~ CSC 337 - Web Development Project Report ~

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Introduction

Movie Addicts is a full-stack web application for movie lovers to share their opinions, discover films, and view ratings from others. The purpose of this project was to develop an interactive, database-driven, and aesthetically pleasing website that supports user accounts, persistent data storage, and dynamic page rendering that updates the website in real time based on user or admin interactions.

The website includes a homepage highlighting currently trending and admin endorsed films, a movie catalog with user-submitted reviews, and user authentication features. Users can create accounts, and submit reviews when logged in, while unregistered users will be restricted to browse and read-only.

Motivation

The team generated incentive by deciding on a project centered around a topic that all group members enjoy and could contribute creatively to. Several ideas were proposed, including a pizza-ordering website and a fitness tracking platform. Ultimately, Group 7 unanimously decided on a cinematography-based application.

The chosen theme aligns with the team's common interest and allows for implementations of meaningful real-world features such as user authentication, database management, interactive user interfaces, while also remaining intuitive and visually appealing.

Note:

The team had a meeting November 28th, 2025 with the goal of deciding the project theme, creating an accessible repository, and assigning tasks. The provided link below is the notes that were taken during the meeting.

The Generated Ideas

Modules and Systems Architecture

The application follows a modular client-server architecture.

Github Repository Link:

https://github.com/Daniel-Northcott/Web-Programming-Project/tree/main

- ➔ **Frontend**
  - ◆ DHTML pages
  - ◆ CSS for efficient and consistent styling, layout, and responsiveness
  - ◆ JavaScript used for managing form submissions, authentication, and Document Object Model updates
  - ◆ Fetch API for communicating with backend endpoints
- ➔ **Backend**
  - ◆ Express.js server takes care of routing and HTTP requests
  - ◆ RESTful API endpoints manage authentication, movie retrieval, and review submissions
  - ◆ Middleware handle JSON parsing and file uploads
- ➔ **Database**
  - ◆ MongoDB for persistent data storage
  - ◆ Mongoose creates schemas for users, movies, and reviews
  - ◆ Relationships link reviews to their appropriate movies and users

Functionalities

The following key features and workflows supported by Movie Addicts:

- **Users can**
    - browse a catalog of movies without having to register and log in
    - log in or create new accounts
    - log out at any time
- **Reviews**
    - can only be submitted by logged in users
    - are associated with specific movies and users
- **Admin Page**
    - is only accessible to admins
    - Allows admins to add and remove movies and reviews

- User sessions are managed by browser local storage
- Uploaded Movies and Reviews persist through a MongoDB database
- Contact Page allows users to submit feedback or issues

The core functionalities are centered around maintaining usability for both unregistered and registered users, while also ensuring controlled access.

Technical Details

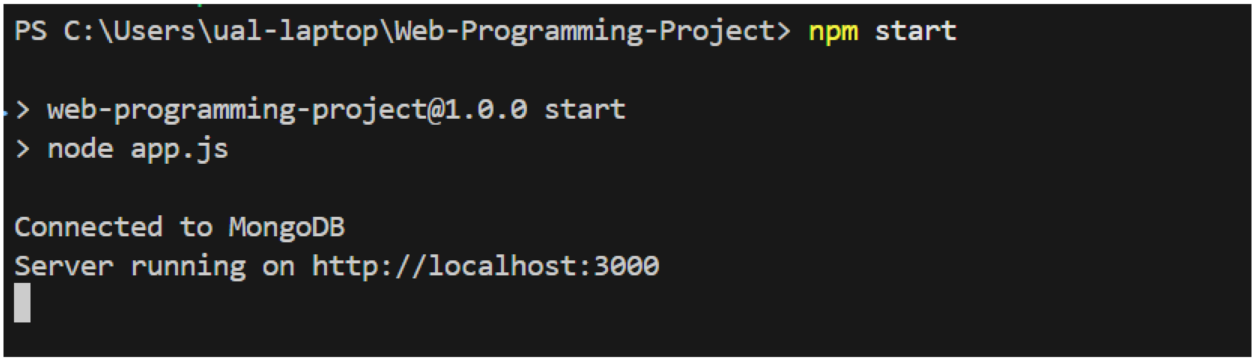
- **Technologies used**
  - Node.js
  - Express.js
  - MongoDB with Mongoose
  - HTML / CSS
  - JavaScript
  - bcryptjs for password hashing
  - multer for file uploads
  - dotenv for environment configuration
- **Development Tools**
  - Visual Studio Code
  - GitHub for version control and collaboration
    - Git Bash for efficient and consistent command-line interface
  - Nodemon for live server reloading during website development

➔ **Running the Application**

- MongoDB is connected via the VS Code terminal
  - have Node.js, database-tools and community server installed
- Use the following commands in the terminal:
  - npm run restore
  - npm start
- Save and connect **localhost:27017** in MongoDB Compass
- Look at web application via **http://localhost:3000**

Note:

A successful run will result in the following output:



```
PS C:\Users\ual-laptop\Web-Programming-Project> npm start

> web-programming-project@1.0.0 start
> node app.js

Connected to MongoDB
Server running on http://localhost:3000
```

User Authentication and Session Handling

User authentication is handled by backend API routes that validate credentials stored in MongoDB. User's passwords are hashed before storing the user's information. Once authenticated, the username is saved in browser local storage, allowing the frontend to maintain session state across pages.

Users logging out will result in the clearing of stored session data as a means to prevent unauthorized access.

