Cinexa – A Modern OTT Platform

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EE5209 Web Application Development

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1 Introduction

The existence of digital streaming services has significantly changed the entertainment industry by enabling users to access numerous films and series through their screens at home. In this context, Cinexa A Modern OTT Platform can be presented as a new, viable and innovative web application that aims to provide its users with a smooth and satisfying viewing experience that can be compared to that of popular platforms like Netflix and Amazon Prime.

This project comprises a comprehensive and easy-to-use web application for the end-users, and a web application for the admins. This backend system is designed to provide administrators full authority for managing the content and the users of this platform from behind. The admin portal makes it easy to control the uploading of films, the management of film lists, and users. This also makes sure that the platform is always active and updated to better serve all its users.

In addition to that, this report dives into the functionalities and features of both the Cinexa web application and its admin portal. It covers the technical architecture, user interface design, and the various modules that facilitate seamless operations with use of MERN stack.

2 User Interface

2.1 Client User Interface

The client user interface of Cinexa is designed to offer a visually appealing, and user-friendly experience. The primary features and design elements that are composed of several pages in the client-facing web application are described below.

Register and Login Page: New users are directed to the register page to create an account. Upon registration, they are directed to the login page. On successful login, user details are stored in local storage, ensuring the user remains logged in even after refreshing the page.

Homepage: The home page displays available movies and series. Additionally, the feature content randomly refreshes every 10 seconds, presenting a dynamic browsing experience for the user.
Movie and Series List: All movies and series are categorized here. Upon hovering over each item, the trailer plays automatically. Clicking on an item allows users to watch the content.

Movies and Series Page: Similar to the homepage, but the content is categorized specifically as either movies or series, providing a more organized browsing experience.

