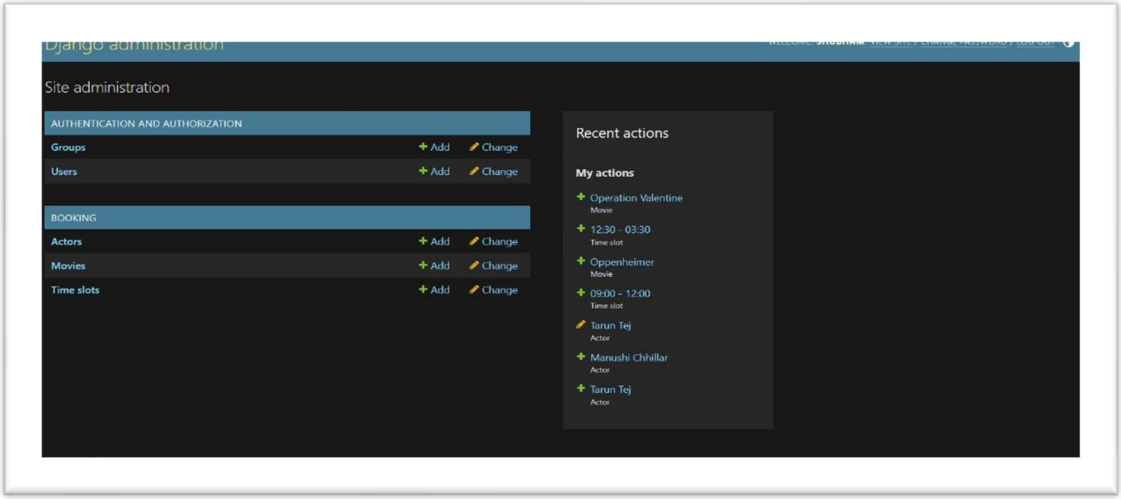

Fig 1.10 Site administration window for the Administrator.

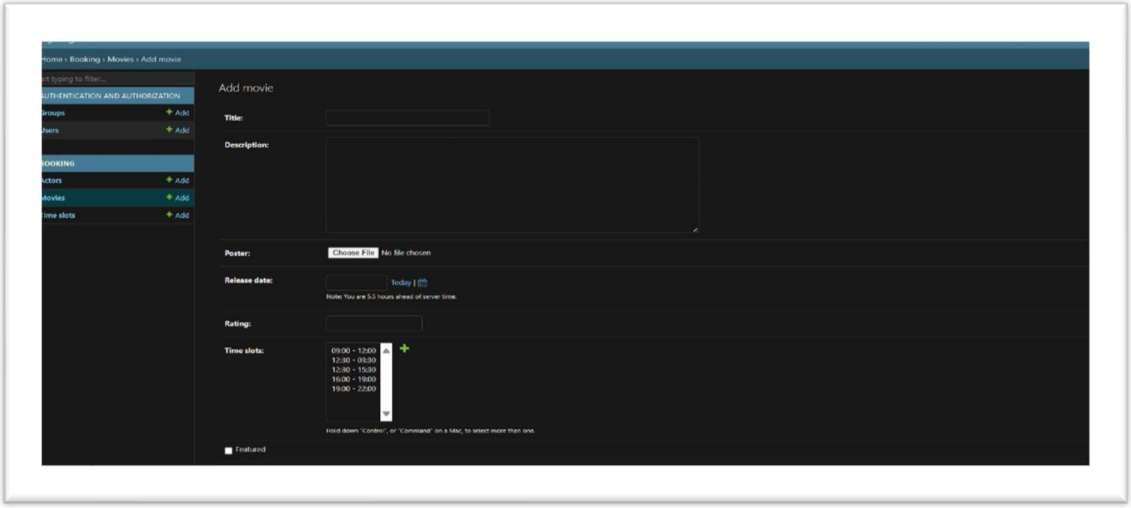

Fig 1.11 Window for administrators to add movie related information.

