5 STAR MRP

Project Report

Rawal Institutions

Where Success is the Culture

(A Unit of Goyal Educational & Welfare Society)

Submitted To -

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ACKNOWLEDGEMENT

I would like to take this opportunity to express my profound sense of gratitude and respect to all those who helped me throughout the duration of this project. I acknowledge the efforts of those who contributed significantly to my project. I express my heartiest thanks to all who selflessly assisted me in my expedition of carrying out this project.

I feel privileged to offer our sincere thanks and deep sense of gratitude to **Ms. Neeru mam (HOD,CSE)** for expressing his confidence in me by assisting and giving me liberal encouragement as well as moral support not only during this project, but also throughout my studies at the college.

Furthermore, we are grateful for the co-operation and valuable suggestions rendered **Ms. Sonam mam** and **Shahiba mam** under whose supervision and inspiring guidance, this project was embarked upon, planned and executed. Their sincere suggestions helped me greatly in bringing out this work at its present shape.

Dated: **Signature:**

Part - 1

Introduction

Introduction to project

5 STAR MRP is developed to be an online database of information related to Films, Television series, Web series, Documentaries. It is made as one stop destination to give and read reviews of other users. Most of the site data will be provided by users in the form of rating and review of different series and movies.

The title and talent page of 5 STAR MRP are accessible to all users, but only registered and logged-in users can submit new material and reviews on a scale of 1 to 10 stars, and the totals are converted into an average-rating.

The website UI will be shown distinctively in two types depending your are logged in as an user or administrator. The website UI will be different when you login depending upon your email id which is stored in database as an user or administrator.

The UI of this website is beautiful. The uploadation part of the old or newcomer movies and series will be handled by the administration accounts.

The UI of the administration account is crafted with purpose of good user experience. The administrator doesn't have to worry about the backend or how the data will be uploaded to the database neither he requires any kind programming language to perform its task. Every thing could be completed with a few clicks.

What is the need of this project or what problem does it solves?

Today OTT media services like Netflix and Amazon Prime has gained a lot of popularity and the content made by any industry is going more and more global.

Viewers have a lot of choices regarding which film, tv series, web series or documentary etc. should they watch next.

Theses Movies and series are coming from different industry like Hollywood, Bollywood, Tollywood etc. along with different forms like live action, animation, podcast etc.

But the average viewer doesn't which movie or series is worth investing his time in. Today people has busy life and with the little time they had to spend with families and friends and watch these content, they wanted to know which is the best movie to watch.

Since every year thousand of movies and series are released. People wanted to read their review and rating before investing their time since there will be only a handful that they can afford to watch every year.

So this website fulfils that need while working on the same rating and reviews method that is adopted by ecommerce sites like Flipkart and Amazon

Tech Stack Used

The Tech stack used in this project is MEAN stack along with Cloudinary service.

MERN Stack: MERN Stack is a Javascript Stack that is used for easier and faster deployment of full-stack web applications. MERN Stack comprises of 4 technologies namely: MongoDB, Express, React and Node.js. It is designed to make the development process smoother and easier.

Each of these 4 powerful technologies provides an end-to-end framework for the developers to work in and each of these technologies play a big part in the development of web applications.

Getting to know MERN Stack components:

MongoDB: Cross-platform Document-Oriented Database
MongoDB is a NoSQL database where each record is a document comprising of key-value pairs that are similar to JSON (JavaScript Object Notation) objects. MongoDB is flexible and allows its users to create schema, databases, tables, etc. Documents that are identifiable by a primary key make up the basic unit of MongoDB. Once MongoDB is installed, users can make use of Mongo shell as well. Mongo shell provides a JavaScript interface through which the users can interact and carry out operations (eg: querying, updating records, deleting records).

Why use MongoDB?

- Fast – Being a document-oriented database, easy to index documents. Therefore a faster response.
- Scalability – Large data can be handled by dividing it into several machines.
- Use of JavaScript – MongoDB uses JavaScript which is the biggest advantage.
- Schema Less – Any type of data in a separate document.
- Data stored in the form of JSON –
- Objects, Object Members, Arrays, Values, and Strings

- JSON syntax is very easy to use.
- JSON has a wide range of browser compatibility.
- Sharing Data: Data of any size and type(video, audio) can be shared easily.
- Simple Environment Setup – Its really simple to set up MongoDB.
- Flexible Document Model – MongoDB supports document-model(tables, schemas, columns & SQL) which is faster and easier.

Express: Back-End Framework:
Express is a Node.js framework. Rather than writing the code using Node.js and creating loads of Node modules, Express makes it simpler and easier to write the back-end code. Express helps in designing great web applications and APIs. Express supports many middlewares which makes the code shorter and easier to write.

Why use Express?

- Asynchronous and Single-threaded.
- Efficient, fast & scalable
- Has the biggest community for Node.js
- Express promotes code reusability with its built-in router.
- Robust API
- Create a new folder to start your express project and type below command in the command prompt to initialize a package.json file. Accept the default settings and continue.

React: Front-End Library
React is a JavaScript library that is used for building user interfaces. React is used for the development of single-page applications and mobile applications because of its ability to handle rapidly changing data. React allows users to code in JavaScript and create UI components.

Why use React?

- Virtual DOM – A virtual DOM object is a representation of a DOM object. Virtual DOM is actually a copy of the original DOM. Any modification in the web application causes the entire UI to re-render the virtual DOM. Then the difference between the original DOM and this

virtual DOM is compared and the changes are made accordingly to the original DOM.

