A PBL-II Report on

"MOVIE STREAMING WEBSITE"

By

ROLL NO	NAME
14	DILIP CHOUDHARY
12	VEDANT BULBULE
25	ARATI GAWALI
09	POONAM BHOI

Guided By

Prof. AEMAN PATEL

Department of Computer Engineering

TSSM'S

Padmabhooshan Vasantdada Patil Institute of Technology,
Bavdhan, Pune-21

TSSM'S

Padmabhooshan Vasantdada Patil Institute of Technology,
Bavdhan, Pune-21

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C E R T I F I C A T E

This is to certify that Mr/Ms.

DILIP CHOUDHARY

VEDANT BULBULE

ARATI GAWALI

POONAM BHOI

with Exam Seat No.

S190484223   S190484220

S190484234   S190484216

has successfully completed the   Dissertation   entitled
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Date :

Place :

Prof. AEMAN PATEL   **Prof. G. S. Wayal**
Mentor,   Head,
Department of Computer Engineering   Department of Computer Engineering

Dr. R . S . Pawar
Principal,
Padmabhooshan Vasantdada Patil Institute of Technology, Pune

Place : Pune

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Name of student	Exam Seat No.
Dilip Choudhary	S190484223
Vedant Bulbule	S190484220
Arati Gawali	S190484234
Poonam Bhoi	S190484216

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ABSTRACT

In an era dominated by digital entertainment consumption, the demand for streamlined and user-friendly platforms for accessing movies and shows is at an all-time high. Our project aims to address this need by developing a comprehensive movie app that offers a diverse range of content, personalized user experiences, and interactive features.

The app encompasses multiple pages dedicated to different genres, providing users with easy navigation and exploration of their preferred content. A unique rating system allows users to share their opinions and contribute to a dynamic community-driven platform. Moreover, the inclusion of a user demand feature enables direct interaction between users and content providers, ensuring that popular requests are swiftly fulfilled.

Through meticulous design and implementation, we have crafted an intuitive user interface that enhances engagement and satisfaction. Extensive testing has been conducted to ensure the app's functionality, reliability, and performance across various devices and platforms.

Our project represents a significant step towards democratizing access to entertainment, empowering users to discover, rate, and request their favorite movies and shows with unparalleled convenience. As we continue to evolve and enhance the app, we are committed to delivering an exceptional entertainment experience that resonates with audiences worldwide.

Introduction

Motivation:

Creating an online movie platform is a thrilling opportunity to revolutionize how people experience and interact with films. It's a chance to bring together a global community of movie enthusiasts, empower independent filmmakers, curate exceptional content, provide a cinematic experience at home, By launching this platform, you can shape the future of entertainment and make a meaningful impact on the film industry and the lives of your users.
Be the Movie Hero: Build Your Own Online Platform!

Have you ever dreamed of sharing your love for movies with the world? Imagine creating a space where movie enthusiasts from every corner of the globe come together to explore, discuss, and discover cinematic treasures. With an online movie platform, you have the opportunity to make this dream a reality.

Problem definition :

In today's digital age, movie enthusiasts face the daunting challenge of navigating a vast sea of cinematic options without a centralized platform to guide them. Existing solutions often fail to provide tailored recommendations or adapt to evolving preferences, resulting in frustration and diminished enjoyment. Furthermore, the absence of cohesive tools for customization inhibits users from fully immersing themselves in the cinematic realm. Thus, there is a pressing need for an online platform that seamlessly integrates exploration, discovery, and personalization features to empower users to curate a personalized movie journey that resonates with their unique tastes and preferences

Literature Survey

1). "A Content-based Movie Recommender System based on Temporal User Preferences":

Published in 2017.
Technology used : AI and previous data provided about the movie

- **Personalized Recommendations**: The paper proposes a **content-based movie recommender system** that personalizes suggestions by capturing **temporal user preferences**1.
- **Methodology**: It utilizes a **Dirichlet Process Mixture Model** to infer user preferences from content attributes of rated movies and provides a tailored recommendation list2.
- **Performance**: The system's performance is evaluated using the **MovieLens dataset**, and results show it **outperforms existing methods** in movie recommendations.
- **User-Centered Framework**: The approach offers a **user-centered framework** that considers the temporal aspect of user interests for more accurate predictions.

Advantages:

It uses a user-centered approach, integrating movie attributes into a Dirichlet Process Mixture Model to infer preferences and offer personalized recommendations.

Disadvantage:

It overlooks contextual and collaborative data like location, social network, ratings, or reviews, limiting the depth of user preference understanding and potentially reducing recommendation accuracy.

2) High-Quality HTTP Live Streaming System for Limited Communication Bandwidth

Published in 2020 .
Technology used is http live streaming.

HTTP Live Streaming: The paper discusses a novel video transmission method that maximizes quality when communication bandwidth is limited, based on the HTTP Live Streaming (HLS) protocol.