Challenges and Collaboration

One of the primary challenges faced by the group was coordinating across multiple contributors in an online environment. Different local environments and merge complexity initially caused issues.

To overcome this, the team

- used a Github repository
- Installed VS Code extensions such as GitLens and Prettier
- Downloaded MongoDB Database Tools and Community Server msi
- used CSC 337's code formatting and included explanation comments
- Communicated frequently and with transparency to resolve conflicts and strengthen team morale through Messages

Task Distribution:

In this project we split up the tasks as follows:

Daniel Northcott: Worked on the catalog page, including the database set up. Daniel did the scripting to allow the database to be restored and duplicated from the mongoDB. He created the login page along with the admin page which allows the administrator to add/edit movies in the catalog. The admin page also allows the administrator to view user statistics. This directly accesses the database. Daniel created the codebase in github and shared it with the team as well.

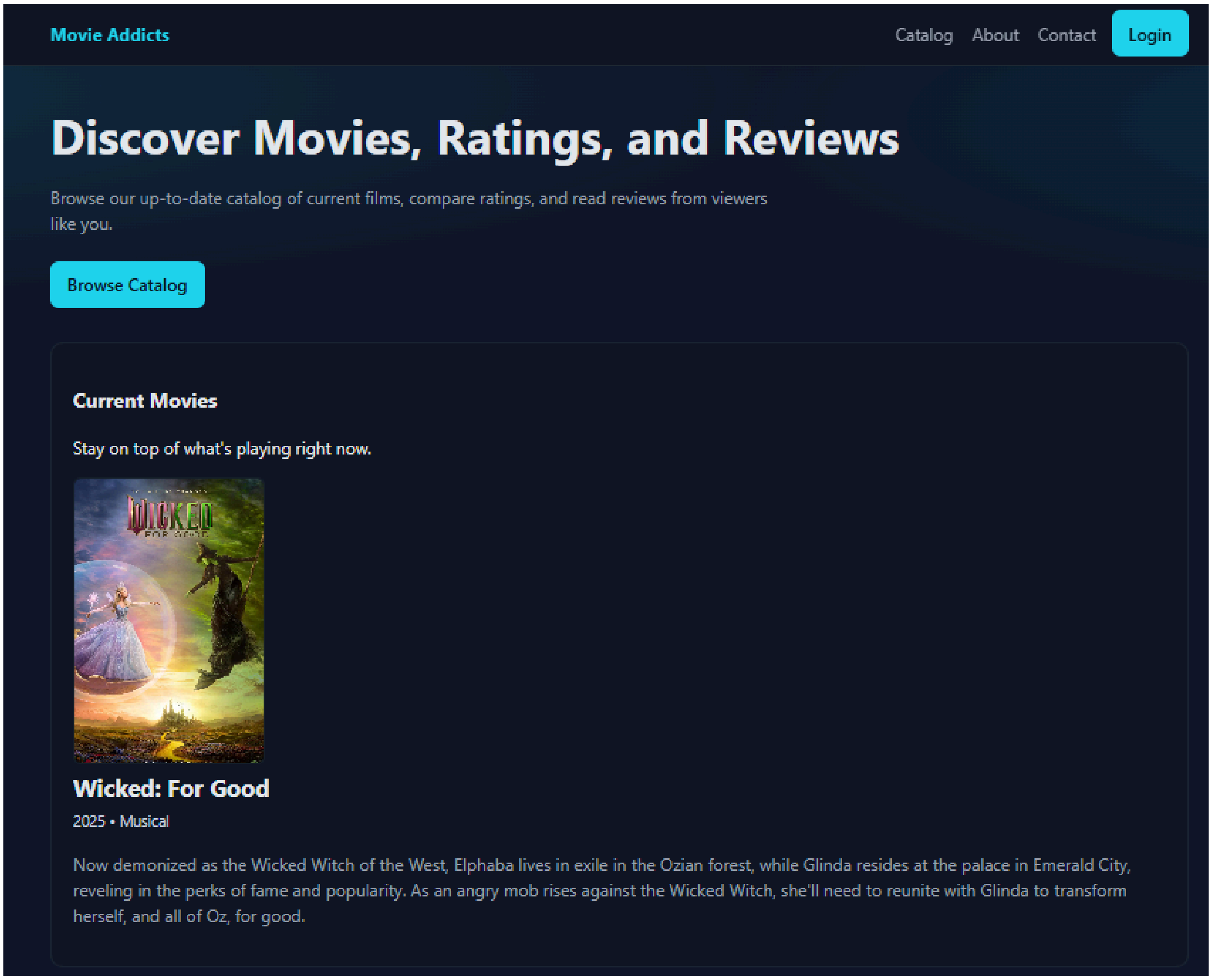
Daniel assisted Max with the homepage as well. He worked on the screenshots and demonstration part of the report as well as the task distribution section.

Max Lopez: Worked on the contacted page, along with the module required to make the page functional. In addition, the home page was his responsibility. He added the featured movies, and is currently airing movies from the database into the home page. Finally, he turned the style from the home page into a css file for the rest of the team to use for a consistent look for the web site.

Ana Le: Worked on the front end of the contact page. She provided movies for the catalog. In addition she played a major role in the project documentation, compiling and organizing the team's cumulative efforts into a cohesive and well-structured report. She was instrumental in shaping the project's module plans and supporting the development and refinement of the application's core idea.