- JSX – Stands for JavaScript XML. It is an HTML/XML JavaScript Extension which is used in React. Makes it easier and simpler to write React components.
- Components – ReactJS supports Components. Components are the building blocks of UI wherein each component has a logic and contributes to the overall UI. These components also promote code reusability and make the overall web application easier to understand.
- High Performance – Features like Virtual DOM, JSX and Components makes it much faster than the rest of the frameworks out there.
- Developing Android/Ios Apps – With React Native you can easily code Android-based or IOS-Based apps with just the knowledge of JavaScript and ReactJS.
- You can start your react application by first installing "create-react-app" using npm or yarn.

Node.js: JS Runtime Environment

Node.js provides a JavaScript Environment which allows the user to run their code on the server (outside the browser). Node pack manager i.e. npm allows the user to choose from thousands of free packages (node modules) to download.

Why use Node.JS?

- Open-source JavaScript Runtime Environment
- Single threading – Follows a single-threaded model.
- Data Streaming
- Fast – Built on Google Chrome's JavaScript Engine, Node.js has a fast code execution.
- Highly Scalable

Cloudinary: Cloudinary is a SaaS technology company headquartered in Santa Clara, California, with offices in Israel, England, Poland, and Singapore. The company provides cloud-based image and video management services. It enables users to upload, store, manage, manipulate, and deliver images and video for websites and apps.

Cloudinary services is used in this project to upload poster and trailers of movies, web series, tv series etc.

Top features of this project

- Full Stack project
- Full authentication system with forget password and Email verification
- Different UI and features will be shown depending upon whether the registered sign-in person is user or administrator.
- Have Dark Mode (it is enabled by default, you can switch to light mode by clicking on the icon to change modes in the top bar.

How to change a sign-up person from user to administrator

By default all users are set as user, you can change them into administrator by changing the “role” field in mongodb data base from “user” to “admin”.

Part - 2

Requirement analysis

System requirement if the webstes is hosted and accessed using browser

- Processor – Intel Core i3
- RAM – 1 GB
- Hard Disk – 40 GB
- Monitor – Colour Monitor
- Keyboard – 104 keys
- Mouse – Any pointing device

Sytem requirements if the project and its database runs locally

- Processor – Intel Core i3
- RAM – 4 GB
- Monitor – Colour Monitor
- Keyboard – 104 Keys
- Mouse – Any pointing device

Software requirements to run project locally

- Visual Studio Code IDE
- NodeJS Environment
- Browser (example : Google Chrome)
- MonogoDB Compass (If database is also setup on local machine, otherwise not needed)
- An Cloudinary account to upload posters and trailers of movies, series etc.

Part - 3

Design

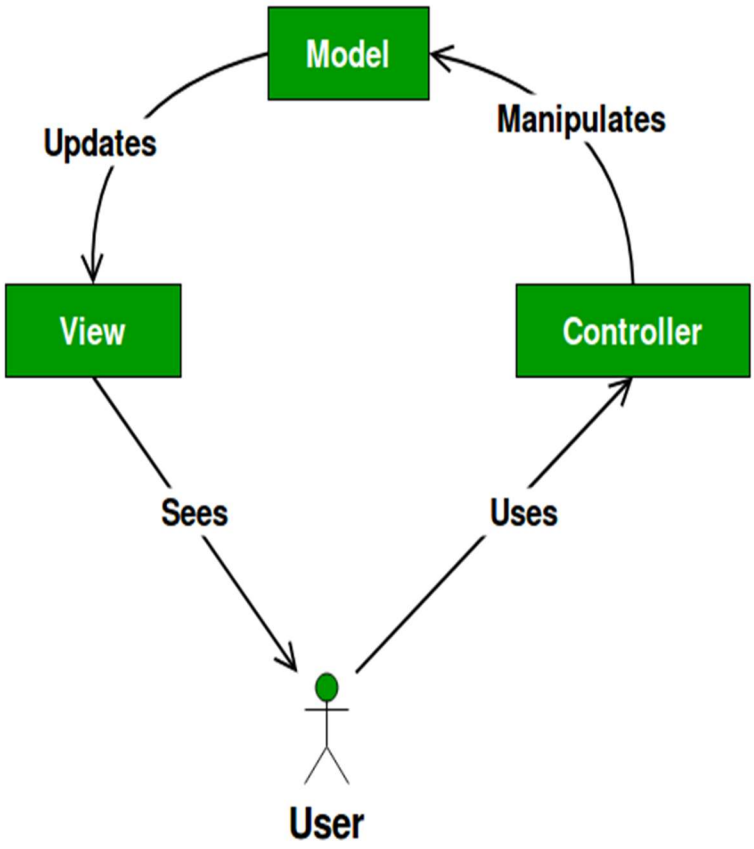
Model View Controller Pattern

Model View Controller Pattern is used in this MERN stack project.

The **Model View Controller** (MVC) design pattern specifies that an application consist of a data model, presentation information, and control information. The pattern requires that each of these be separated into different objects.

MVC is more of an architectural pattern, but not for complete application. MVC mostly relates to the UI / interaction layer of an application. You're still going to need business logic layer, maybe some service layer and data access layer.

UML Diagram MVC Design Pattern



Design components

- The **Model** contains only the pure application data, it contains no logic describing how to present the data to a user.
- The **View** presents the model's data to the user. The view knows how to access the model's data, but it does not know what this data means or what the user can do to manipulate it.
- The **Controller** exists between the view and the model. It listens to events triggered by the view (or another external source) and executes the appropriate reaction to these events. In most cases, the reaction is to call a method on the model. Since the view and the model are connected through a notification mechanism, the result of this action is then automatically reflected in the view.

Advantages

- Multiple developers can work simultaneously on the model, controller and views.
- MVC enables logical grouping of related actions on a controller together. The views for a specific model are also grouped together.
- Models can have multiple views.