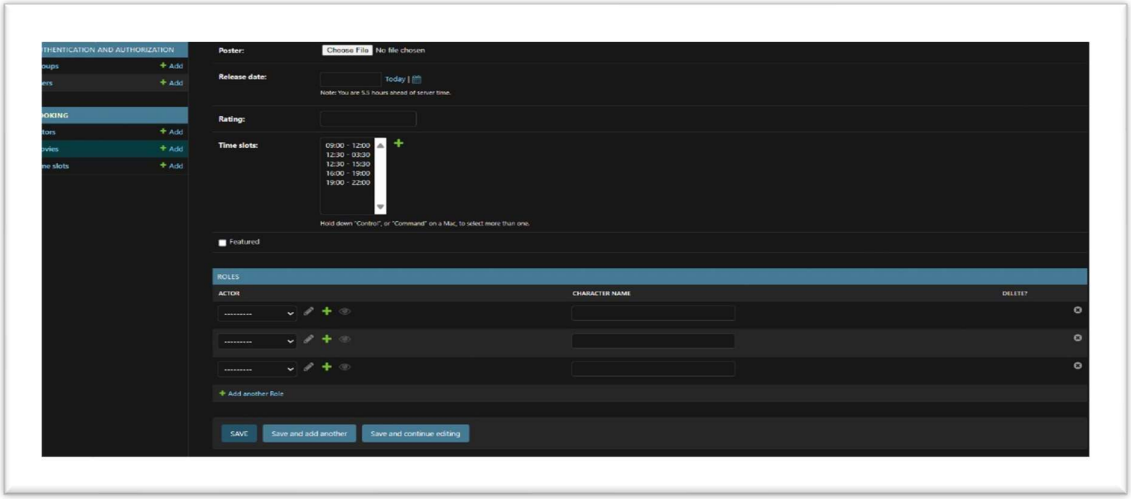

Fig 1.12 Continuation of window for administrators to add movie related information.

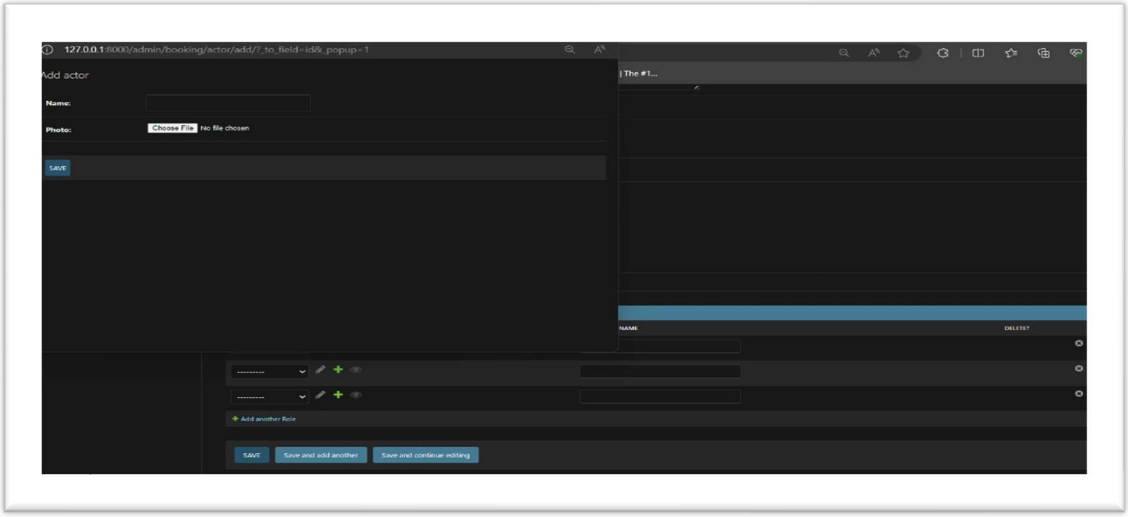

Fig 1.13 Window for administrator to add name and image of the cast.

5.4 ADVANTAGES

A web-based movie theatre management system offers several advantages for both administrators and patrons:

1. Accessibility: Patrons can access the movie theatre's offerings and book tickets from anywhere with an internet connection, eliminating the need to visit the physical box office.