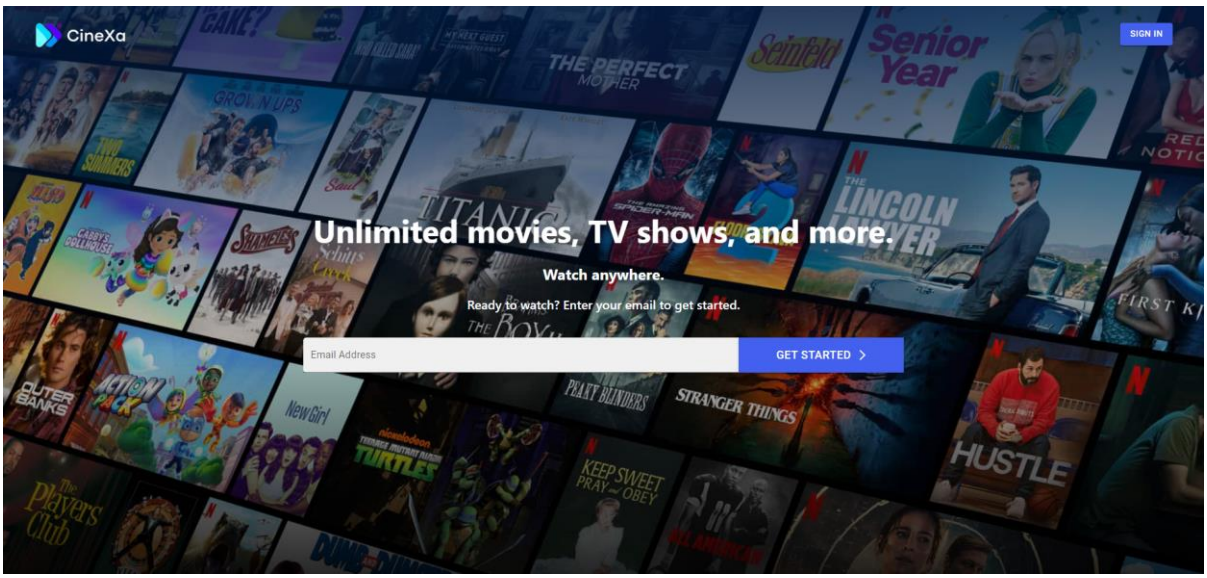


Figure 2.1: Register Page

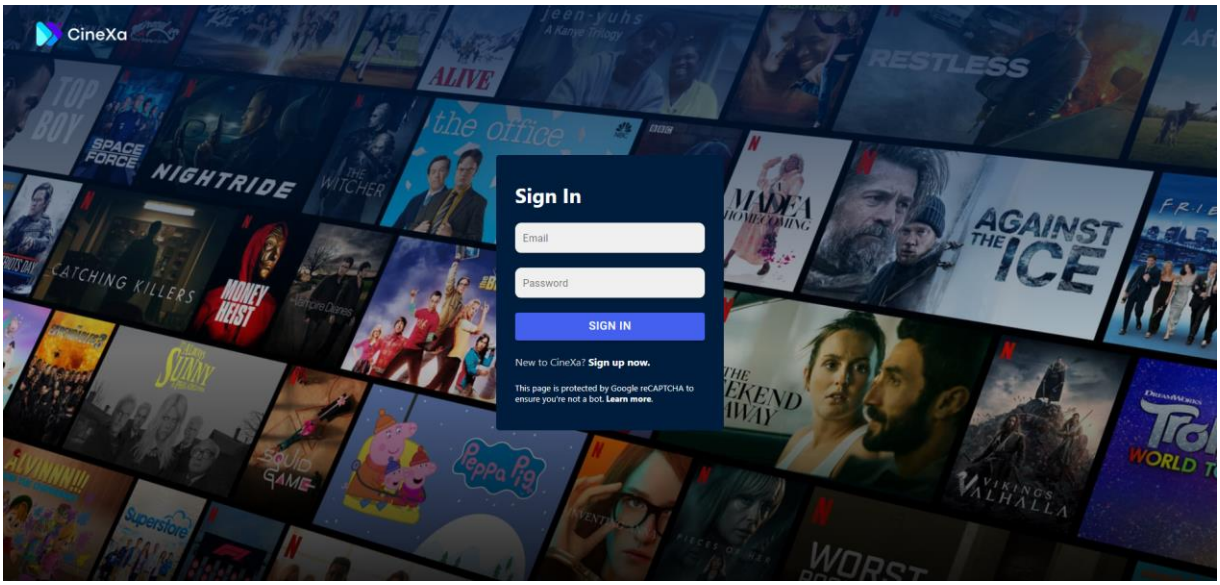


Figure 2.2: Login Page

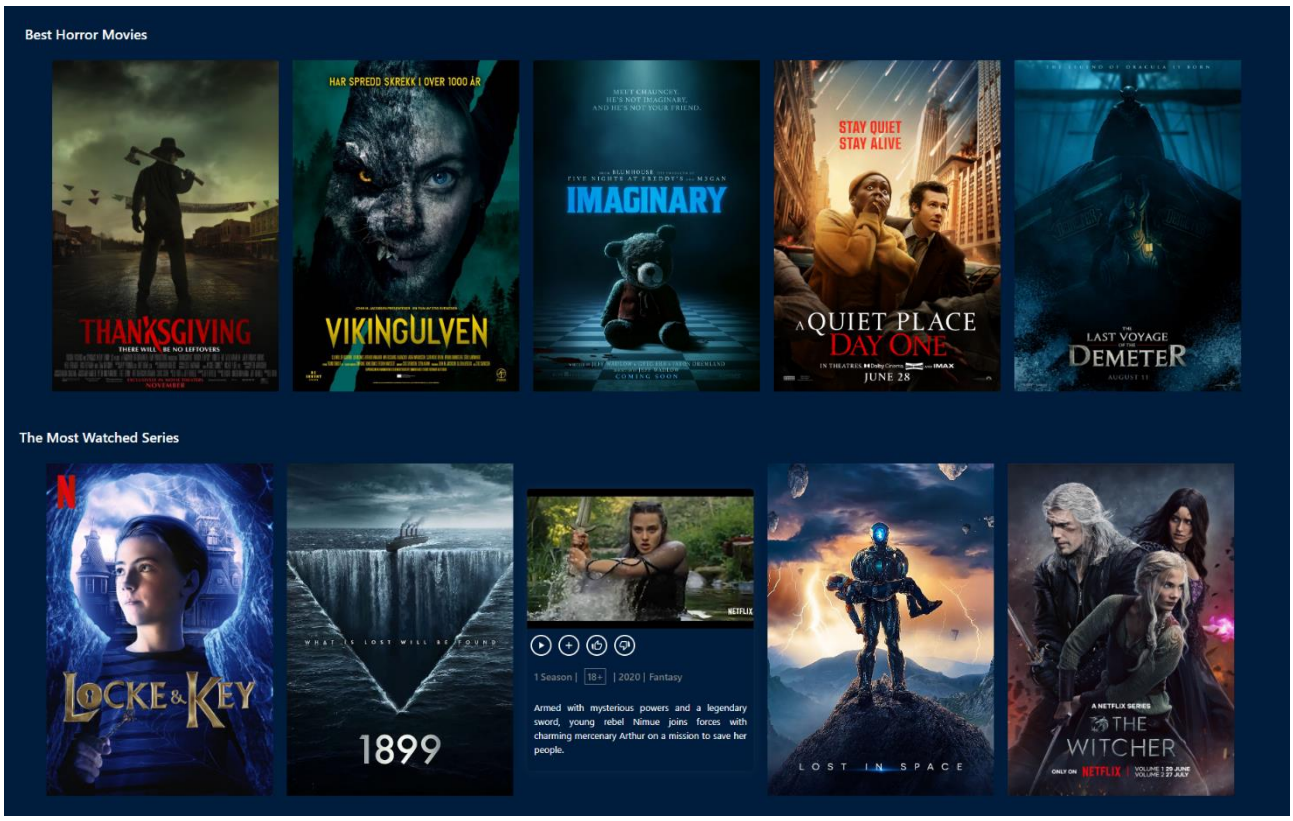
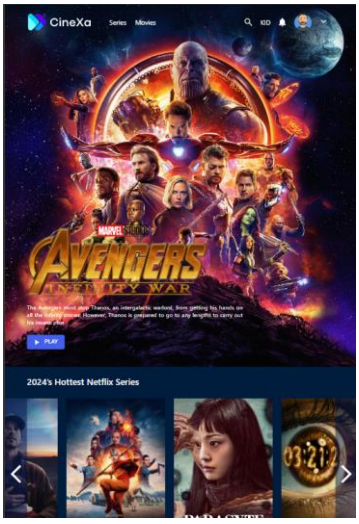
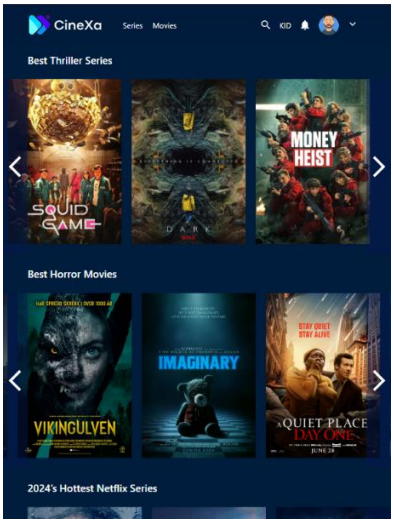