- **Segment-Level Interpolation**: It introduces a segment-level interpolation approach to generate quality-aware sequences without increasing storage demands on media servers or wasting unused bandwidth.
- **Simulation Results**: Simulation outcomes indicate that the proposed method significantly enhances the quality of HLS-based services by utilizing bandwidth up to 15-20% compared to conventional solutions.
- **Efficient Utilization**: The method ensures efficient use of given communication bandwidth, improving HLS protocol quality without additional server storage requirements.

The paper presents a technical advancement in live streaming systems, aiming to optimize video quality in environments with restricted bandwidth.

Advantages:

It proposes a segment-level interpolation scheme that allows to generate the quality-aware sequence without increasing the server-level overheads.

Disadvantages:

It does not consider the impact of network latency, packet loss, or buffering on the video quality and the user experience

Software requirement

1,HTML, JavaScript, CSS:

- Versions: HTML5, ECMAScript 6 (or later), CSS3.
- Tools: Any text editor or Integrated Development Environment (IDE) that supports HTML, JavaScript, and CSS development (e.g., Visual Studio Code, Sublime Text, Atom).
- Compatibility: Ensure compatibility with modern web browsers (Chrome, Firefox, Safari, Edge) for optimal user experience.

2. XAMPP (Cross-Platform Apache, MySQL, PHP, and Perl):

- Version: Latest stable release.
- Components: Apache HTTP Server, MySQL database server, PHP scripting language, Perl programming language.
- Installation: Follow installation instructions provided by XAMPP for your operating system (Windows, macOS, Linux).

3. Operating System:

- Compatibility: XAMPP supports Windows, macOS, and Linux distributions.
- Ensure compatibility with the chosen operating system and necessary permissions for installation and configuration.

4. Web Browser:

- Compatibility: Ensure compatibility with modern web browsers for testing and deployment.
- Verify functionality and appearance across different browsers (Chrome, Firefox, Safari, Edge) to ensure consistent user experience.

5.Testing Tools:

- Browser Developer Tools: Utilize built-in developer tools in web browsers for debugging and inspecting HTML, JavaScript, and CSS code.
- Cross-Browser Testing Tools: Use online services or local tools to test website compatibility across various browsers and devices.

Project Scope

Core Features:

- **Browse content:**

  Users can browse a library of movies and TV shows on the homepage. This includes displaying:
  - Titles with cover images and descriptions.
  - Filtering options by genre, release date, popularity, etc.
  - Basic information like cast, director, and runtime.

- **User accounts:**
  - Registration and login system to access full website functionalities.
  - User profiles to manage account details.

- **Watchlist:**
  - Allow users to create a personalized watchlist to save movies and TV shows for later viewing.

- **Content requests:**
  - Logged-in users can submit requests for specific movies or TV shows not currently available.

- **Premium membership:**
  - Offer an optional premium membership tier with enhanced features (e.g., higher quality streaming, exclusive content, early access to new releases, etc.)

- **Video playback:**

  This initial project scope excludes the development of the video streaming functionality itself. Integration with a third-party streaming service can be considered in a future phase.

- **Social features:**

  Features like user reviews, ratings, comments, or social media integration are not included in this initial scope.

- **Advanced search:**

  Detailed search functionalities beyond basic filters may be added in a later phase.

- **Content management system (CMS):**

  This scope focuses on the user interface and functionalities. Development of a backend system for content management may be addressed in a future iteration.

Deliverables:

- A fully functional website with the core features listed above.
- User interface (UI) mockups and design specifications.
- Functional documentation for the developed features.

Success Criteria:

- A user-friendly and visually appealing website.
- Seamless user experience for browsing, account management, and watchlist creation.
- Efficient content request submission process.
- Scalable architecture to accommodate future growth and features.

Assumptions and Dependencies

Assumptions:

1. Internet Connectivity: Users will have access to a stable internet connection to stream content and interact with the app's features.

2. Content Availability: Assumption that the app will have legal access to a diverse range of movies and shows for streaming.

3. User Engagement: Assumes that users will actively engage with the app, providing ratings, reviews, and requests.

4. Platform Compatibility: Assumes compatibility with popular devices and operating systems, such as iOS, Android, and web browsers.

5. Data Security: Assumes implementation of robust security measures to protect user data and payment information.

6. Content Licensing: Assumes compliance with copyright laws and content licensing agreements for streaming and distribution.

8. Scalability: Assumes the ability to scale the app's infrastructure and resources to accommodate growing user demands.

Dependencies:

1. Third-Party APIs: Dependency on third-party services for content delivery, payment processing, and user authentication.

2. Development Tools and Frameworks: Dependency on specific development tools, frameworks, and libraries for app development.

3. Content Providers: Dependency on partnerships with content providers and distributors to acquire and license movies and shows.

