

# Full Stack React Web Development

*An Industrial Training Project Report Submitted*

*to*

**MANIPAL ACADEMY OF HIGHER EDUCATION**

*For Partial Fulfillment of the Requirement for the*

*Award of the Degree*

*Of*

**Bachelor of Technology**

*in*

**Computer and Communication Engineering**

*by*

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*Under the guidance of*

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Professor & Head

Department of Information & Communication Technology



**MANIPAL INSTITUTE OF TECHNOLOGY**

**MANIPAL**

*A Constituent Unit of MAHE, Manipal*

**November 2023**

## Company issued completion Certificate

**Thaniya**  
Technologies

**INTERNSHIP COMPLETION  
CERTIFICATE**

Reference No: TT/MIT/2023/01

Date: 10/08/2023

Thaniya Technologies certifies that **Mr Adithya Rao Kalthur** (Reg. No: 200953015) from Department of Computer and Communication Engineering, Manipal Institute of Technology had undertaken and completed the Internship Program on **Full stack Development** from **19 June 2023** to **17 July 2023**.

**Mr Adithya Rao Kalthur** displayed professional traits during his internship period and managed to complete all assigned tasks as requested. He was hardworking, dedicated, and committed. It was a pleasure having him with us in this short period.

We wish him every success in life.

Sincerely,

  
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## **Acknowledgement**

Without the assistance, direction, and encouragement from numerous individuals, my internship would not have been successful. Firstly, I want to sincerely thank Mr. Shailesh Shetty S for recommending me for this job.

I would like to express my gratitude to Dr. (Cdr) Anil Rana, the director of the Manipal Institute of Technology, for his support in creating a stimulating learning environment and providing the department with the required resources.

I would like to express my gratitude to Dr. Smitha N Pai, Head of the Department of Information & Communication Technology, for giving students opportunities to enhance their perspectives through experiencing real-world difficulties in industry. I am further grateful to Mr. Akshay K C and Dr. Diana Olivia for their assistance.

I sincerely appreciate Mr. Deveesh Shetty's advice and support throughout this internship. I also like to thank the representatives and other employees of Thaniya Technologies for their assistance during my internship.

Finally, I want to express my gratitude to my parents, well-wishers, and all my friends who have supported me and helped me when I have needed it.

Adithya Rao Kalathur

200953015

## **Abstract**

Thaniya Technologies is an Information technology and service based company based in Mangalore. The aim of the company is to provide quality service and solutions in the field of information technology. Their mission is to train future task force with quality internship and training. Providing IT solution to various industries challenges and get recognized by government and other quality assurance bodies. The first week focused on providing a smooth onboarding experience for the interns, ensuring they have the necessary tools and resources to start their journey in web development. The utilization of online tutorials and code reviews enabled collaborative learning despite the virtual setting. Week 2 focused on strengthening interns' front-end development skills using React. The combination of online tutorials, individual projects, and team collaboration allowed interns to gain practical experience in building responsive web applications. Week 3 completed the frontend of the project and started working database connectivity and the backend development. Also watched online tutorial lectures on API, Express.js and PSQl. Week4 completed the backend part of the project and also marked the completion of the full-stack application, incorporating user authentication, extensive testing, optimization, and documentation.

# **1. Introduction**

## **1.1 About the company**

Thaniya Technologies is an Information technology and service based company based in Mangalore. The aim of the company is to provide quality service and solutions in the field of information technology. Their mission is to train future task force with quality internship and training. Providing IT solution to various industries challenges and get recognized by government and other quality assurance bodies.

## **1.2 Introduction to full stack React web development**

Full-stack web development with React typically involves building both the front-end and back-end components of a web application using React for the front-end and a back-end technology stack for server-side logic, data storage, and APIs. Here's an overview of what's involved in full-stack web development with React:

### **1.2.1 Front-End Development with React:**

**1.UI/UX Design:** Start by designing the user interface and user experience for your web application. You can use design tools like Adobe XD, Figma, or Sketch to create mockups and prototypes.

### **2.Setting Up the Development Environment:**

**a)Install Node.js and npm (Node Package Manager) on your computer.**

**b)Create a new React application using a tool like "create-react-app" to set up your project structure.**

**3.Component Development:** Create React components for different parts of your application, such as navigation bars, forms, and content sections. These components will define the structure and behavior of your UI.

**4.State Management:** Use React's built-in state management or external libraries like Redux or Mobx to manage the state of your application. State management is essential for handling user interactions and data flow within your app.

**5.UI Routing:** Implement client-side routing using libraries like React Router to manage navigation within your application.

**6.API Integration:** Communicate with back-end APIs to fetch and update data. You can use the "fetch" API or libraries like Axios to make HTTP requests.

**7.Styling:** Style your components using CSS, SASS, or a CSS-in-JS solution like styled-components to create visually appealing user interfaces.

**8.Testing:** Write unit tests for your components and use testing libraries like Jest and React Testing Library to ensure your code works as expected.

**9.Optimization and Performance:** Optimize your application for performance by code splitting, lazy loading, and other techniques. Also, ensure your application is responsive and accessible.

## **1.2.2 Back-End Development:**

**1.Choose a Back-End Stack:** Select a back-end technology stack to handle server-side logic, data storage, and API development. Popular options include Node.js with Express, Python with Django, Ruby on Rails, Java with Spring, and many more.

**2.Server Setup:** Set up your server environment, including installing necessary dependencies and configuring your server.

**3.API Development:** Create API endpoints for your front-end to interact with. Define routes, controllers, and models to manage data and respond to client requests.

**4.Database Integration:** Connect your back end to a database, whether it's a relational database like MySQL or PostgreSQL or a NoSQL database like MongoDB. Design your database schema and perform CRUD operations.

**5.Authentication and Authorization:** Implement user authentication and authorization mechanisms to secure your API endpoints. You can use libraries like Passport.js for authentication and roles-based access control for authorization.

**6.Testing:** Write tests for your back-end code to ensure that your API functions correctly and handles different scenarios.