Screenshots & Demonstration:

The home page displays the current movies in theaters and the top picks from the administrators.



Discover Movies, Ratings, and Reviews

Browse our up-to-date catalog of current films, compare ratings, and read reviews from viewers like you.

Current Movies

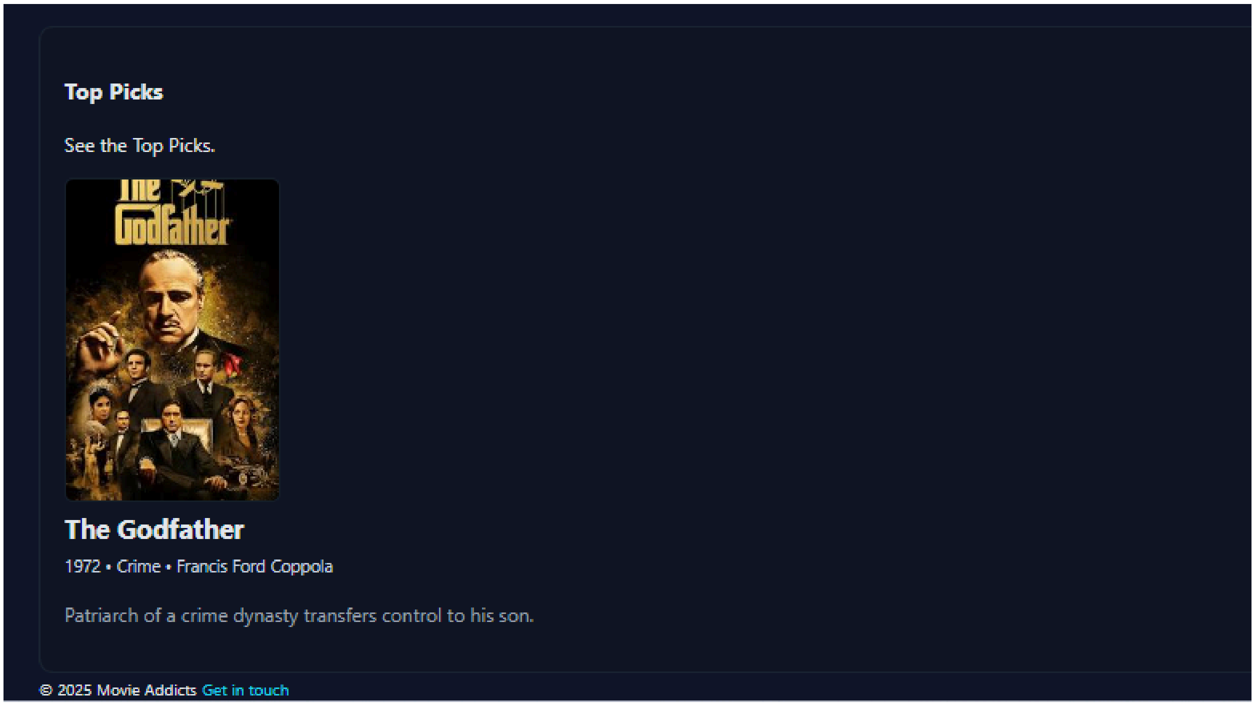
Stay on top of what's playing right now.

Wicked: For Good

2025 • Musical

Now demonized as the Wicked Witch of the West, Elphaba lives in exile in the Ozian forest, while Glinda resides at the palace in Emerald City, reveling in the perks of fame and popularity. As an angry mob rises against the Wicked Witch, she'll need to reunite with Glinda to transform herself, and all of Oz, for good.

Figure 1: (Home Page) Current Movies.



Top Picks

See the Top Picks.