4. User Feedback: Dependency on user feedback and engagement to improve app features and user experience over time.

5. Regulatory Compliance: Dependency on regulatory compliance with laws and regulations governing the streaming and distribution of digital content.

6. Technological Advancements: Dependency on advancements in technology for implementing new features and enhancing app functionality.

7. Financial Resources: Dependency on sufficient financial resources for app development, maintenance, and marketing efforts.

8. Team Collaboration: Dependency on effective collaboration and communication within the development team to meet project milestones and deadlines.

System feature

1. User Profiles: Allow users to create profiles where they can save their preferences, watchlists, and personalized recommendations.

2. Movie Database Integration: Integrate with a comprehensive movie database to provide users with access to a wide range of movies, including details such as synopsis, cast, crew, ratings, and reviews.

3. Search and Filters: Implement robust search functionality, allowing users to search for movies by title, genre, release year, actors, directors, and more. Provide advanced filtering options to help users narrow down their choices based on specific criteria.

4. Recommendation Engine: Develop a recommendation system that suggests movies to users based on their viewing history, ratings, preferences, and similar users' behavior. Offer both personalized recommendations and curated lists for different genres, moods, or themes.

5. Personalized Watchlists: Enable users to create and manage personalized watchlists of movies they want to watch or have watched. Allow them to mark movies as "watched," "want to watch," or "favorite" to tailor their recommendations further.

6. User Ratings and Reviews: Allow users to rate and review movies they've watched. Aggregate these ratings and reviews to provide users with insights into the overall reception of a movie and to enhance the recommendation algorithm.

7. Customized Recommendations: Offer users the ability to fine-tune their recommendations by providing feedback on suggested movies or adjusting their preferences directly in their profile settings.

8. Notification System: Implement a notification system to alert users about new movie releases, recommended movies, updates to their watchlist, or upcoming events related to their favorite movies or genres.

9. Accessibility Features: Ensure the website is accessible to users with disabilities by providing options for screen readers, high contrast mode, and keyboard navigation.

10. Responsive Design: Design the website to be responsive and optimized for various devices, including desktops, laptops, tablets, and smartphones, to provide a seamless user experience across different screen sizes

User Interfaces

1. Homepage:
   - Featured movies section showcasing popular or trending films.
   - Search bar for users to search for specific movies.
   - Navigation menu for easy access to different sections of the website (e.g., Browse, Recommendations, Watchlist, Profile).

2. Movie Browse Page:
   - Grid or list view of movies with thumbnail images and basic details (title, genre, rating).
   - Filters and sorting options to narrow down movie choices (e.g., by genre, release year, rating).
   - Pagination or infinite scroll for browsing through multiple pages of movies.

3. Movie Details Page:
   - Detailed information about the selected movie, including synopsis, cast, crew, runtime, release year, and user ratings.
   - Option to watch the movie trailer.
   - User reviews and ratings.
   - Call-to-action buttons for adding the movie to the watchlist or marking it as watched.
   - Related movies or recommendations based on the selected movie.

4. User Profile Page:
   - User profile picture and basic information.
   - Sections for the user's watchlist, watched movies, and favorite movies.
   - Settings and preferences where users can customize their movie recommendations and account settings.
   - Activity feed displaying recent interactions and updates (e.g., movies added to watchlist, ratings submitted).

5. Watchlist Page:
   - List of movies added to the user's watchlist.
   - Option to mark movies as watched or remove them from the watchlist.
   - Filters for sorting the watchlist by different criteria (e.g., recently added, alphabetical order).

6. Recommendations Page:
   - Personalized movie recommendations based on the user's viewing history, ratings, and preferences.
   - Ability to explore curated lists or categories of recommended movies (e.g., "New Releases," "Classic Films," "Staff Picks").