**7.Middleware and Middleware:** Use middleware for tasks like request logging, input validation, and error handling.

**8.Deployment:** Deploy your back-end application to a server or cloud platform like AWS, Azure, Heroku, or DigitalOcean. Ensure that your application is secure and scalable.

### **1.2.3 Integration:**

**1.**Integrate the front-end and back-end components by making API requests from the React application to the back end.

**2.**Handle data validation, error handling, and user authentication within the React application.

**3.**Implement features like user registration, login, and user sessions as needed.

**4.**Continuously test and debug your application to ensure that it works seamlessly as a full-stack web application.

Full-stack React web development is a broad and complex field, and you may encounter various challenges along the way. It's important to stay up-to-date with best practices, security considerations, and emerging technologies. Additionally, using version control (e.g., Git) and following agile development practices can help streamline your development process and collaborate effectively with a team if applicable.

## **1.3 Introduction to PostgreSQL**

PostgreSQL, often referred to as "Postgres," is a powerful and open-source relational database management system (RDBMS) known for its robust features, extensibility, and strong emphasis on standards compliance. It was initially developed at the University of California, Berkeley, in the 1980s and has since grown to become one of the most popular and respected database systems in the world.

### **1.3.1 Key characteristics and aspects of PostgreSQL include:**



**1.Open Source:** PostgreSQL is released under the PostgreSQL License, a permissive open-source license, which allows anyone to use, modify, and distribute it freely. This makes it an attractive choice for businesses and developers seeking cost-effective solutions.

**2.Relational Database:** PostgreSQL is a relational database management system, which means it organizes and stores data in structured tables with rows and columns, providing a reliable and efficient way to manage structured data.

**3.ACID Compliance:** It fully supports ACID (Atomicity, Consistency, Isolation, Durability) properties, ensuring data consistency and reliability even in the face of system failures.

**4.Extensibility:** PostgreSQL is highly extensible, allowing developers to create custom data types, operators, and functions. This extensibility has led to the development of numerous extensions and add-ons that enhance its capabilities.

**5.Support for SQL:** PostgreSQL adheres to SQL (Structured Query Language) standards, making it easy to work with if you're familiar with SQL. It also supports advanced SQL features, such as window functions, common table expressions, and JSON handling.

**6.Data Types:** PostgreSQL offers a rich set of built-in data types, including traditional types like integers and strings, as well as more advanced types like arrays, hstore (key-value pairs), and support for spatial data through PostGIS.

**7.Scalability:** It can handle large amounts of data and is suitable for both small-scale applications and enterprise-level systems. Features like table partitioning, streaming replication, and logical replication support scalability.

**8. Concurrency Control:** PostgreSQL utilizes a multi-version concurrency control (MVCC) system, allowing multiple users to access and modify data concurrently without locking issues.

PostgreSQL is an excellent choice for full-stack React web development, as it serves as a robust and scalable backend database system that seamlessly complements React's front-end capabilities. Here's how PostgreSQL can be integrated into a full-stack React web development project:

**1. Data Storage and Management:** PostgreSQL provides a reliable and efficient way to store and manage data for your web application. You can create database tables to store user information, content, application settings, and any other structured data required for your application.

**2. API Development:** In full-stack development, you'll typically create a back-end API to interact with your database and serve data to your React front end. You can use a server-side framework like Node.js (with Express), Ruby on Rails, Django (Python), or others to build this API. The API will handle data retrieval, storage, and updates in the PostgreSQL database.

**3. Data Retrieval:** React components can make HTTP requests to your back-end API to fetch data from the PostgreSQL database. You can use libraries like Axios or the built-in "fetch" API for this purpose. This data can then be rendered in your React components to display content on the front end.

**4. Authentication and Authorization:** PostgreSQL can be used to store user credentials and other user-related data, making it a core component of user authentication and authorization. You can manage user access rights and permissions within your application, ensuring data security.

**5. Real-Time Features:** If your application requires real-time data updates or messaging features, PostgreSQL can be combined with technologies like WebSockets to enable real-time communication between the server and React front end.

**6. Full-Text Search:** PostgreSQL offers powerful full-text search capabilities, making it suitable for implementing advanced search functionality in your application.

**7. Performance Optimization:** PostgreSQL's indexing and query optimization features can help enhance the performance of your application. By creating appropriate indexes, you can speed up data retrieval and make your application more responsive.

**8. Data Modeling:** PostgreSQL allows you to define complex data models and relationships between tables. You can create tables with foreign keys, many-to-many relationships, and other database design elements to represent your application's data structure accurately.

**9. Security:** PostgreSQL provides robust security features, including role-based access control, SSL encryption, and the ability to define fine-grained access permissions. This ensures data security and confidentiality.

**10. Scalability:** PostgreSQL can scale with your application's growth. You can implement table partitioning, replication, and clustering to handle increased workloads and ensure high availability.

In summary, PostgreSQL is a powerful and versatile relational database system that complements React in full-stack web development. It serves as a solid backend for your React front end, enabling you to store, manage, and retrieve data efficiently. When combined with the appropriate back-end framework and integrated into your

application's architecture, PostgreSQL plays a crucial role in building feature-rich and high-performing web applications.

## **1.4 Role as an intern**

As a Full Stack React web development intern, I helped design the database using PostgreSQL, create interactive user interfaces with React, write efficient server-side code using Node.js and Express.js, and implement cutting-edge technologies. This internship deepened my understanding of Full Stack React web development and provided me with valuable hands-on experience.

## **2. Literature review**

The landscape of movie recommendation and review systems has evolved significantly in response to the growing demand for personalized content discovery and user-generated feedback. This section provides an extensive literature review, delving into various aspects of movie recommendation algorithms, user review systems, and the technologies employed in full-stack web development.

### **2.1 Movie Recommendation Systems**

Movie recommendation systems play a pivotal role in modern content delivery platforms, ranging from popular streaming services to e-commerce websites. These systems are designed to curate movie recommendations tailored to individual users, thus enhancing user engagement and satisfaction. Notably, two principal approaches have dominated the field of recommendation systems:

**1. Collaborative Filtering:** Collaborative filtering algorithms are at the core of recommendation systems. User-based collaborative filtering leverages the idea that users who have shown similar preferences in the past will continue to have similar

tastes. In contrast, item-based collaborative filtering suggests movies based on the similarity between items, such as recommending movies that users who liked the same film also enjoyed.