Disadvantages

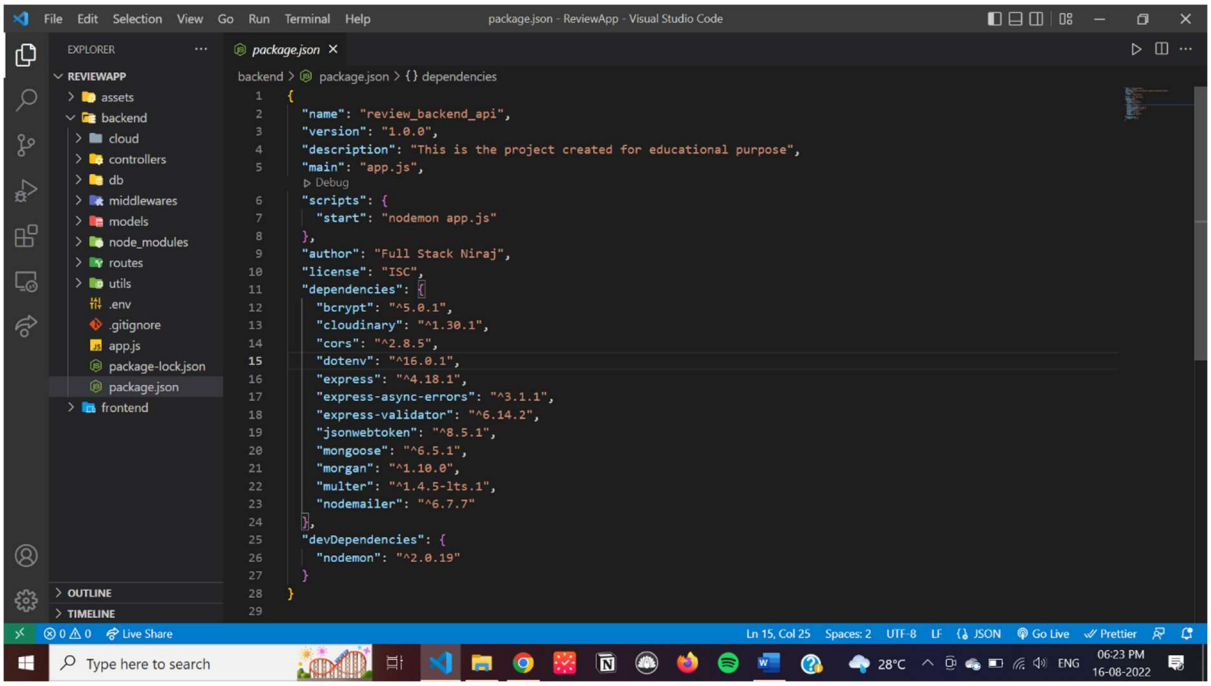
- The framework navigation can be complex because it introduces new layers of abstraction and requires users to adapt to the decomposition criteria of MVC.
- Knowledge on multiple technologies becomes the norm. Developers using MVC need to be skilled in multiple technologies.

Part - 4

External Libraries

List of all external libraries and services used in this project is mentioned in package.json file.

The package. json file is **the heart of any Node project**. It records important metadata about a project which is required before publishing to NPM, and also defines functional attributes of a project that npm uses to install dependencies, run scripts, and identify the entry point to our package.



Package.json file of this project

List of external libraries and services –

1. Bcrypt – This library is used to hash password and sensitive text. So that in case if the database is compromised, the password should not fell in the hands of cyber attackers.

2. Cloudinary – It is a library of a company which provides cloud-based image and video management services. It enables users to upload, store, manage, manipulate, and deliver images and video for websites and apps.

3. Cors – It is a node.js package for providing a Connect/Express middleware that can be used to enable CORS(Cross-Origin Resource Sharing) with various options.

4. Dotenv – Dotenv is a zero-dependency module that loads environment variables from a .env file into process.env. Storing configuration in the environment separate from code is based on The Twelve-Factor App methodology.

5. Express - Fast, unopinionated, minimalist web framework for node.

6. express-async-errors – A dead simple ES6 async/await support hack for ExpressJS

7. express-validator – express.js middleware for validation.

8. Jsonwebtoken – A library for the implementation of JSON web tokens.

9. Mongoose - Mongoose is a MongoDB object modeling tool designed to work in an asynchronous environment. Mongoose supports both promises and callbacks.

10. Morgan – HTTP request logger middleware for node.js

11. Multer – Multer is a node.js middleware for handling multipart/form-data, which is primarily used for uploading files. It is written on top of busboy for maximum efficiency.