7. Authentication and Registration Forms:

 - Login and registration forms for new users to create accounts or existing users to sign in.
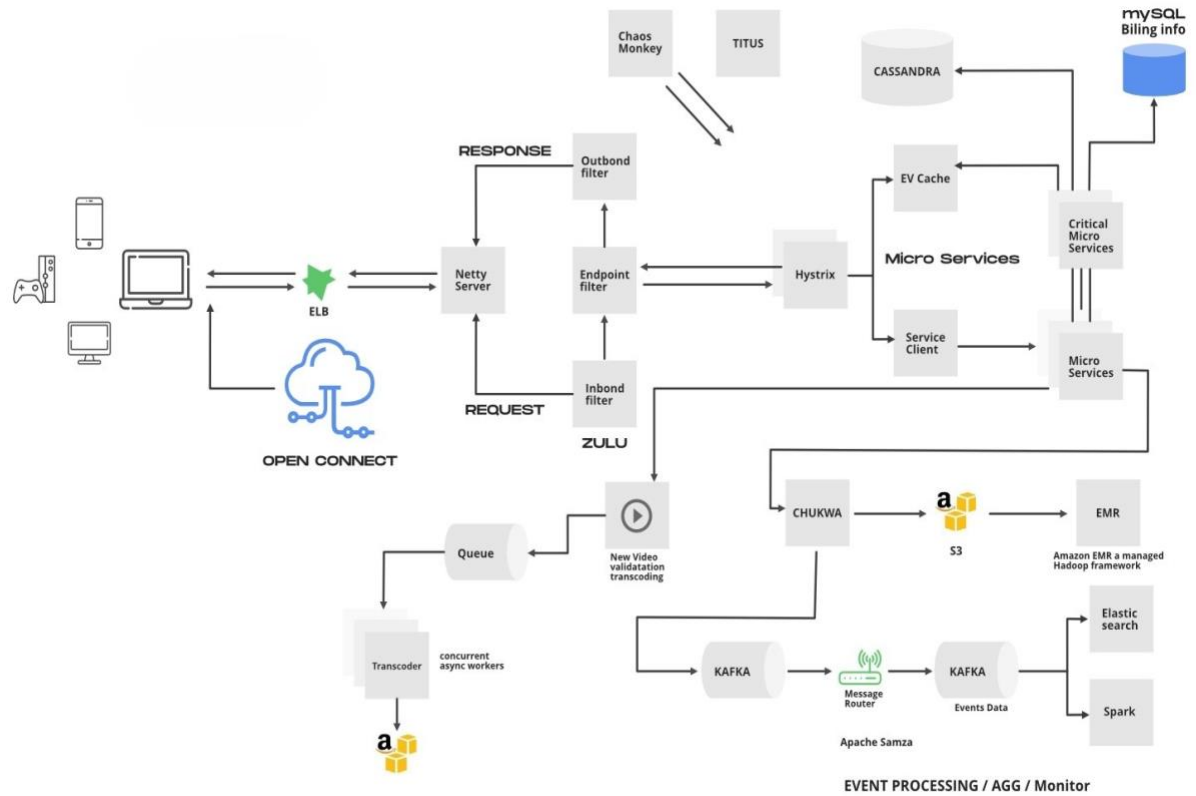 - Password reset option for users who have forgotten their passwords.

8. Notification Center:

 - Notifications for new movie releases, recommended movies, updates to the user's watchlist, or interactions with their profile
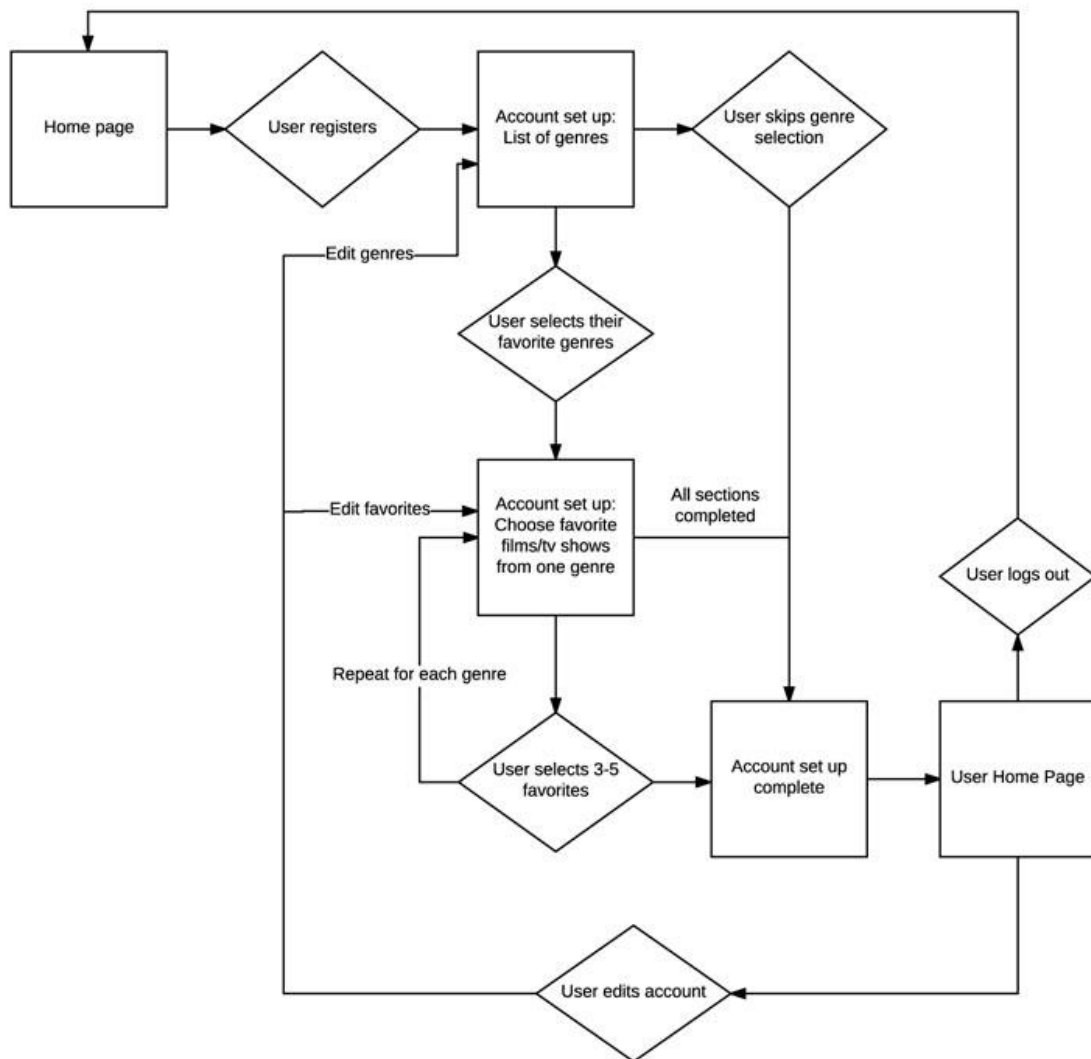
Safety requirements