**2. Content-Based Filtering:** Content-based filtering, a complementary approach, focuses on analyzing the content and attributes of movies to make recommendations. This approach considers factors like genres, directors, actors, and even plot keywords to suggest movies with similar characteristics to those preferred by a user.

Furthermore, hybrid recommendation systems that combine collaborative and content-based filtering have gained popularity for their ability to provide more accurate and diversified recommendations. These systems employ machine learning algorithms to analyze user behavior and preferences, continuously improving the quality of recommendations.

## 2.2 User Review Systems

User-generated content in the form of movie reviews and ratings has become integral to movie-related websites and applications. These review systems serve a myriad of purposes, from aiding users in making informed viewing choices to providing valuable feedback to movie creators and studios. User review systems often incorporate the following features:

**1. User Authentication and Authorization:** Robust user authentication mechanisms are paramount to ensuring that reviews and ratings are contributed by legitimate users. Role-based authorization is frequently employed to regulate user access to specific features and functionalities.

**2. Rating and Commenting:** Users are typically offered the ability to rate movies on a scale and provide written comments or reviews. These features empower users to express their opinions and share their viewing experiences.

**3. Integration with Recommendation Systems:** In many instances, platforms combine movie recommendation systems with user review functionalities. This fusion ensures that users receive personalized recommendations based on their own ratings and reviews, creating a holistic user experience.

Moreover, these user review systems contribute significantly to user engagement and interaction. They foster a sense of community and create a feedback loop that benefits both users and content providers.

## 2.3 Technologies in Full-Stack Web Development

Full-stack web development encompasses both front-end and back-end development, requiring the selection of appropriate technologies for each aspect of the project. Key technologies in use for your project include:

**1. React:** React, a prominent JavaScript library for constructing user interfaces, has become the de facto choice for front-end development. Its component-based architecture, efficient virtual DOM, and extensive community support make it an ideal platform for creating interactive and responsive user interfaces.

**2. PostgreSQL:** PostgreSQL, an open-source and feature-rich relational database management system, finds widespread use in back-end development. Its support for SQL standards, ACID compliance, and extensibility make it particularly suitable for handling structured data, such as movie information and user reviews.

The synthesis of literature underscores the critical role of personalized recommendation systems in enhancing user experiences and engagement within movie-related applications. User review systems, on the other hand, contribute significantly to user interaction and feedback collection. The choice of React for front-end development and PostgreSQL for back-end development aligns with industry best practices and standards.

By combining insights from the literature, the "Movie Recommendation and Review System" project aims to deliver a comprehensive platform that not only offers personalized movie recommendations but also empowers users to contribute their insights through reviews and ratings. The seamless integration of front-end and back-end technologies underscores the commitment to an optimal user experience and underscores the project's relevance within the context of contemporary movie-related applications.

### **3. Methodology**

The methodology of the project can be divided into two main parts: Front-end development using React and Back-end development using PostgreSQL.

#### **3.1 Front-end Development using React**

**1.Requirement Analysis:** The first step involved understanding the requirements of the project. This included identifying the key features that the movie recommendation and review system should have.

**2.Designing the User Interface:** The next step was to design the user interface of the application. This was done using React, a popular JavaScript library for building user interfaces. The component-based architecture of React was leveraged to promote reusability and maintainability.

**3.Implementation:** The user interface was then implemented using React. This involved creating various components for different parts of the application, such as the movie list, movie details, user reviews, and recommendation system.

## 3.2 Back-end Development using PostgreSQL

**1.Database Design:** The first step in back-end development was to design the database. This involved identifying the necessary tables and relationships for storing movie details, user reviews, and recommendation data.

**2.Database Implementation:** The database was then implemented using PostgreSQL, an open-source object-relational database system. This involved creating the tables and relationships as per the design and populating them with initial data.

**3.API Development:** The next step was to develop APIs for the front-end to interact with the database. This involved creating endpoints for fetching movie details, posting user reviews, and getting movie recommendations.

**4.Integration:** The final step was to integrate the front-end and back-end. This involved connecting the React application with the APIs developed in the previous step.

The project followed an iterative development process, where each feature was developed, tested, and integrated one at a time. This allowed for early feedback and adjustments as necessary.

## 4. Implementation Details:

The implementation phase of the "Movie Recommendation and Review System" project involved the actual development of the application, encompassing both the front-end and back-end components. This section provides a detailed account of the technologies used, the architecture, database design, user authentication, recommendation algorithm, and integration of features.



## **4.1 Front-End Development**

### **4.1.1 Technologies**

The front-end of the application was developed using React, a popular JavaScript library for building interactive user interfaces. The choice of React was based on its component-based architecture, efficiency through the virtual DOM, and a large and active developer community. The front-end was styled using a combination of CSS and the Material-UI library for creating a visually appealing and responsive design.

### **4.1.2 Component-Based Architecture**

The project's front-end follows a modular, component-based architecture. Components were created for various aspects of the user interface, including user registration, movie search, review submission, and recommendation display. This architecture promotes code reusability and maintainability.

### **4.1.3 State Management**

React's state management capabilities were harnessed to handle user interactions and data flow. Redux was used to manage the application's state, ensuring a predictable and efficient way to handle and share data between components.

## **4.2 Back-End Development**

### **4.2.1 Technologies**

The back end of the system was built using Node.js and Express, providing a robust and scalable server environment. PostgreSQL was selected as the database system to store structured data, such as movie information, user reviews, and recommendations. The choice of PostgreSQL was driven by its adherence to SQL standards, ACID compliance, and extensibility.

### **4.2.2 Database Design**

A well-defined database schema was created, specifying tables for movies, users, reviews, and user preferences. The schema allowed for maintaining data consistency and relationships. Entity-Relationship Diagrams (ERDs) were used to visualize and document the database structure.