12. Nodemailer – Nodemailer is a module for Node.js applications to allow easy as cake email sending.

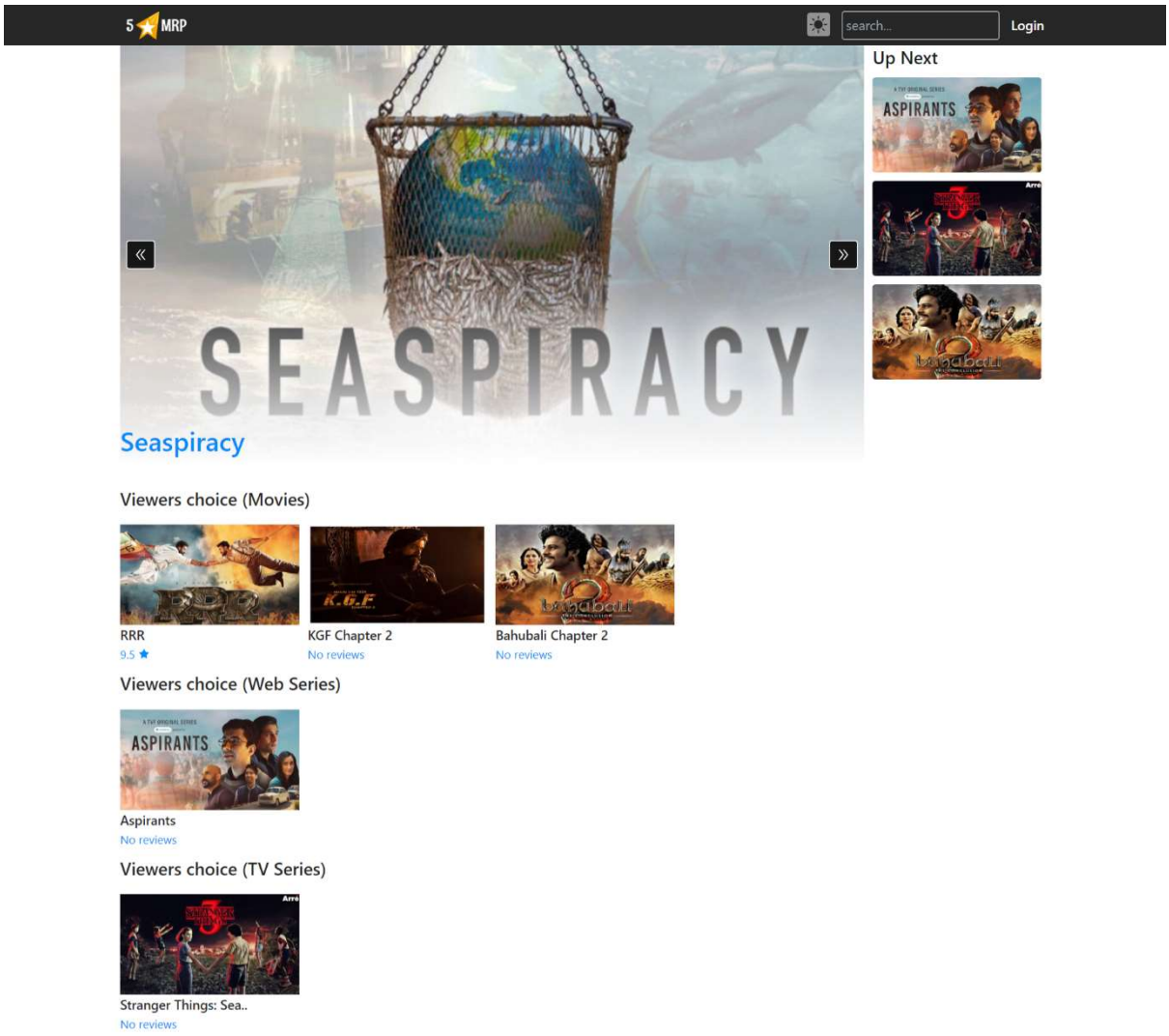
13. Nodemon – nodemon is a tool that helps develop Node.js based applications by automatically restarting the node application when file changes in the directory are detected.

Part - 5

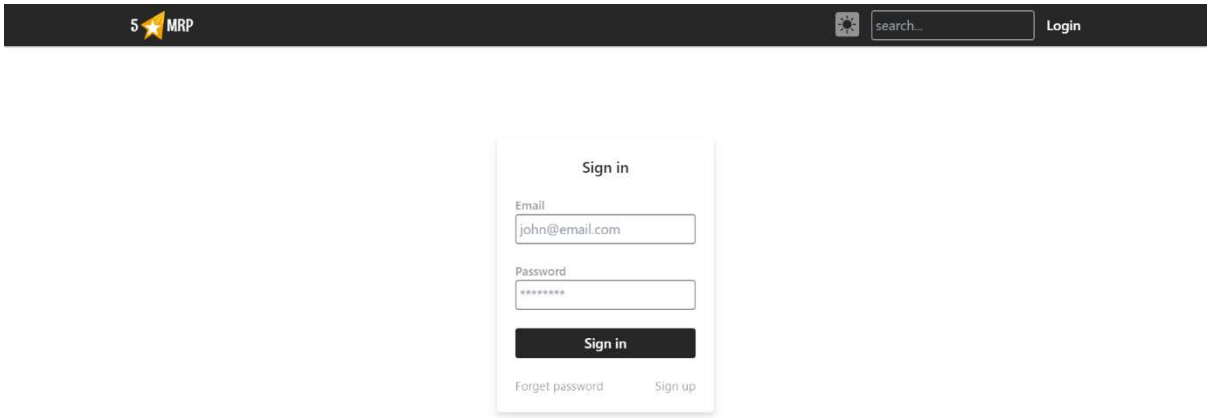
Snapshots of GUI

User side(Light Theme)