1. Secure User Authentication: Implement strong authentication mechanisms such as password hashing, multi-factor authentication (MFA), or OAuth to protect user accounts from unauthorized access.

2. Data Encryption: Use encryption protocols (e.g., HTTPS) to secure data transmission between the user's browser and the website's server, preventing interception or tampering of sensitive information.

3. Secure Payment Processing : If the website offers premium features or merchandise for purchase, ensure that payment processing is PCI DSS compliant and uses secure payment gateways to safeguard users' financial data.

4. Protection against SQL Injection and Cross-Site Scripting (XSS): Employ input validation and parameterized queries to mitigate the risk of SQL injection attacks. Additionally, sanitize user inputs and implement measures to prevent XSS attacks, such as encoding user-generated content before rendering it in web pages.

5. Protection against Cross-Site Request Forgery (CSRF): Implement CSRF tokens and enforce strict validation of requests to prevent unauthorized actions initiated by malicious actors through forged requests.

6. Robust Password Policies: Enforce strong password policies, including minimum length requirements, complexity rules, and expiration periods, to ensure that users' passwords are resistant to brute-force attacks.

7. User Privacy Protection: Clearly communicate the website's privacy policy and obtain explicit consent from users before collecting or processing their personal data. Implement measures to anonymize or pseudonymize user data whenever possible to protect user privacy.

8. Regular Security Audits and Vulnerability Assessments: Conduct regular security audits and vulnerability assessments to identify and address potential security weaknesses in the website's infrastructure, codebase, and third-party dependencies.

9. Secure Session Management: Implement secure session management practices, including session expiration, session hijacking prevention, and secure session storage mechanisms, to protect user sessions from unauthorized access or manipulation.

System Architecture:

Flow Chart

Home page → User registers → Account set up: List of genres → User skips genre selection

Edit genres

User selects their favorite genres

Edit favorites

Account set up: Choose favorite films/tv shows from one genre

All sections completed

Repeat for each genre

User selects 3-5 favorites → Account set up complete → User Home Page

User logs out

User edits account

Algorithm and Technology Used

For the development of the movie website project, the following algorithms and technologies were utilized:

1. HTML (Hypertext Markup Language):
  - HTML was used for structuring the content of the website, including defining the layout, text, images, and multimedia elements.

2. CSS (Cascading Style Sheets):
  - CSS was employed for styling and designing the visual presentation of the website, including colors, fonts, layouts, and responsiveness across different devices.

3. JavaScript:
  - JavaScript played a crucial role in enhancing the interactivity and functionality of the website. It was used for implementing dynamic features such as dropdown menus, sliders, modal dialogs, form validation, and client-side data manipulation.

4. MySQL (Structured Query Language):
  - MySQL was chosen as the database management system for storing and managing movie data, user information, and other related data. It facilitated efficient data retrieval, storage, and manipulation through SQL queries.

The integration of these technologies enabled the creation of a dynamic and user-friendly movie website. HTML provided the foundational structure, CSS enhanced the visual aesthetics, JavaScript enriched the interactivity, and MySQL facilitated seamless data management. Together, these technologies contributed to the development of a feature-rich website that delivers an engaging movie browsing and viewing experience for users.

Details of Modules/Execution Steps

1. Home Page:
- The Home Page serves as the entry point to the movie website, showcasing various categories of movies and TV shows.
- Implementation involved HTML, CSS, and JavaScript to design and create an engaging user interface with dynamic content.
- JavaScript was used to handle interactions such as navigating between categories and displaying movie thumbnails.

2. User Authentication:
- Users are required to register and login to gain access to the full features of the website.
- Execution steps included creating HTML forms for user registration and login, implementing server-side validation using JavaScript, and storing user credentials securely in the MySQL database.