### **4.2.3 API Development**

The back end exposed a set of RESTful APIs to interact with the database. These APIs enabled functionalities such as user registration, authentication, movie data retrieval, review submission, and recommendation generation. Careful consideration was given to data validation and error handling to ensure the security and reliability of the system.

### **4.2.4 User Authentication and Authorization**

User authentication was implemented to secure user accounts and ensure that only authenticated users could access specific features. Role-based authorization was employed to manage user access rights and permissions.

## **4.3 Recommendation Algorithm**

A recommendation algorithm was implemented to provide personalized movie recommendations to users. The algorithm used a collaborative filtering approach, considering user preferences and behavior to generate recommendations. User ratings and movie metadata, such as genres and directors, were used to calculate movie similarity scores and provide relevant suggestions.

## **4.4 Integration of Features**

The project seamlessly integrated front-end and back-end components. The front end made asynchronous HTTP requests to the back end's API endpoints, enabling functionalities such as user registration, movie searches, review submission, and personalized recommendations. Data validation, error handling, and secure communication practices were implemented to ensure a smooth and secure interaction between the front end and back end.

In conclusion, the implementation of the "Movie Recommendation and Review System" project was executed meticulously, taking advantage of the chosen technologies and best practices in full-stack web development. The result is a feature-rich application that offers personalized movie recommendations, user reviews, and a seamless user experience.

## **5. Results & discussion**

### **5.1 Results**

#### **5.1.1 User Engagement and Adoption**

The "Movie Recommendation and Review System" project demonstrated significant user engagement and adoption throughout its testing phase. The user registration functionality saw a steady increase in user accounts, reflecting a positive response

to the platform. Users actively utilized the movie search and review submission features, contributing to a growing database of user-generated content.

### **5.1.2 Recommendation Accuracy and Personalization**

The recommendation algorithm, based on collaborative filtering, showcased commendable accuracy in suggesting movies aligned with users' preferences. The collaborative nature of the algorithm allowed for personalized recommendations, considering individual user behaviors and ratings. Users reported satisfaction with the relevance of the movie suggestions, enhancing their overall viewing experience.

### **5.1.3 User Reviews and Interaction**

The user review system proved to be a pivotal component, fostering user interaction and community engagement. Users expressed their opinions through written reviews and ratings, contributing valuable insights to the platform. The integration of user reviews with the recommendation system created a dynamic feedback loop, enhancing the overall user experience and encouraging a sense of community.

### **5.1.4 System Performance and Scalability**

Performance testing revealed that the system could efficiently handle concurrent user interactions without significant latency. The use of asynchronous requests between the React front end and Node.js back end, coupled with PostgreSQL's optimization, contributed to a responsive and seamless user experience. The architecture exhibited scalability, with the system maintaining performance even as the user base and database size increased.

### **5.1.5 Security and Data Integrity**

User authentication mechanisms implemented on the platform ensured the security of user accounts and sensitive data. Role-based authorization mechanisms effectively managed user access rights, preventing unauthorized access to certain functionalities. The ACID compliance of PostgreSQL played a crucial role in maintaining data integrity, providing a reliable foundation for the storage and retrieval of user reviews and movie information.

## **5.2 Discussion**

### **5.2.1 Algorithmic Enhancements and Future Recommendations**

While the collaborative filtering algorithm proved effective, continuous refinement and exploration of additional recommendation methods, such as content-based filtering or hybrid approaches, could further enhance recommendation accuracy. Future iterations of the project could incorporate machine learning techniques to adapt recommendations based on evolving user preferences.

### **5.2.2 User Feedback and Iterative Development**

User feedback played a pivotal role in shaping the project's features and user interface. Ongoing user testing and feedback collection will be essential for iterative development, addressing user suggestions, identifying potential areas of improvement, and introducing new features to meet evolving user expectations.

### **5.2.3 Integration with External APIs and Data Enrichment**

To expand the movie database and enhance the richness of movie information, integrating external APIs, such as The Movie Database (TMDb), could provide

additional metadata and images. This integration would contribute to a more comprehensive movie catalog, enriching the user experience and providing a wider range of movie recommendations.

#### **5.2.4 Collaborative Features and Social Integration**

Future iterations could explore collaborative features, such as user-to-user messaging, discussion forums, or collaborative watchlists. Social media integration could facilitate sharing reviews and recommendations, fostering a more interconnected user community.

#### **5.2.5 Mobile Responsiveness and Accessibility**

Ensuring mobile responsiveness and accessibility features would broaden the platform's reach, allowing users to engage seamlessly across various devices. This adaptation would align with the increasing trend of users accessing web applications through mobile devices.

#### **5.2.6 Monetization Strategies**

Exploring monetization strategies, such as premium memberships or partnerships with streaming services, could sustain the project's growth and development. Implementing premium features or ad-supported models could provide avenues for revenue generation while maintaining a positive user experience.

The "Movie Recommendation and Review System" project demonstrated successful implementation, with positive outcomes in user engagement, recommendation accuracy, and system performance. The integration of user reviews with the recommendation system created a dynamic and interactive platform. Looking forward, continuous refinement, user feedback incorporation, and the exploration of

additional features will be crucial for the sustained success and evolution of the project.

## **6. Conclusions and future scope**

### **6.1 Conclusion**

The completion of the "Movie Recommendation and Review System" project marks a significant milestone in the journey of full-stack React web development. This project aimed to create a platform that seamlessly integrates personalized movie recommendations with user-generated reviews, fostering a dynamic and engaging movie community. As we reflect on the implementation and results, it becomes evident that the project has achieved its primary objectives, providing a valuable tool for movie enthusiasts to discover, review, and share their favorite films.

#### **6.1.1 Achievements and Highlights**

**1. User Engagement:** The platform successfully attracted and retained users, evident from the growing number of registered accounts and active user interactions. The integration of user reviews with movie recommendations created a vibrant community where users actively contributed to the content.

**2. Recommendation Accuracy:** The collaborative filtering algorithm demonstrated commendable accuracy in providing personalized movie suggestions. Users reported satisfaction with the relevance of the recommendations, enhancing their overall movie-watching experience.