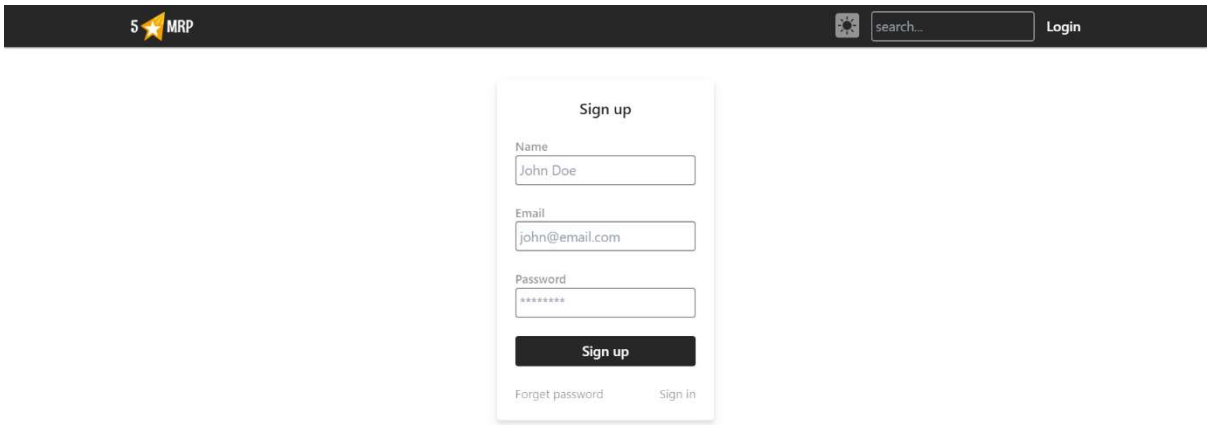
Home page



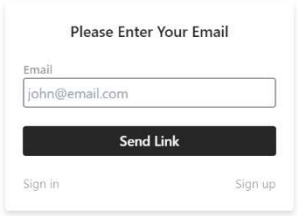
Signin page



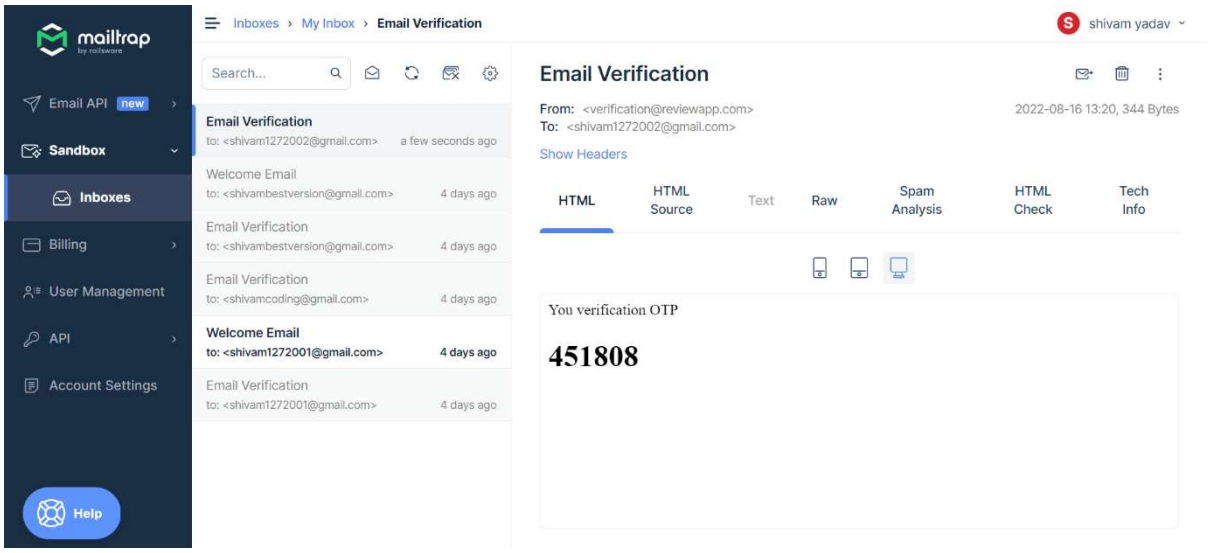
Signup page



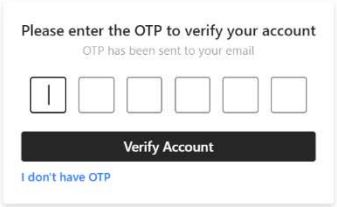
Forgot password page



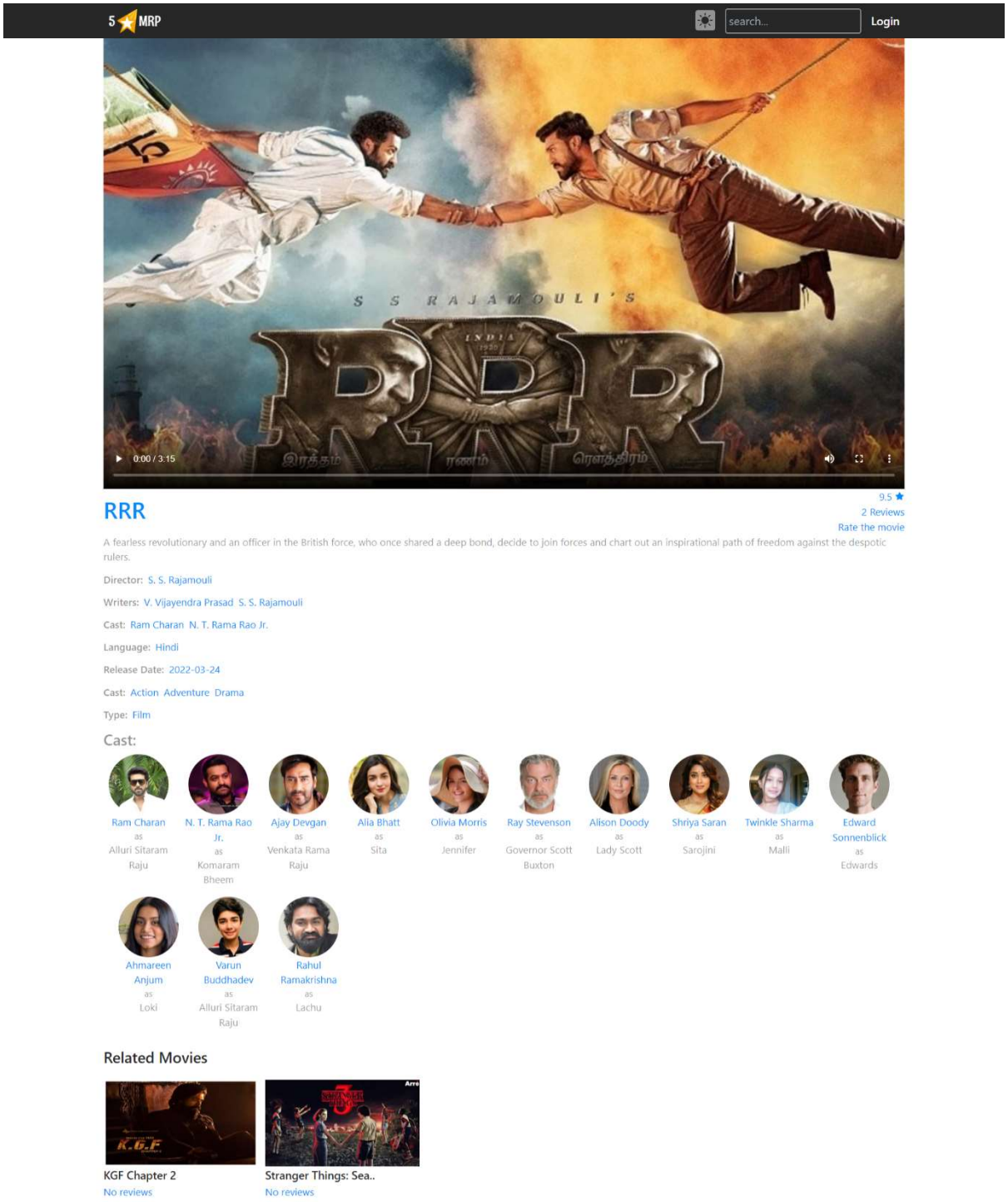
OTP send to user through email for email verification after signup