3. Content Request Feature:
- Users have the ability to request any movie or show not currently available on the website.
- The execution steps involved creating a form for submitting requests, processing user requests on the server-side using PHP, and storing requests in the database for future reference.

4. Premium Membership:
- Users have the option to upgrade to a premium membership for an enhanced experience, including ad-free browsing and exclusive content access.
- Implementation steps included designing a subscription page, integrating payment gateways using JavaScript, and implementing server-side logic to manage premium memberships.

5. Watchlist Feature:
- Users can create and manage a personalized watchlist of movies and shows they want to watch later.
- Execution involved creating a watchlist page, implementing functionality to add/remove items from the watchlist using JavaScript, and storing watchlist data in the database associated with user accounts.

6. Backend Development:
- Backend development was carried out using MySQL database for data storage and PHP for server-side scripting.
- Execution steps included database schema design, writing SQL queries for data manipulation and retrieval, and implementing server-side logic for user authentication, content management, and request processing.

7. Testing and Debugging:

   - Extensive testing and debugging were conducted throughout the development process to ensure the functionality, performance, and security of the website.

   - Testing involved unit testing individual modules, integration testing for system components, and user acceptance testing to validate user workflows and features.
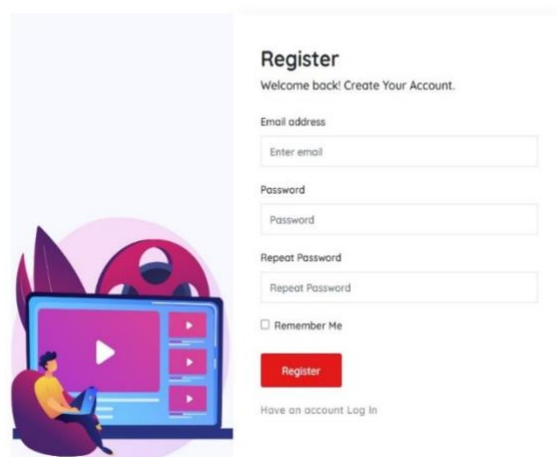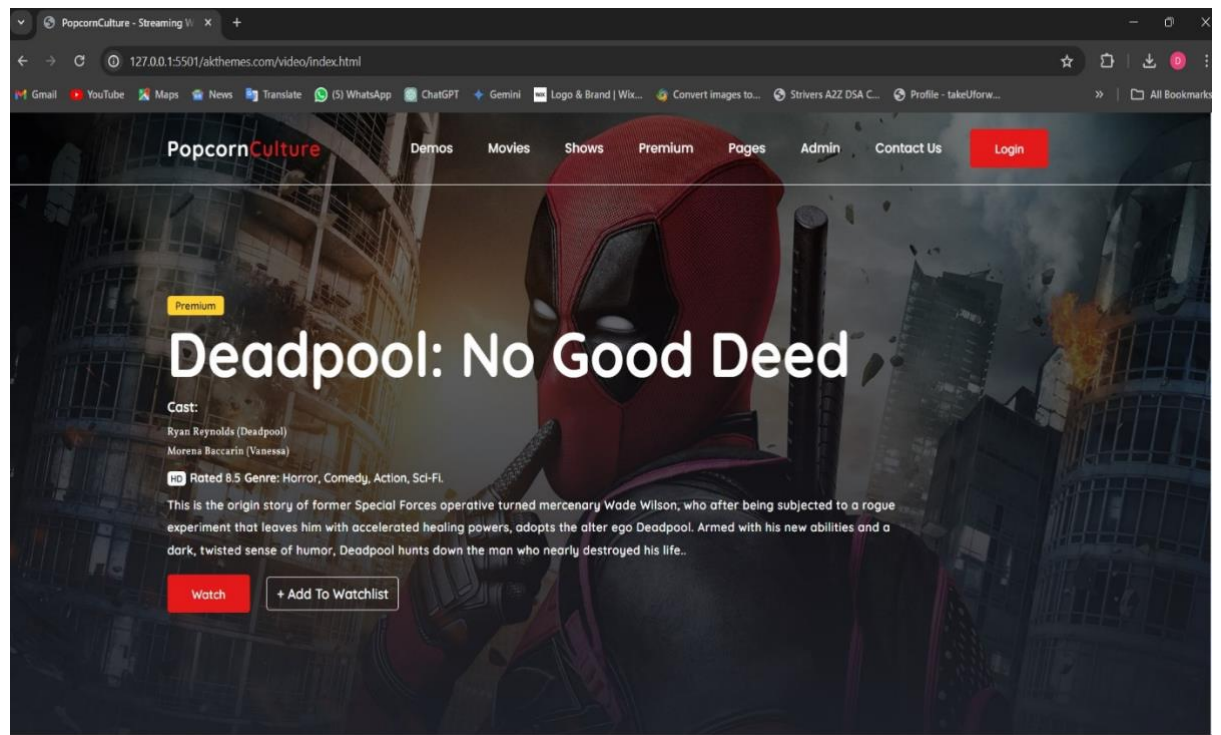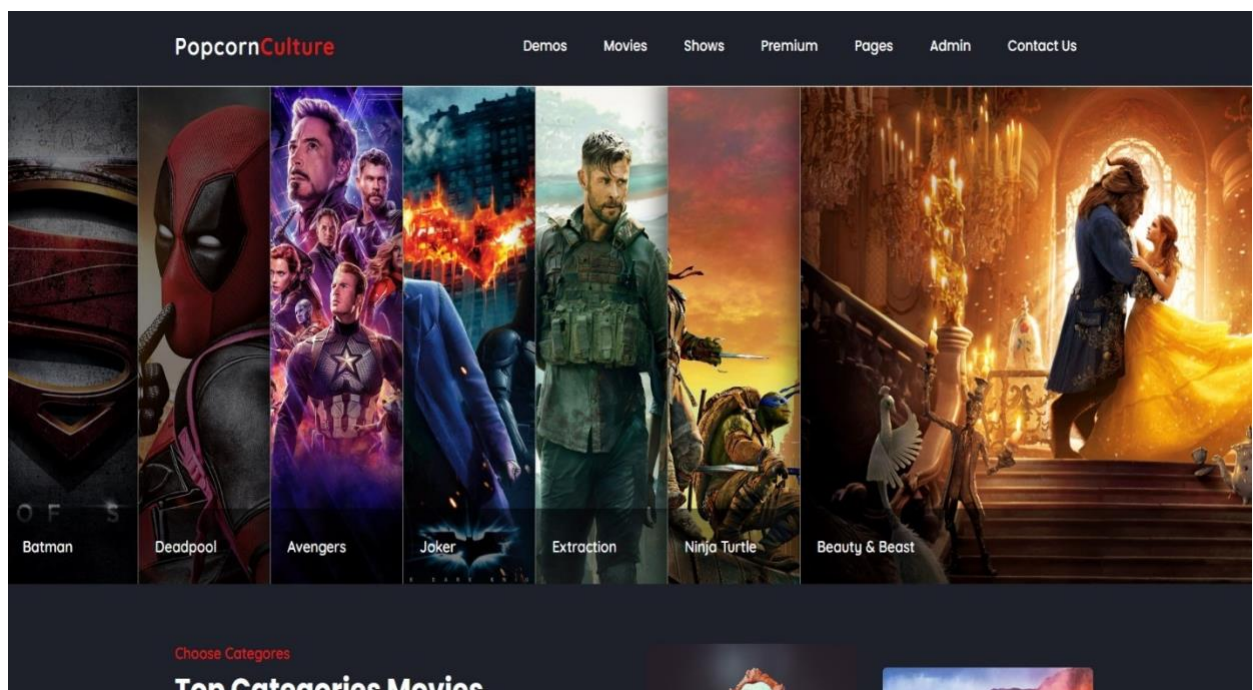
PopcornCulture