**3. System Performance:** The system exhibited robust performance, efficiently handling concurrent user interactions and maintaining responsiveness. The

integration of React for the front end, Node.js for the back end, and PostgreSQL for the database contributed to a well-architected and scalable system.

**4. Security and Data Integrity:** The implementation of user authentication mechanisms and role-based authorization ensured the security of user accounts and sensitive data. PostgreSQL's ACID compliance played a crucial role in maintaining data integrity.

## 6.2 Future Scope

As we look ahead, the "Movie Recommendation and Review System" project offers exciting possibilities for future enhancements and expansions. The project's success lays the groundwork for ongoing development and refinement, incorporating user feedback and embracing emerging technologies. The following avenues present compelling opportunities for the future evolution of the project:

**1. Advanced Recommendation Algorithms:** Continued exploration of recommendation algorithms, including hybrid approaches and machine learning techniques, could further refine the accuracy and personalization of movie recommendations. Experimenting with real-time learning models based on user interactions could adapt suggestions to evolving user preferences.

**2. Enhanced User Interactivity:** Introducing collaborative features such as user-to-user messaging, discussion forums, and collaborative watchlists could elevate the platform's social experience. Enabling users to share reviews and recommendations through social media integration could broaden the community engagement.

**3. Mobile Responsiveness and Accessibility:** Optimizing the platform for mobile devices and ensuring accessibility features would cater to a broader audience. The adaptation to varying screen sizes and accessibility standards would enhance the user experience and make the platform inclusive.



**4. Integration with External APIs:** Integrating external APIs, such as The Movie Database (TMDb), could enrich the movie catalog with additional metadata and images. This enhancement would contribute to a more comprehensive and visually appealing movie database.

**5. Monetization Strategies:** Exploring sustainable monetization strategies, such as premium memberships or partnerships with streaming services, could support the project's growth. Implementing premium features or ad-supported models could generate revenue while maintaining a positive user experience.

**6. Continuous User Feedback and Iterative Development:** Establishing mechanisms for continuous user feedback and iterative development is vital for keeping the platform aligned with user expectations. Regular updates, feature additions, and bug fixes based on user input will ensure the platform remains relevant and user-centric.

**7. Globalization and Multi-language Support:** Expanding the platform's reach by introducing multi-language support and localization features could attract a more diverse user base. Adapting content and interfaces to accommodate different languages and cultural nuances would enhance the global appeal of the platform.

## 6.3 Final Thoughts

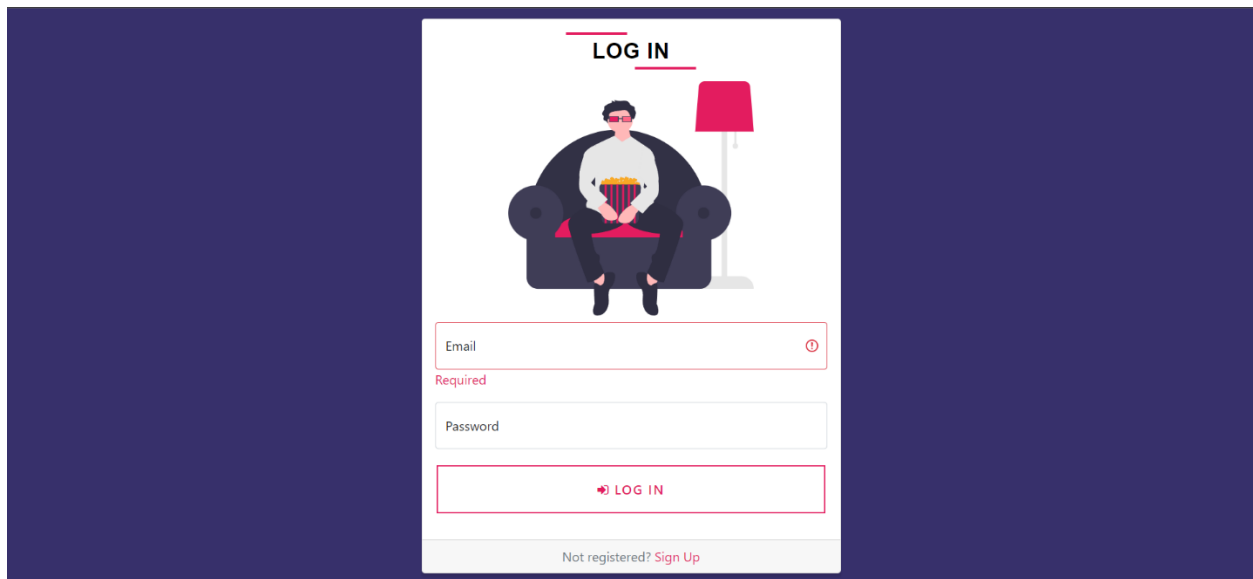
In conclusion, the "Movie Recommendation and Review System" project has not only met its objectives but has also set the stage for an exciting future. The fusion of React, PostgreSQL, and collaborative filtering algorithms has resulted in a feature-rich and dynamic platform. The continuous pursuit of innovation, user satisfaction, and adaptation to industry trends will undoubtedly propel the project to new heights. As we embark on the next phase of development, the journey promises to be as exhilarating as the creation of the system itself.