The Godfather

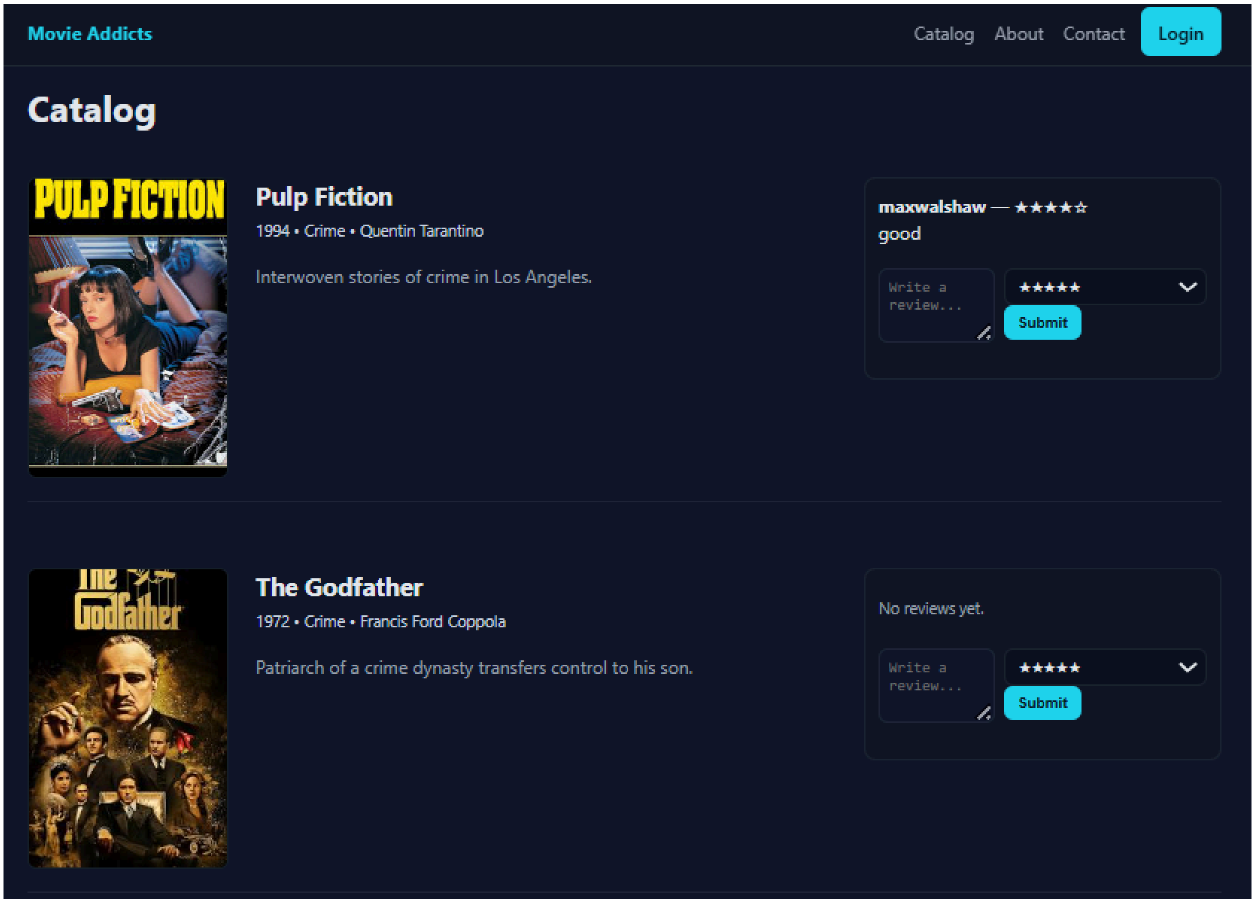
1972 • Crime • Francis Ford Coppola

Patriarch of a crime dynasty transfers control to his son.

© 2025 Movie Addicts Get in touch

Figure 2: (Home Page) The top picks are at the bottom of the home page.

The catalog page consists of the movies that are currently available in the database. This page also includes the area for reviews and ratings. You must be logged in to make a review:



Catalog

Pulp Fiction

1994 • Crime • Quentin Tarantino

Interwoven stories of crime in Los Angeles.

maxwalshaw — ★★★★☆

good

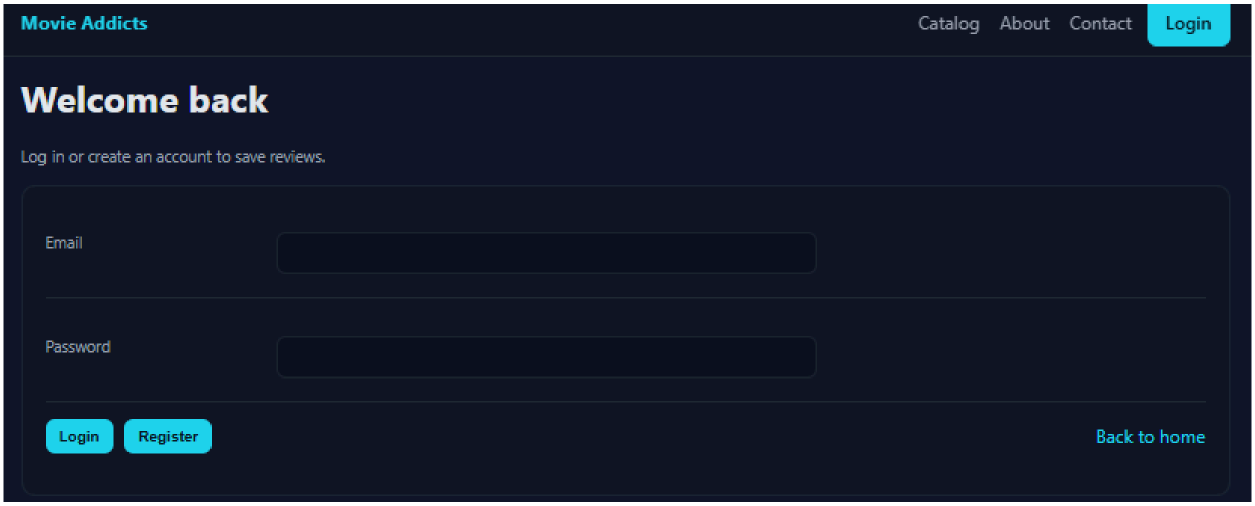
The Godfather

1972 • Crime • Francis Ford Coppola

Patriarch of a crime dynasty transfers control to his son.

No reviews yet.

Figure 3: (Catalog Page) Contains the current movies in the catalog.