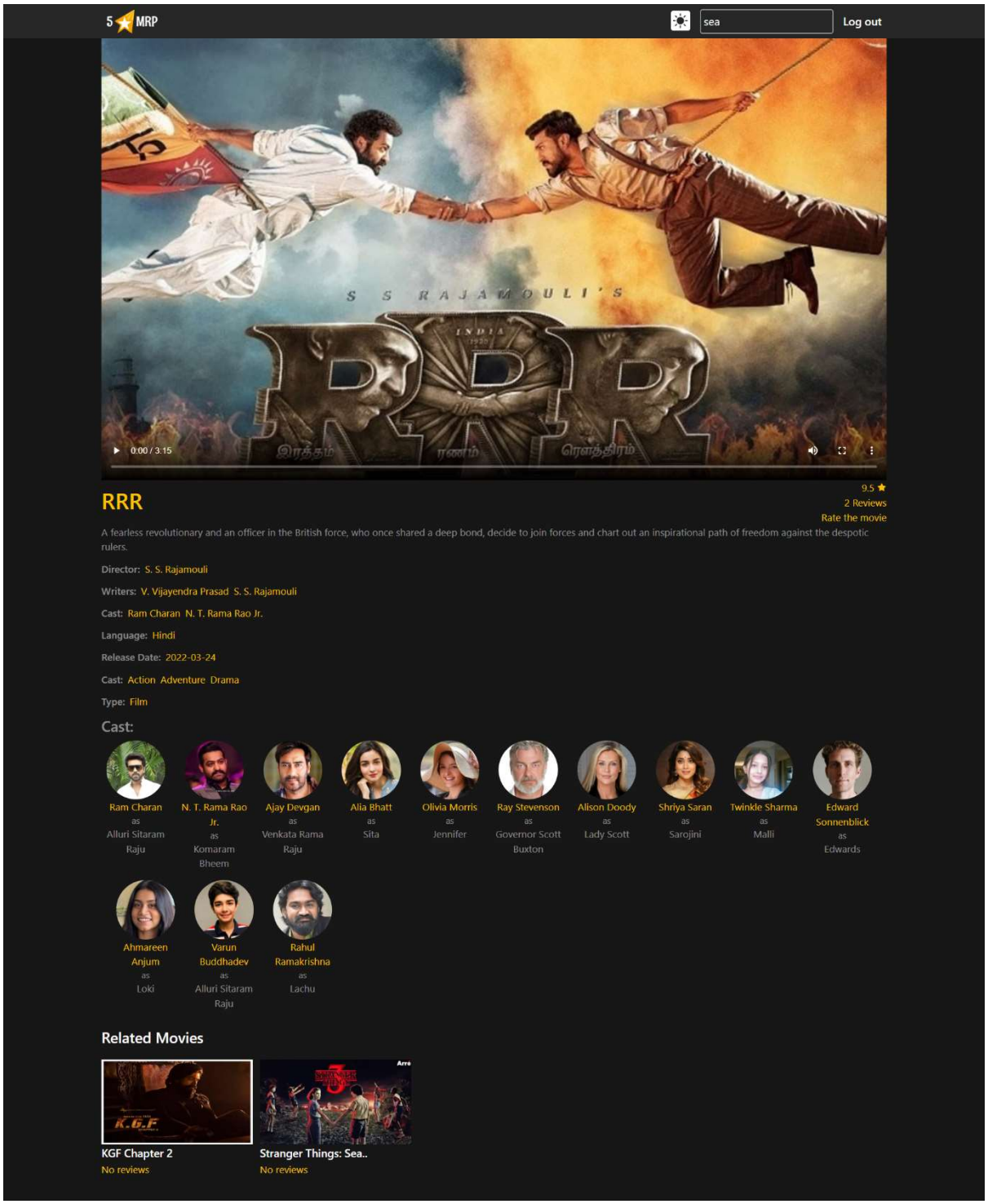
Enter OTP page

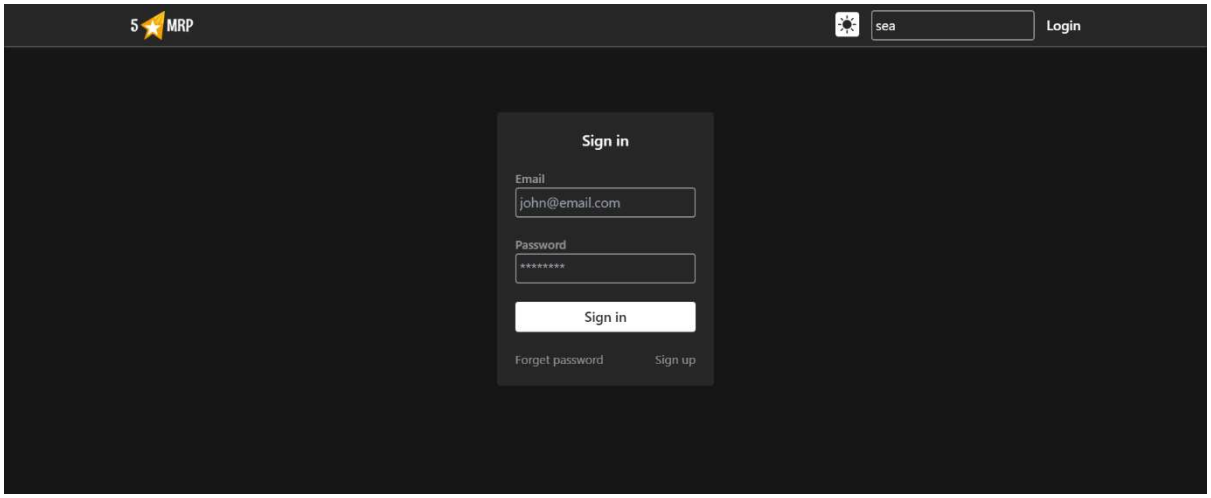


Specific movie page



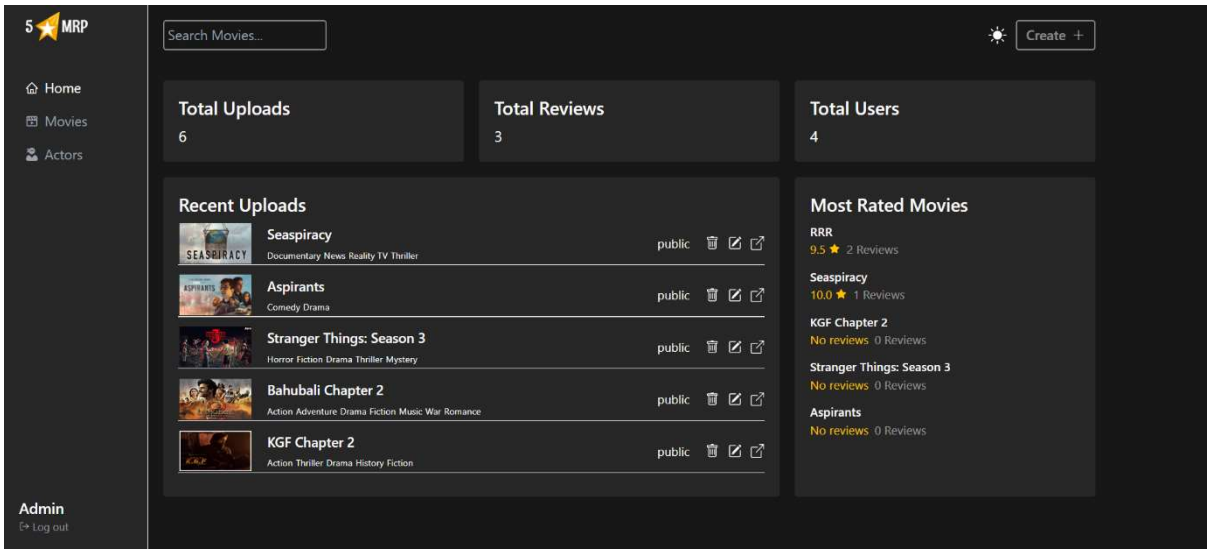
User side(Dark Theme)