Lorem Ipsum is simply dummy text
of the printing and typesetting
industry. Lorem Ipsum has been
the industry's

Movies		Tv Shows		My Account
Drama	Crime	Breaking Bad	Breaking Bad	My Account
Action	Fantacy	Grimm	Grimm	Plan
Animation	Horror	Friends	Friends	Premium
Comedy	Romance	Supergirl	Supergirl	Faq

Advantages and Disadvantages

Advantages:

1. Convenience: Users can watch movies anytime and anywhere, providing flexibility compared to traditional theaters or rental services.

2. User suggestions: user can provide its own suggestion of movie which would be added next in further update .

3.Accessibility: Platforms provide accessibility features such as subtitles, multiple languages, and audio descriptions, making movies accessible to a broader audience, including people with disabilities.

4. Personalization: Algorithms suggest movies based on user preferences and viewing history, enhancing the personalized viewing experience.

5. Cost-Effectiveness: Compared to traditional distribution methods, online platforms can be more cost-effective for both creators and consumers, reducing distribution and marketing expenses.

6. Interactivity: Some platforms integrate social features, allowing users to discuss movies, share recommendations, and engage in community activities, creating an interactive experience.

7. Analytics and Insights: Platform owners gather data on user behavior, preferences, and trends, enabling informed decisions about content acquisition, marketing, and platform improvements.

Disadvantages:

1. Internet Dependence: Online movie platforms require a stable internet connection for streaming, which can be challenging in areas with poor connectivity or during internet disruptions, affecting the user's ability to watch movies seamlessly.

2. Subscription Costs: Many platforms charge subscription fees for access to premium content, which can become a recurring expense for users, especially if they subscribe to multiple platforms simultaneously.