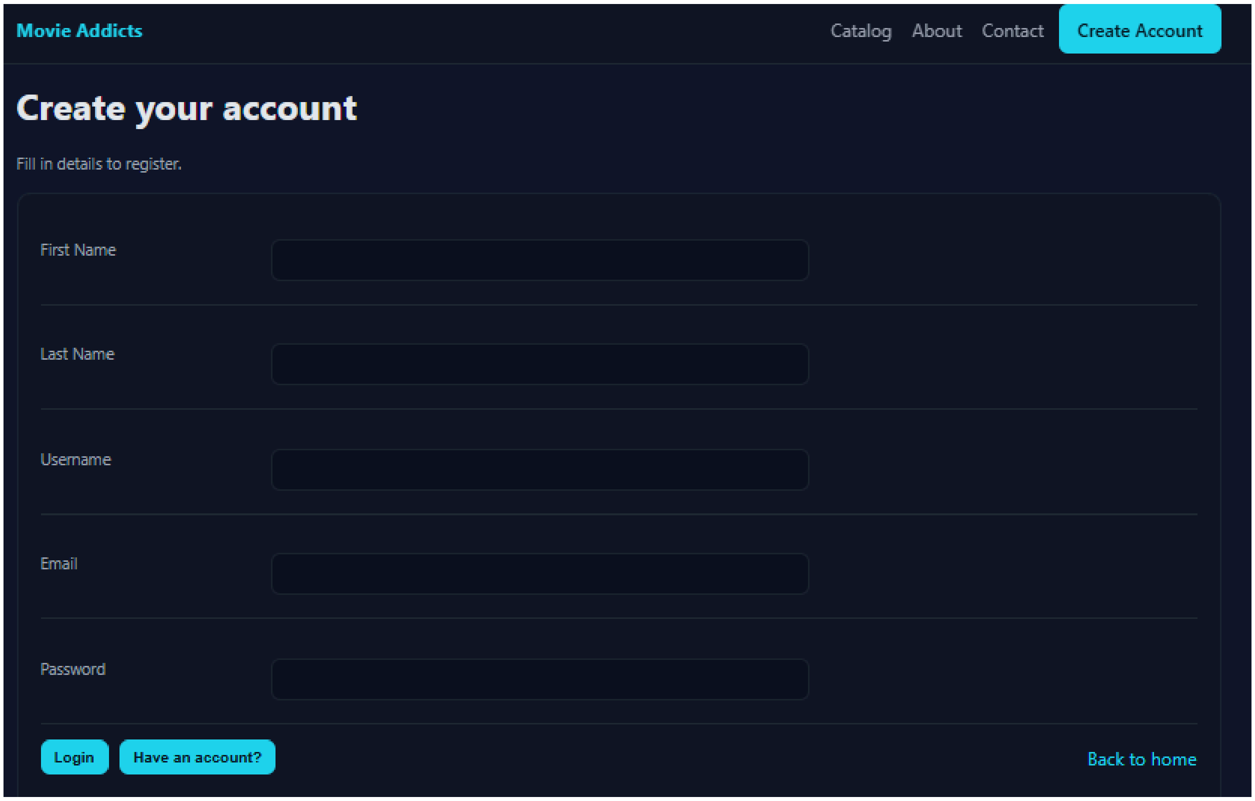


Welcome back

Log in or create an account to save reviews.

Email

Password



Create your account

Fill in details to register.