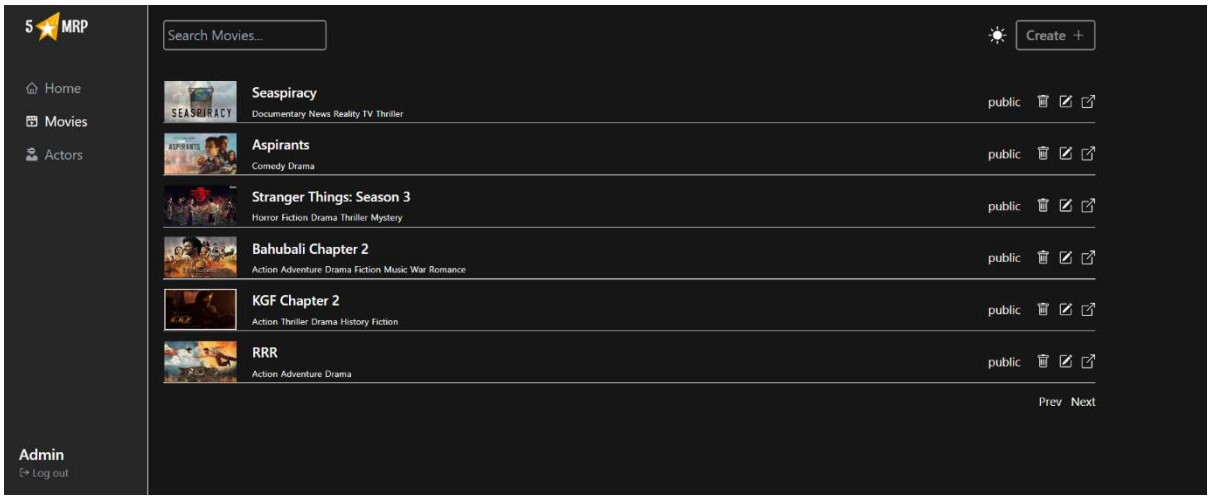

5 MRP
sea
Login
Sign in
Email
john@email.com
Password
****
Sign in
Forget password
Sign up

Administrator side(Dark Theme)