2. Convenience: Patrons can browse movie schedules, check seat availability, and book tickets at their convenience, 24/7. They can also choose their preferred seats using interactive seating charts, providing a seamless booking experience.

3. Real-time Updates: The system can provide real-time updates on movie schedules, ticket availability, and any changes or cancellations, ensuring patrons stay informed about the latest developments.

4. Efficient Management: For administrators, the system streamlines theatre operations, including scheduling movies, managing ticket inventory. Automation of these tasks reduces manual effort and minimizes errors, leading to improved efficiency.

5. Improved Customer Experience: The user-friendly interface and seamless booking process enhance the overall customer experience, leading to increased satisfaction and repeat business.

6. Cost Savings: The system can reduce operational costs associated with traditional box office management, such as printing and distributing physical tickets, staffing box office counters, and manual record-keeping.

7. Security: The system can incorporate robust security measures to protect sensitive customer data, such as personal details, ensuring privacy and compliance with data protection regulations.

8. Scalability: As the theatre grows and expands its offerings, the web-based system can easily scale to accommodate increasing demand and additional features without significant infrastructure changes.

Overall, a web-based movie theatre management system offers numerous benefits for both administrators and patrons, ranging from increased accessibility and convenience to improved efficiency and customer satisfaction.

CHAPTER 6

CONCLUSION

6. CONCLUSION

The “Web-based Movie Theatre Management System Using Python” is a testament to the power of technology in enhancing the film industry. It is a sophisticated platform that not only simplifies the management of movie theatres but also enriches the movie-going experience for patrons. With its robust features, intuitive design, and secure environment, it stands as a modern solution for an age-old industry, ready to meet the demands of today’s digital world.

For patrons, it offers a convenient and immersive way to stay connected with their favourite films and theatres. For administrators, it provides a streamlined and efficient tool to manage operations and deliver exceptional service. As the curtain falls on the traditional methods of movie theatre management, our system takes centre stage, promising a future where technology and cinema coalesce to create a seamless, enjoyable, and unforgettable experience for all.

Embrace the future of movie-going with our web-based movie theatre management system, where every feature is crafted with the user in mind, ensuring that every interaction is as memorable as the films themselves.

6.1 FUTURE SCOPE

The software's capabilities are just the beginning, and there are several potential avenues for further development and improvement:

1. Integration with Payment Gateways: Implementing integration with payment gateways to facilitate online payments for ticket booking, concessions, and merchandise.

2. Advanced Analytics and Reporting: Enhance the system's reporting capabilities by implementing advanced analytics features. This could include generating insights from ticket sales data, identifying trends in movie preferences, and optimizing scheduling based on audience demand.

3. Mobile Application Development: Extend the system's reach by developing a companion mobile application for patrons to access movie schedules, book tickets, and receive notifications. A mobile app can provide additional convenience and engagement opportunities for users.

4. Dynamic Pricing and Revenue Management: Implement dynamic pricing algorithms to adjust ticket prices based on factors such as demand, time of day, and seat availability. This can optimize revenue generation and maximize profitability for the theatre.

5. Enhanced Content Management: Expand the system's content management capabilities to include multimedia content such as trailers, posters, and behind-the-scenes footage. This can enrich the user experience and provide valuable information to help patrons make informed movie choices.

6. Accessibility Features: Enhance accessibility by implementing features such as audio descriptions, closed captioning, and wheelchair-accessible seating options. This can ensure inclusivity and accommodate patrons with diverse needs.

By exploring these avenues for future development, a basic web-based movie theatre management system can evolve into a comprehensive platform that delivers value to both patrons and theatre administrators while staying ahead of industry trends and technological advancements.

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[1] “A Cinema - Online Movie Ticket Booking System” by Aarya Nanndaann Singh M N, Akash Hegde P, Abhilash R, Akash Kumar, Prof. Priyadarshini R Volume 9, Issue 2, Mar-Apr-2023.

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