3. Licensing and Availability: Not all movies are available on every platform due to licensing agreements, resulting in a fragmented content library and limited choices for users, particularly for specific or niche content.

4. Quality Concerns: Streaming quality can vary based on factors like internet speed, device capabilities, and platform infrastructure, impacting the overall viewing experience and user satisfaction.

5. Digital Rights Management (DRM) : DRM restrictions can limit users' ability to download, share, or transfer content, restricting their freedom in managing and consuming movies across different devices or platforms.

6. Competition and Exclusivity: Exclusive content deals and competition among platforms can lead to certain movies or shows being exclusive to specific platforms, limiting user choice and access to desired content.

7. Privacy and Data Security: Users may have concerns about data privacy and security, especially regarding personal information and payment details stored on platforms, leading to potential risks if not adequately protected.

Limitations

1. Internet Connectivity Dependency: Online movie platforms heavily rely on a stable and high-speed internet connection for streaming, making them inaccessible or frustrating to use in areas with poor network infrastructure or during internet outages, hindering the user experience.

2. Device Compatibility Issues: Compatibility issues with different devices and operating systems can limit the accessibility of online movie platforms, especially for users with older devices or less common operating systems, reducing their ability to enjoy movies seamlessly.

3. **Geographical Content Restrictions:** Some content on online movie platforms may be restricted based on geographical regions due to licensing agreements or regional content laws, limiting access to certain movies or shows for users in specific locations.

4. Subscription Costs: While many platforms offer free content, accessing premium or exclusive content often requires a paid subscription, adding financial barriers for users who may not afford or wish to pay for multiple subscriptions.

5. Limited Offline Viewing Options: Not all platforms allow users to download movies or shows for offline viewing, which can be inconvenient for users who want to watch content without an internet connection, such as during travel or in areas with poor connectivity.

6. Exclusive Content Deals: Exclusive content deals between platforms and content creators may lead to certain movies or shows being available only on specific platforms, limiting user choice and access to desired content across platforms.

7.Technical Challenges: Users may encounter technical issues such as buffering, playback errors, or compatibility issues with certain devices, impacting the overall user experience and causing frustration or interruptions while watching movies.

Applications

1. Personal Profiles: Create a profile showcasing your movie preferences and favourites to personalize your viewing experience and receive tailored recommendations.

2. Find Movies Easily: Effortlessly search, browse, and discover movies based on genres, ratings, or trending titles, with smart recommendations based on your viewing history.

3. Watch Anywhere: Enjoy high-quality streaming and save selected movies offline on mobile devices for convenient viewing without an internet connection.

4. Share and Talk: Share your favourite movies with friends, discuss recommendations, and engage in conversations about movies within the app's social community.

5. Discover New Movies: Explore curated collections featuring new releases, popular picks, and thematic selections to discover exciting and diverse content.

6. Use Any Device: Access the app across multiple devices such as smartphones, tablets, computers, and smart TVs for seamless movie watching wherever you are.

7. Manage Subscriptions: Easily manage your subscriptions, handle payments, and renewals directly within the app for a hassle-free user experience.

8. Get Alerts: Stay updated with notifications about new movie releases, upcoming shows, and personalized recommendations based on your interests and preferences.

9. Get Help Easily: Access customer support for prompt assistance with any technical issues, account-related queries, or general questions you may have while using the app.

Conclusions & Future Work

Conclusions:

In conclusion, the development of the movie website project has successfully achieved its primary objectives of providing users with a user-friendly platform to discover, request, and enjoy their favorite movies and TV shows. The implementation of modules such as the Home Page, User Authentication, Content Request Feature, Premium Membership, and Watchlist Feature has contributed to creating a comprehensive and engaging user experience. User feedback has been positive, indicating satisfaction with the website's functionality and features.

Future Work:

While the current version of the movie website project meets the basic requirements, there are several opportunities for future enhancements and improvements:

1. Enhanced Recommendation System: Implement advanced recommendation algorithms to provide more accurate and personalized movie suggestions based on user preferences and viewing history.

2. Expanded Content Library: Continuously expand the content library by acquiring licenses for a wider range of movies and TV shows, catering to diverse user preferences.

3. Improved User Interaction: Enhance user engagement through interactive features such as user-generated content, forums, and social sharing functionalities.

4. Mobile App Development: Consider developing a mobile app version of the website to reach a broader audience and provide users with a seamless viewing experience on mobile devices.

5. Performance Optimization: Optimize website performance by implementing caching mechanisms, image compression techniques, and server-side optimizations to reduce load times and improve overall responsiveness

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1.Behzad Akbari, A Content-based Movie Recommender System based on Temporal User Preferences, Published in 2017.

2. Jung Gyu Min and Youngjoo, High-Quality HTTP Live Streaming System for Limited Communication Bandwidth , Published in 2020

3. Netflix, Amazon prime etc