Figure 2.3: Home Page

Figure 2.4: Watch Page





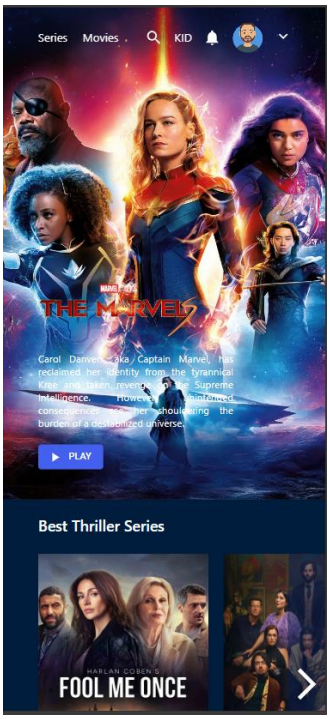


Figure 2.5: Responsive UI

2.2 Admin User Interface

The admin user interface of Cinexa is designed to facilitate efficient management of the platform's content and user accounts. The overview of the admin portal is given below.

Login Page: The login page is designed exclusively for Cinexa admins, ensuring secure access to administrative functions and sensitive data.

Dashboard: Displays user login details and a chart showing monthly user registrations.

Quick Menu: Separate page is to perform basic CRUD operations for users, movies/series, and movie lists.