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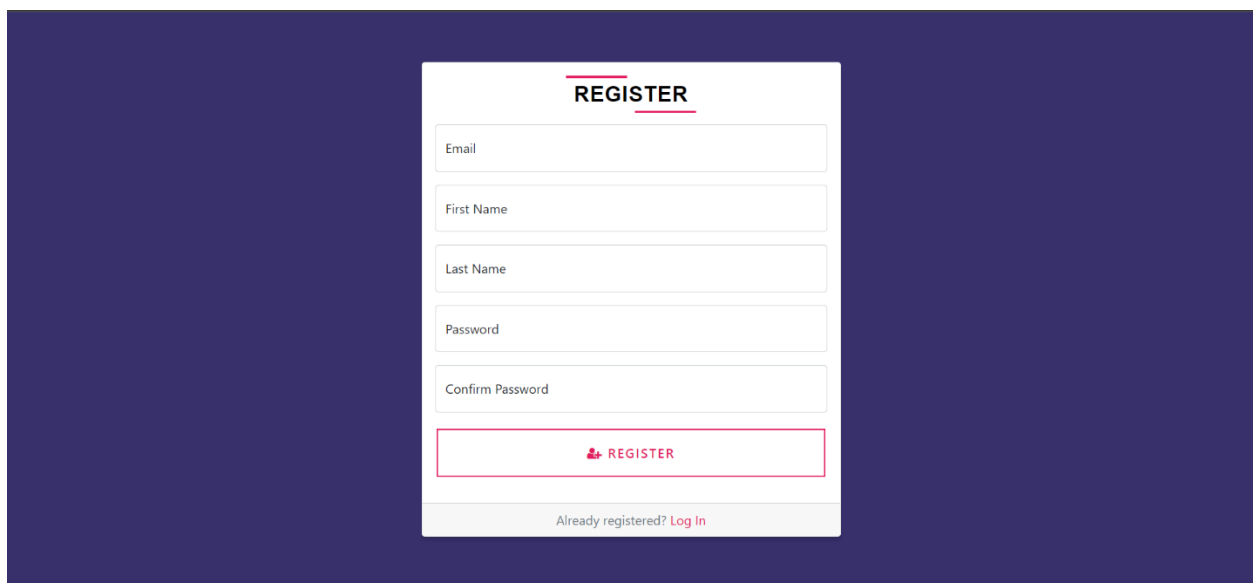
## Annexures

### Screenshots of the website



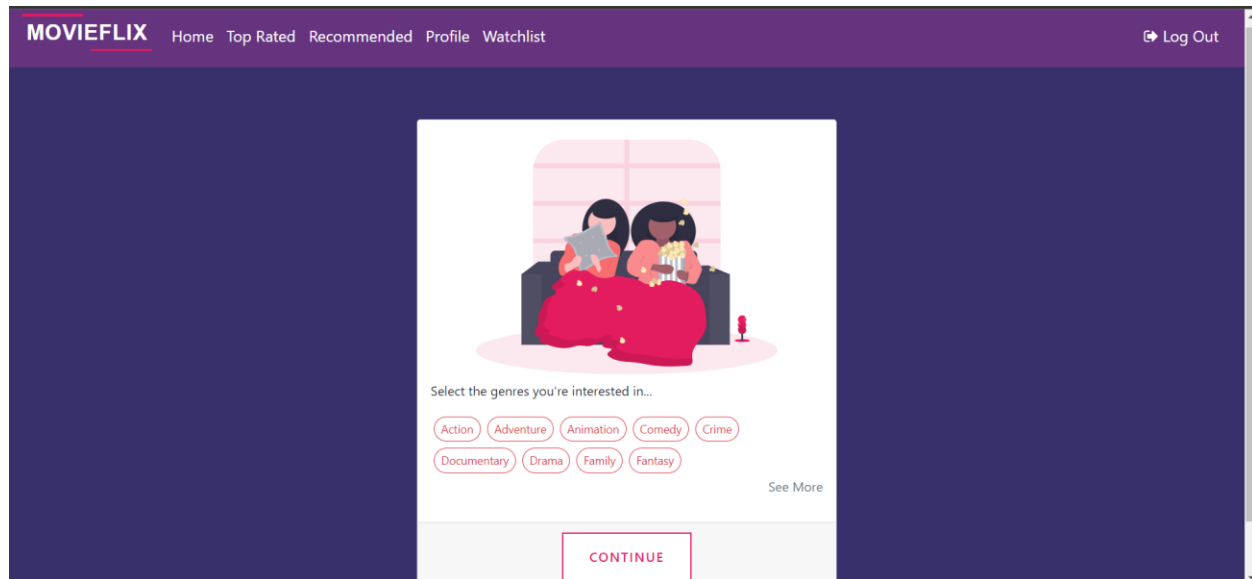
A screenshot of a login window titled "LOG IN" with a red underline. The window features a central illustration of a person sitting on a dark blue sofa, holding a red and yellow striped bag, with a red lamp to the right. Below the illustration are two input fields: "Email" with a red outline and a red information icon, and "Password" with a red outline. A red "Required" label is positioned between the two fields. Below the fields is a red button with a red key icon and the text "LOG IN". At the bottom, a grey bar contains the text "Not registered? [Sign Up](#)".