First Name

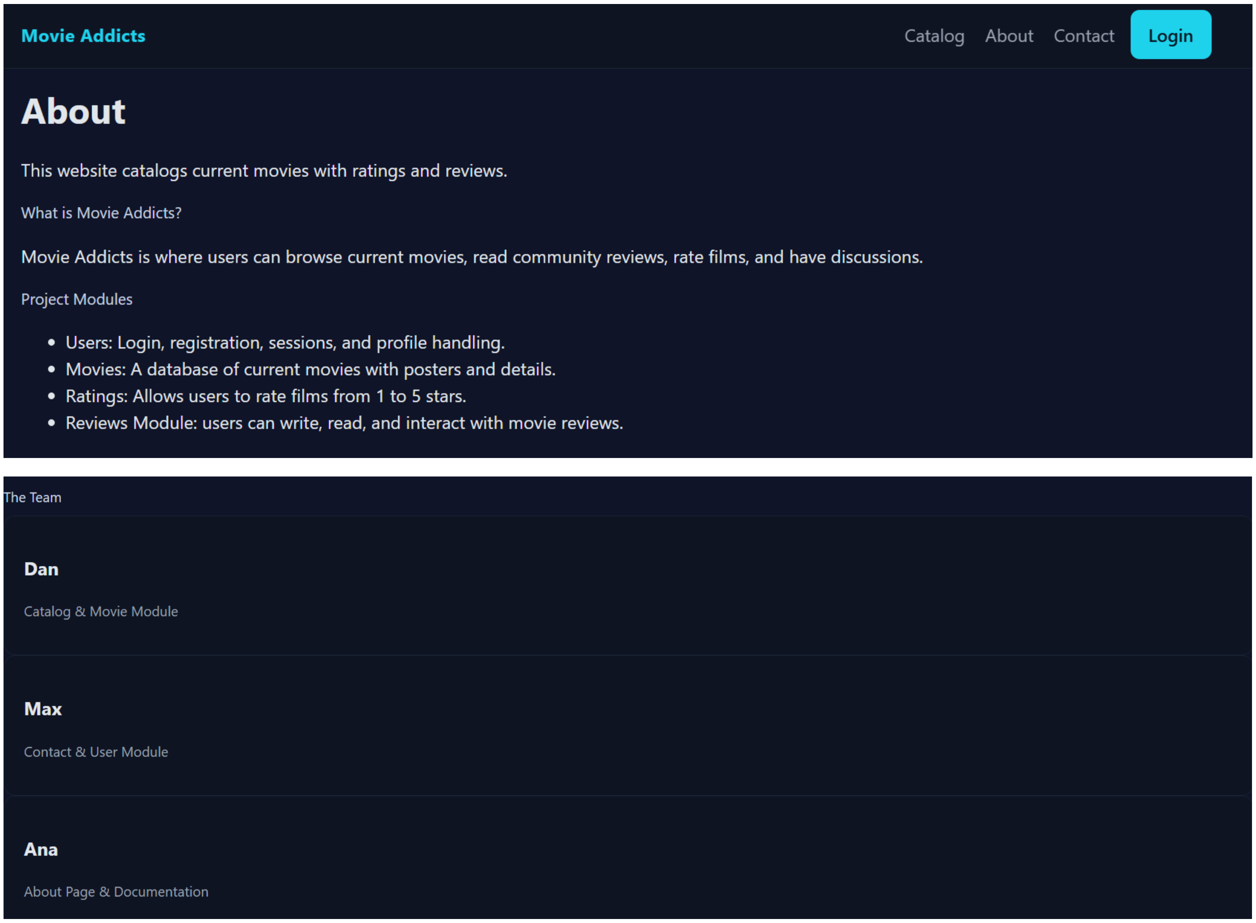
Last Name

Username

Email

Password

Figure 4&5: (Login Page) Contains the login information and registration if needed.



About

This website catalogs current movies with ratings and reviews.

What is Movie Addicts?

Movie Addicts is where users can browse current movies, read community reviews, rate films, and have discussions.

Project Modules

- Users: Login, registration, sessions, and profile handling.
- Movies: A database of current movies with posters and details.
- Ratings: Allows users to rate films from 1 to 5 stars.
- Reviews Module: users can write, read, and interact with movie reviews.

The Team

Dan

Catalog & Movie Module

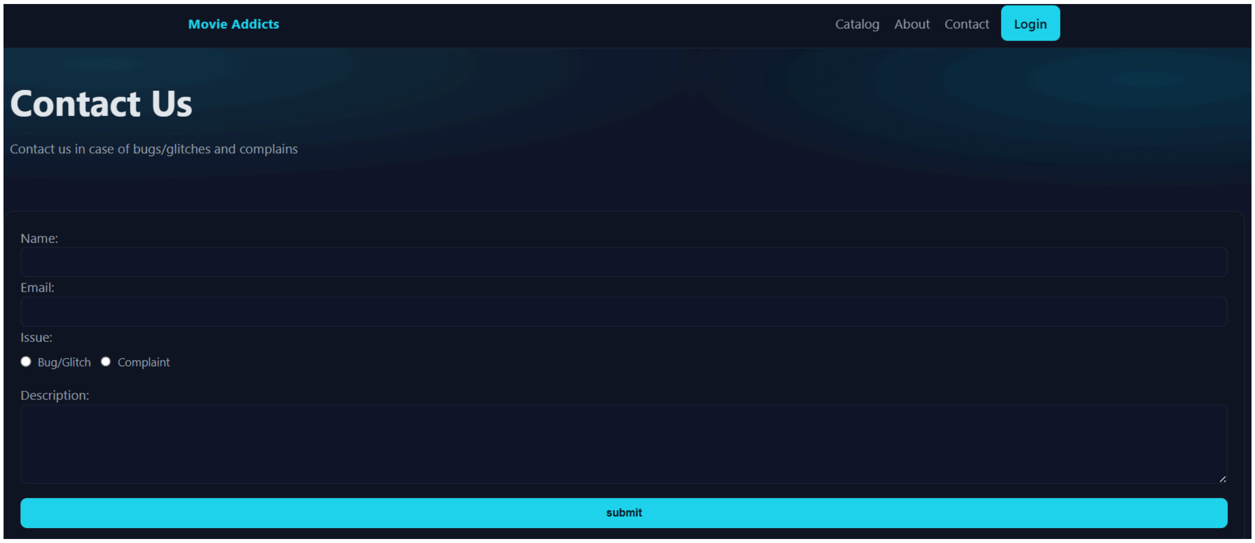
Max

Contact & User Module

Ana

About Page & Documentation

Figure 6 & 7: (About Page) Contains the about page, giving the purpose of the website and the team who has worked on it.



Contact Us

Contact us in case of bugs/glitches and complains

Name:

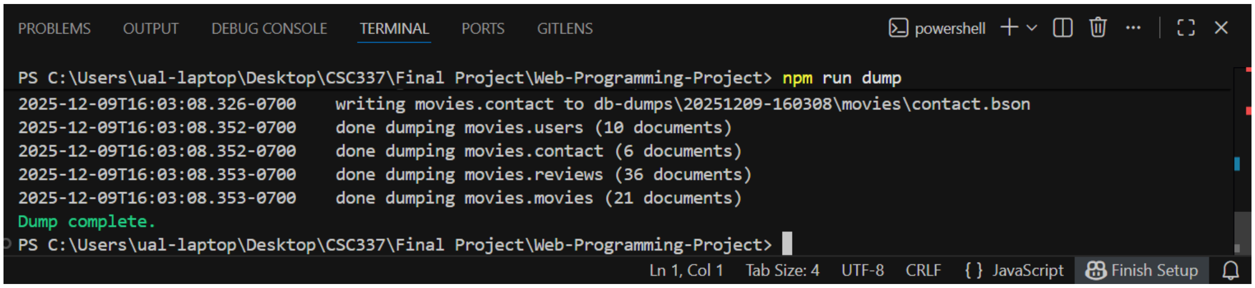
Email:

Issue:

○ Bug/Glitch ○ Complaint

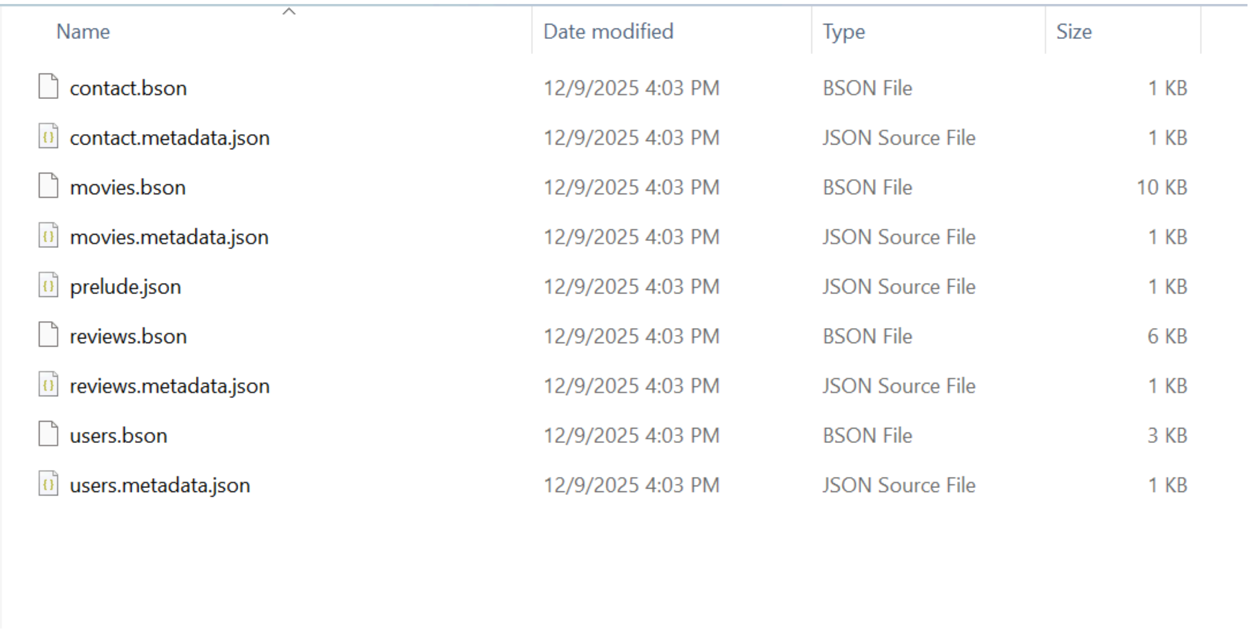
Description:

Figure 8: (Contact Page) Contains the contact information where users can submit a complaint or glitch in the website. This is then uploaded to the mongoDB.



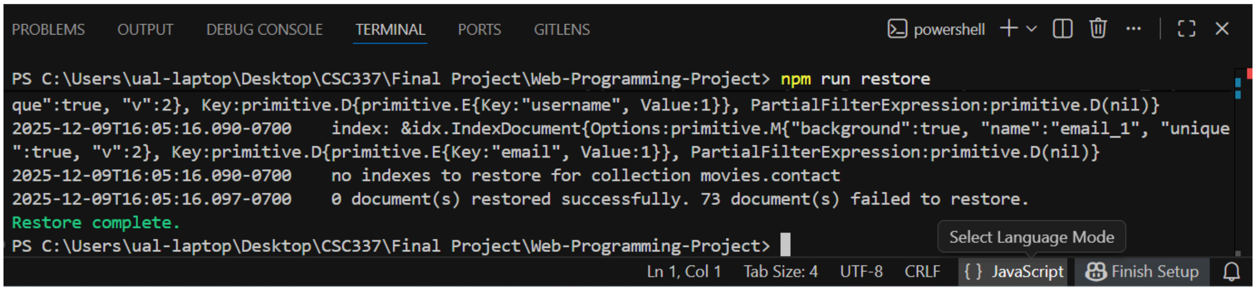
```
PS C:\Users\ual-laptop\Desktop\CSC337\Final Project\Web-Programming-Project> npm run dump
2025-12-09T16:03:08.326-0700    writing movies.contact to db-dumps\20251209-160308\movies\contact.bson
2025-12-09T16:03:08.352-0700    done dumping movies.users (10 documents)
2025-12-09T16:03:08.352-0700    done dumping movies.contact (6 documents)
2025-12-09T16:03:08.353-0700    done dumping movies.reviews (36 documents)
2025-12-09T16:03:08.353-0700    done dumping movies.movies (21 documents)
Dump complete.
PS C:\Users\ual-laptop\Desktop\CSC337\Final Project\Web-Programming-Project>
```

Figure 9: (dumping the database) By running 'npm run dump' we can dump the content of the data base into a folder