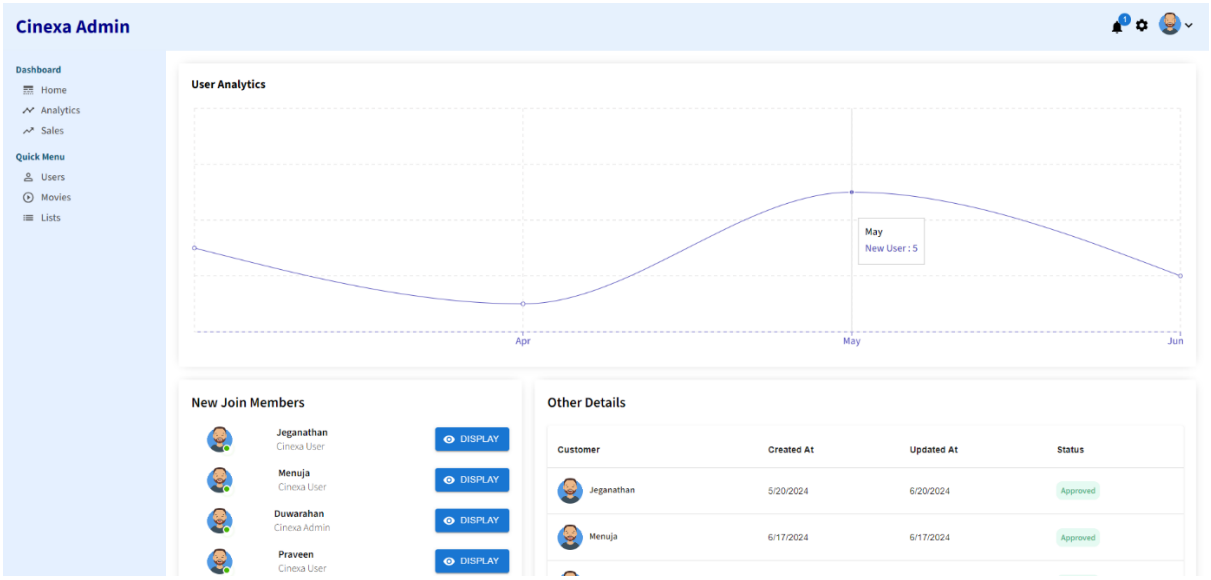


Figure 2.6: Dashboard

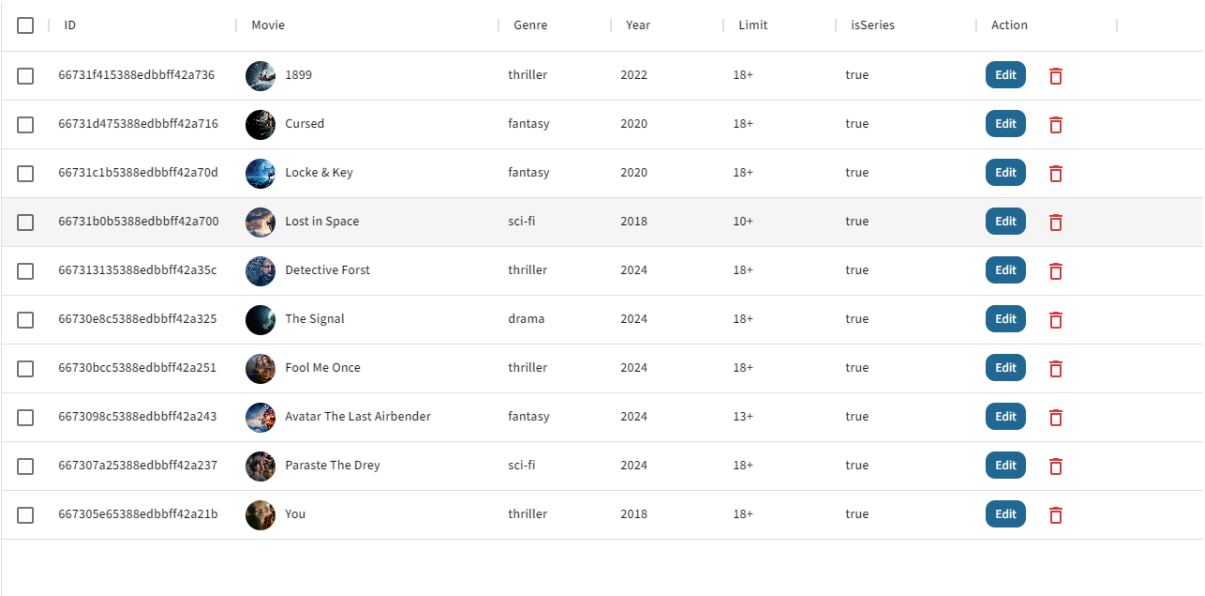


Figure 2.7: All Movie List

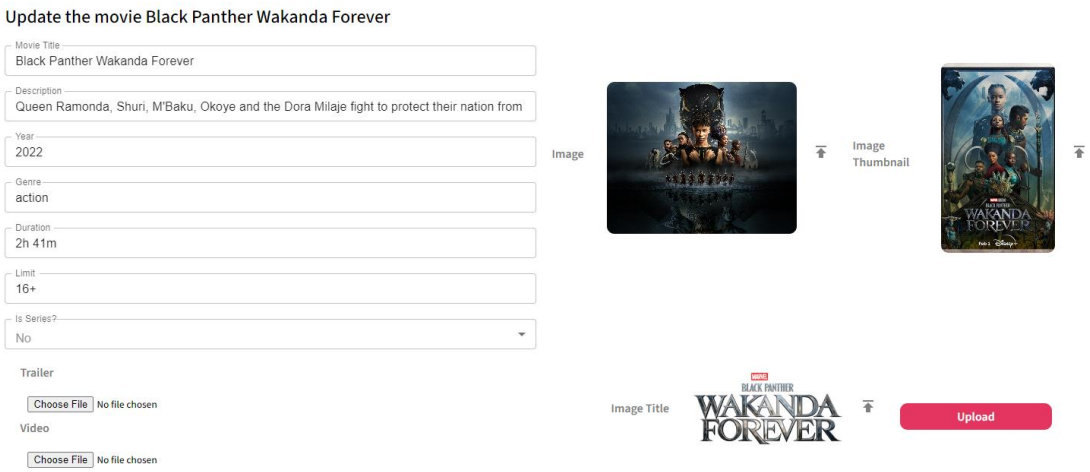


Figure 2.8: Updating Existing Movie

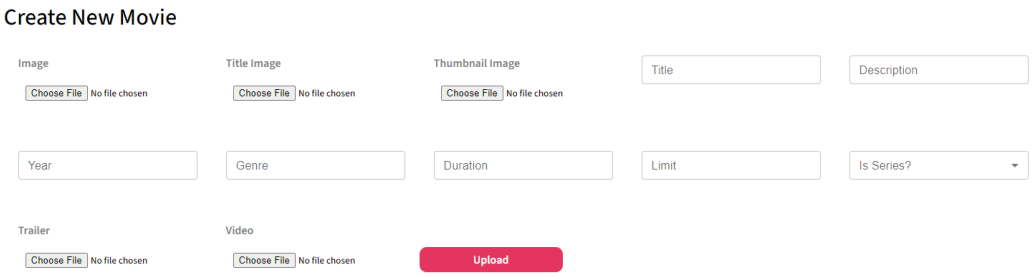


Figure 2.9: Adding New Movie

3 Technologies Used

The Cinexa web application utilizes a variety of technologies to deliver its functionality:

- **MongoDB:** Used as the primary database to store user and movie information.
- **Firebase:** Utilized for storing images and videos, with links to this content saved in MongoDB.
- **JWT-based Authentication:** Implemented for secure authentication and authorization processes.
- **React JS:** A JavaScript library used for building the user interface components.
- **Node JS:** A JavaScript runtime used for server-side logic and API integrations.
- **Express JS:** A web application framework for Node.js, facilitating backend development and API routing.
- **CSS and SCSS:** Used for styling and customization of the user interface.
- **React Material UI:** A UI component library of React is used to enhance the visual design and usability of the application.

- **Recharts:** A charting library for React that is used to display a monthly chart depicting the registration trends of users over time.
- **Crypto JS**: Used cryptographic functions such as hashing to hash the passwords of the users.
- **REST API:** Developed with Express.js to fetch and manipulate data stored in MongoDB, enabling seamless integration between the frontend and backend components of Cinexa.
- **Context API:** Used within React for state management, providing a centralized approach to manage application state and data flow across components.