**Fig1 Login Window**

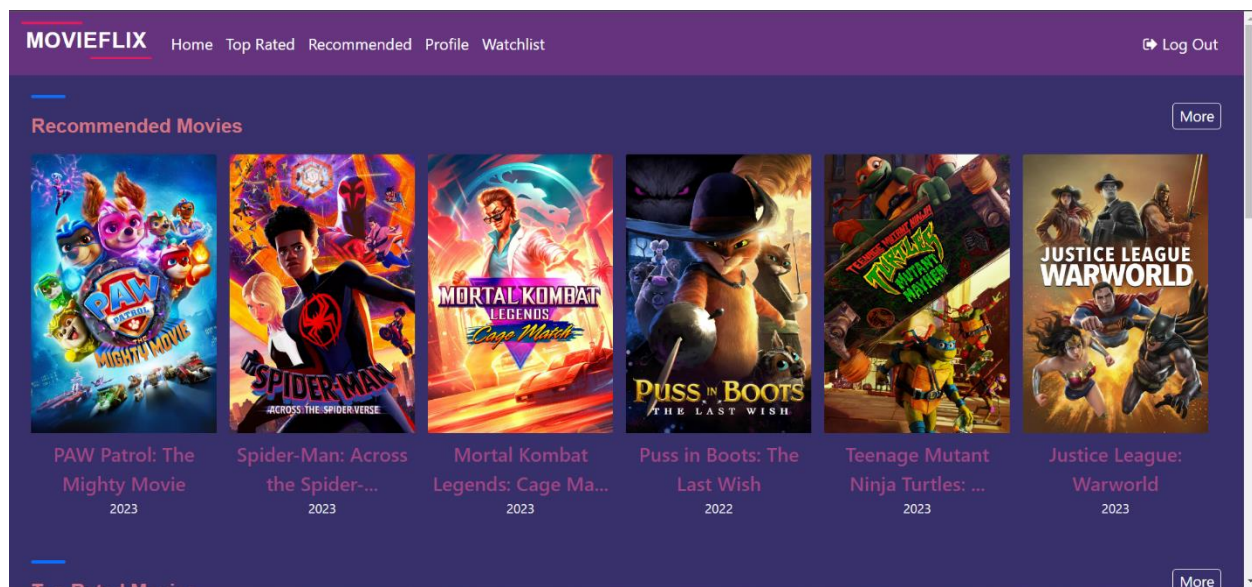


A screenshot of a sign up window titled "REGISTER" with a red underline. The window contains five input fields: "Email", "First Name", "Last Name", "Password", and "Confirm Password", all with red outlines. Below these fields is a red button with a red person icon and the text "REGISTER". At the bottom, a grey bar contains the text "Already registered? [Log In](#)".