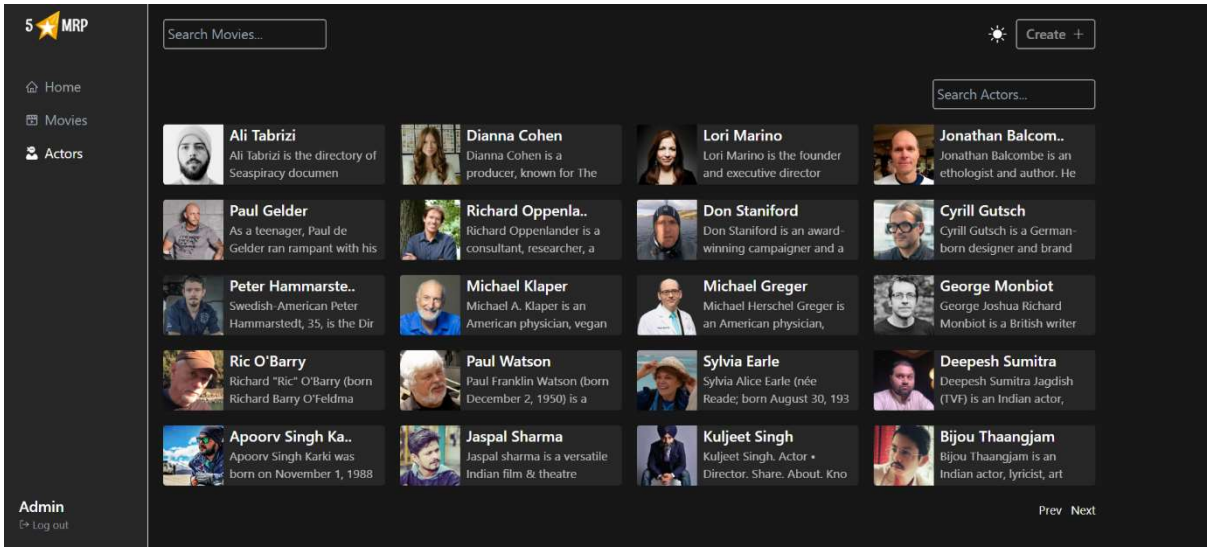
Home page



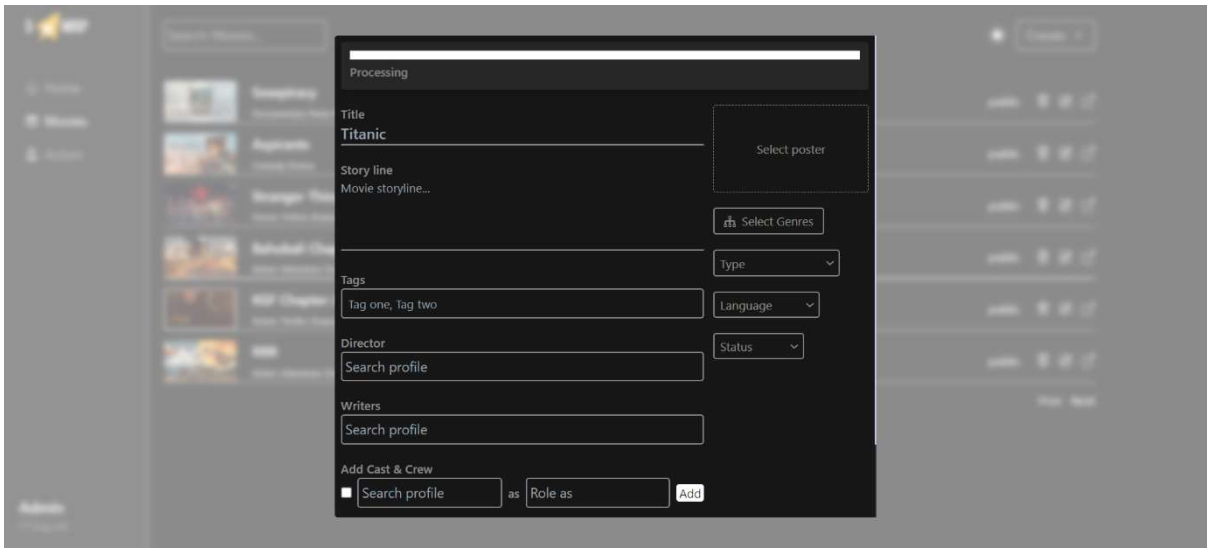
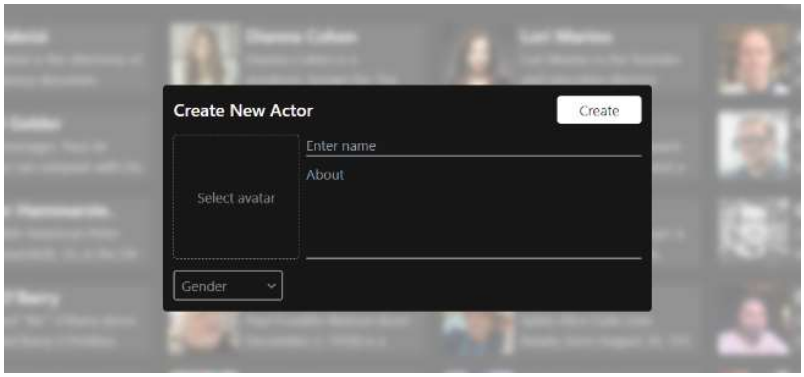
Movies page



Film crew and actor page



Create movie page



Create actor page