These technologies collectively contribute to creating a robust and efficient web application that meets the functional and design requirements of Cinexa.

4 Methodologies Used

The development of Cinexa incorporates several methodologies to ensure efficiency, quality, and user satisfaction.

- **Agile Methodology**: The project was developed incrementally, focusing on one small section at a time.
- **API Testing:** Used Postman for testing and validating REST APIs, ensuring they function correctly and meet requirements.
- **Iterative Development:** followed an iterative approach, developing features incrementally to check and make necessary adjustments promptly.
- **Scrum Framework:** Utilizes practices like daily stand-ups, sprint planning, reviews, and retrospectives to facilitate continuous progress.

5 Significance to the Society

The Cinexa project offers several significant benefits to society, enhancing entertainment accessibility, cultural diversity, and technological advancement. This is a convenient platform for users to access a wide variety of movies and series from the comfort of their homes, enhancing the overall entertainment experience. Moreover, this platform can be used for independent films and series, giving a voice to new creators who might not have access to traditional distribution channels. Furthermore, the development and maintenance of Cinexa create job opportunities in various fields including software development, content creation, and customer support. In addition to that, Cinexa can include educational content, documentaries, and informative series, providing users with opportunities to learn and expand their knowledge. Therefore, the Cinexa project can have a huge impact on entertainment accessibility, cultural diversity, technological progress, and education.

6 References

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