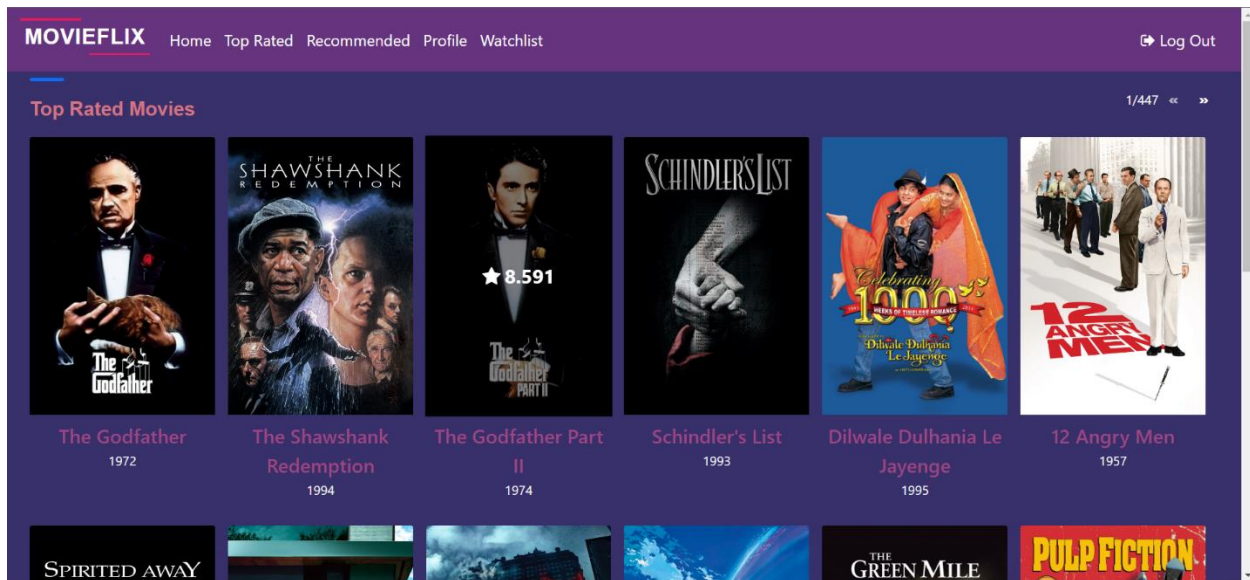
**Fig2 Sign up Window**



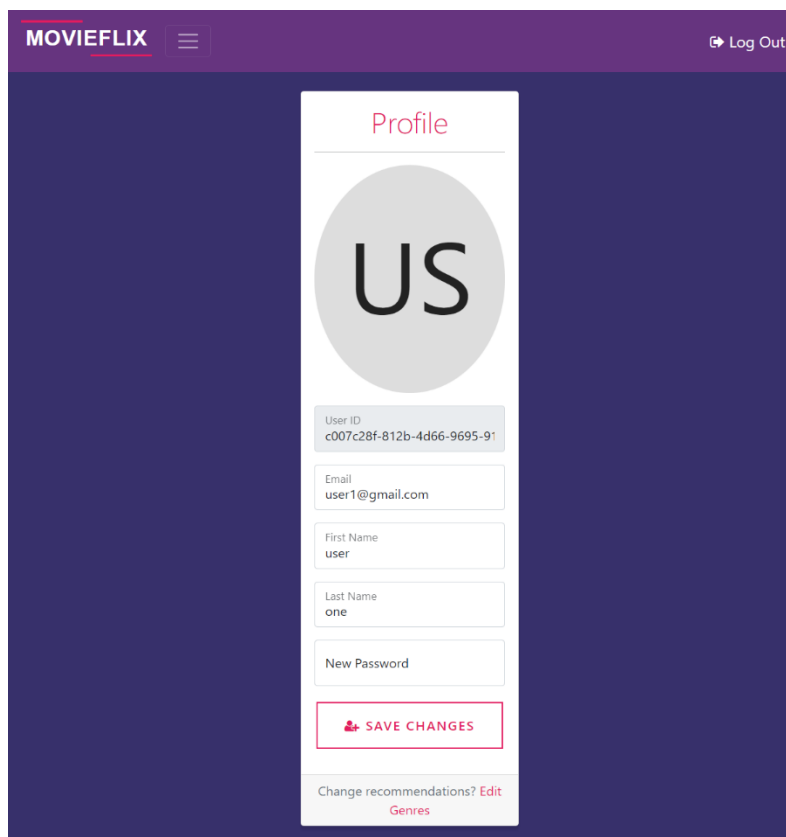
**Fig3 Selecting of movie genres**



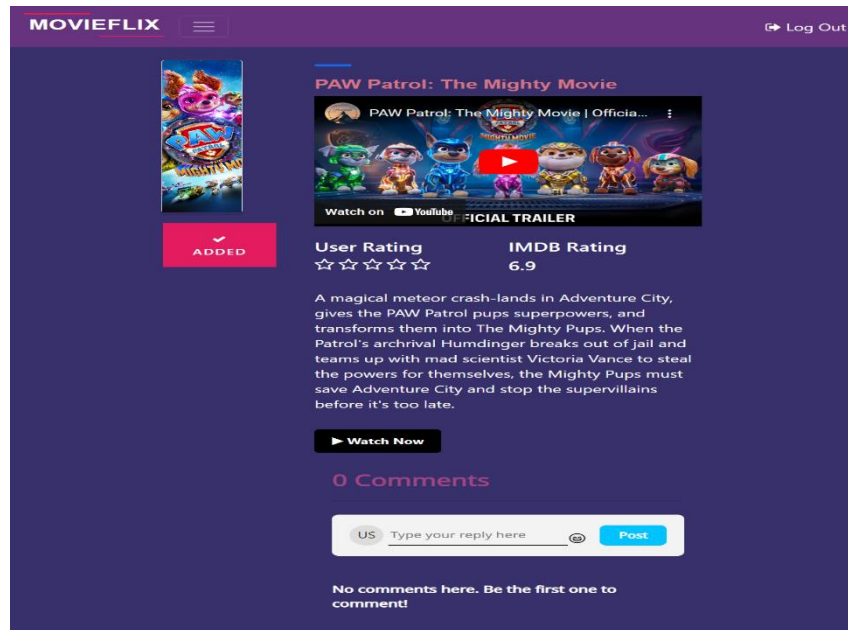
**Fig4 Home page of the web site**



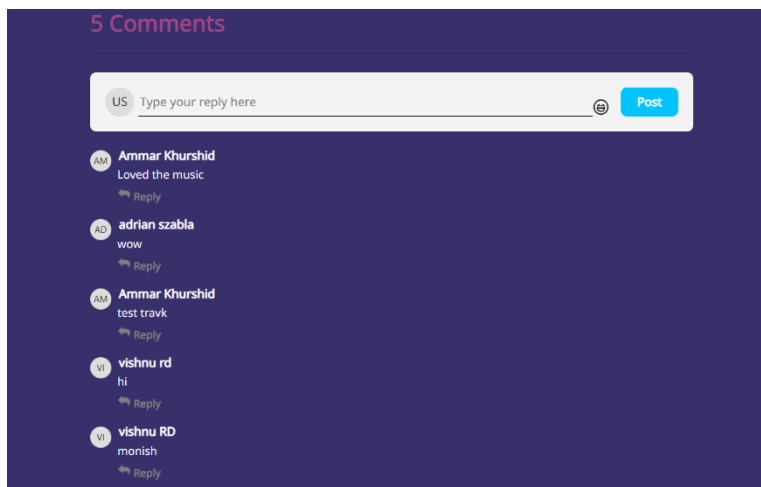
**Fig5 Top Rated Movies Page**



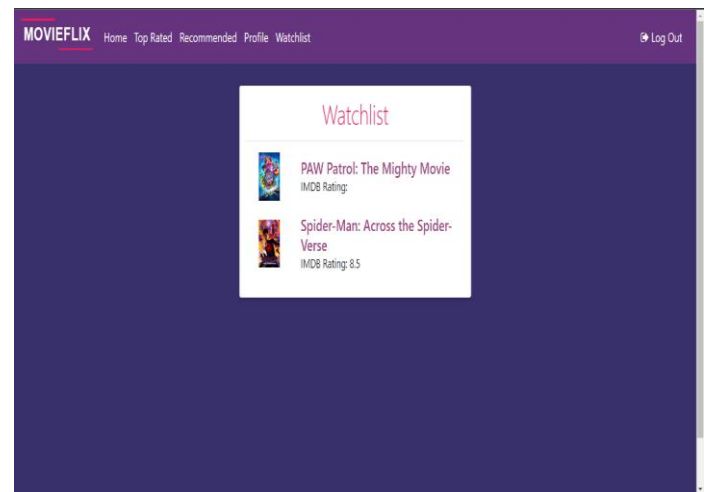
**Fig6 User Profile Page**



**Fig7 Movie rating and reviewing page**



**Fig8 User interaction area of the page**



**Fig 9 User Watchlist page**

POSTGRESQL

Movieflix

Free

Read the docs

Connect

Your database will expire on February 7, 2024. The database will be deleted unless you upgrade to a paid instance type.

General

Name

Movieflix

Edit

Created

20 minutes ago

Status

Available

PostgreSQL Version

15

Region

Singapore (Southeast Asia)

Read Replica

Add Read Replica

Storage

4.75% used out of 1.0 GiB

Datadog API Key

Add Datadog API Key

PostgreSQL Instance

Instance Type

Free

RAM 256 MB

CPU 100m

Storage 1 GB

Update

A credit card is required to change instance types.

Add payment information

Connections

Hostname

dpg-cl68flquipc73c9bq0g-a

Port

5432

Database

movieflix\_uz5y

Username

movieflix\_uz5y\_user

Password

.....

Internal Database URL

.....

External Database URL

.....

PSQL Command

.....

render

DashboardBlueprintsEnv GroupsDocs

New + aditykr142@gmail.com

Info

Metrics

Recovery

Logs

1 IP range is allowed from outside of your private network.

Sources are specified CIDR block notation.

Source

0.0.0.0/0

Description

everywhere

Test an IP address

+ Add source

Cancel

Save

Restart Database

Suspend Database

Delete Database

Feedback

Invite a Friend

Contact Support

Fig10 PostgreSQL database

## Company issued offer letter

**Thaniya**  
Technologies

**INTERNSHIP OFFER LETTER**

Date: 05/06/2023

This is to certify that **Mr. Adithya Rao Kalathur** Student of **Manipal Institute of Technology**, has been accepted to do his Internship with **Thaniya Technologies** from June/July in the field of Full Stack Development during which he will undergo rigorous training and project, he is expected to give his best.

We request College to kindly acknowledge the same.



Sincerely,

  
**SHAILESH SHETTY S**  
SUPERVISOR

  
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