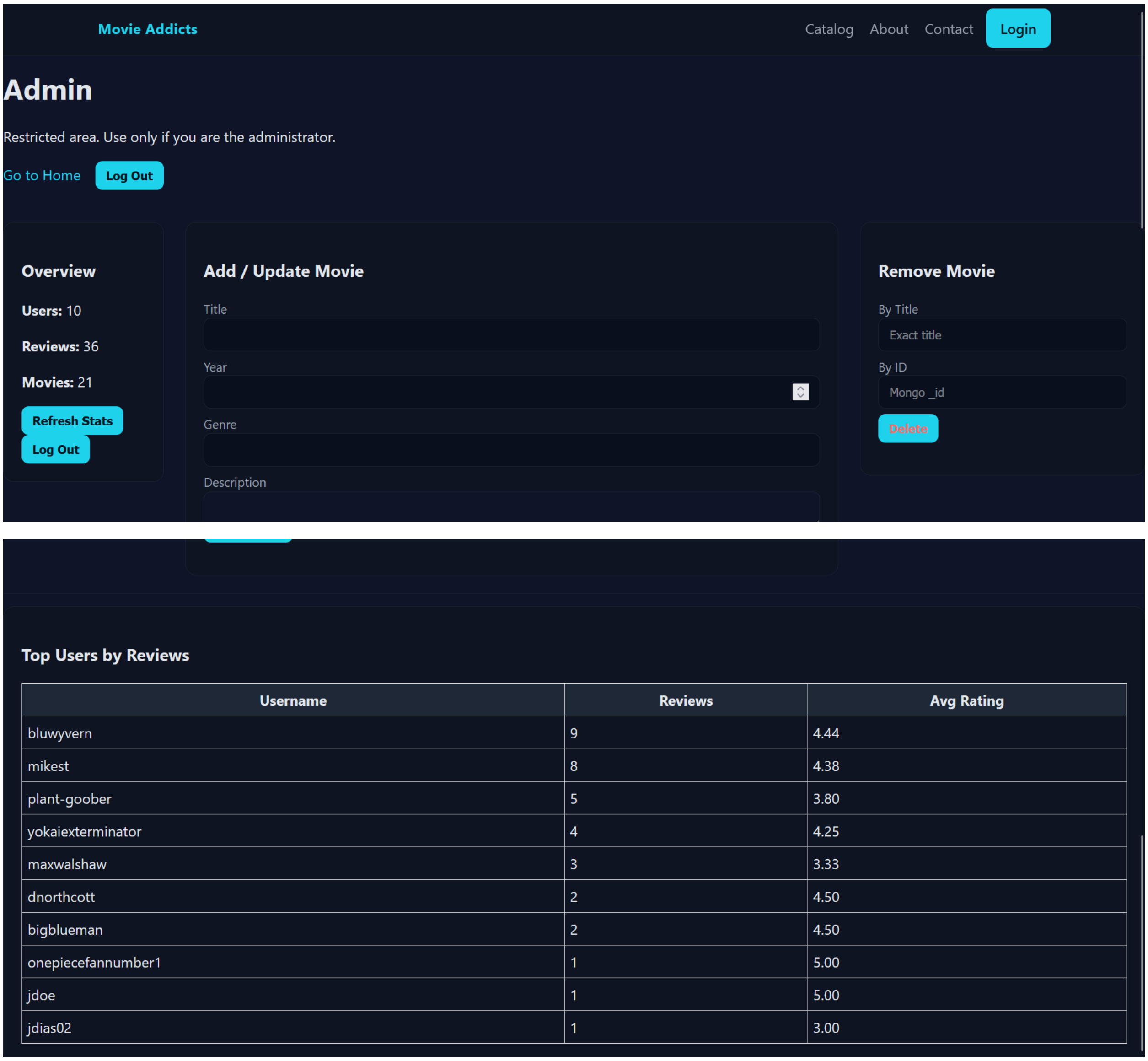
Name	Date modified	Type	Size
contact.bson	12/9/2025 4:03 PM	BSON File	1 KB
contact.metadata.json	12/9/2025 4:03 PM	JSON Source File	1 KB
movies.bson	12/9/2025 4:03 PM	BSON File	10 KB
movies.metadata.json	12/9/2025 4:03 PM	JSON Source File	1 KB
prelude.json	12/9/2025 4:03 PM	JSON Source File	1 KB
reviews.bson	12/9/2025 4:03 PM	BSON File	6 KB
reviews.metadata.json	12/9/2025 4:03 PM	JSON Source File	1 KB
users.bson	12/9/2025 4:03 PM	BSON File	3 KB
users.metadata.json	12/9/2025 4:03 PM	JSON Source File	1 KB

Figure 10: (Database file) This is one of the folder in which the database has been dumped into



```
PS C:\Users\ual-laptop\Desktop\CSC337\Final Project\Web-Programming-Project> npm run restore
que":true, "v":2}, Key:primitive.D{primitive.E{Key:"username", Value:1}}, PartialFilterExpression:primitive.D(nil)}
2025-12-09T16:05:16.090-0700    index: &idx.IndexDocument{Options:primitive.M{"background":true, "name":"email_1", "unique
":true, "v":2}, Key:primitive.D{primitive.E{Key:"email", Value:1}}, PartialFilterExpression:primitive.D(nil)}
2025-12-09T16:05:16.090-0700    no indexes to restore for collection movies.contact
2025-12-09T16:05:16.097-0700    0 document(s) restored successfully. 73 document(s) failed to restore.
Restore complete.
PS C:\Users\ual-laptop\Desktop\CSC337\Final Project\Web-Programming-Project>
```

Figure 11: (Restoring the database) npm run restore can be runned in vscode to take the latest dump, and uploaded into the database, restoring it.



Admin

Restricted area. Use only if you are the administrator.

Overview

Users: 10

Reviews: 36

Movies: 21

Add / Update Movie

Remove Movie

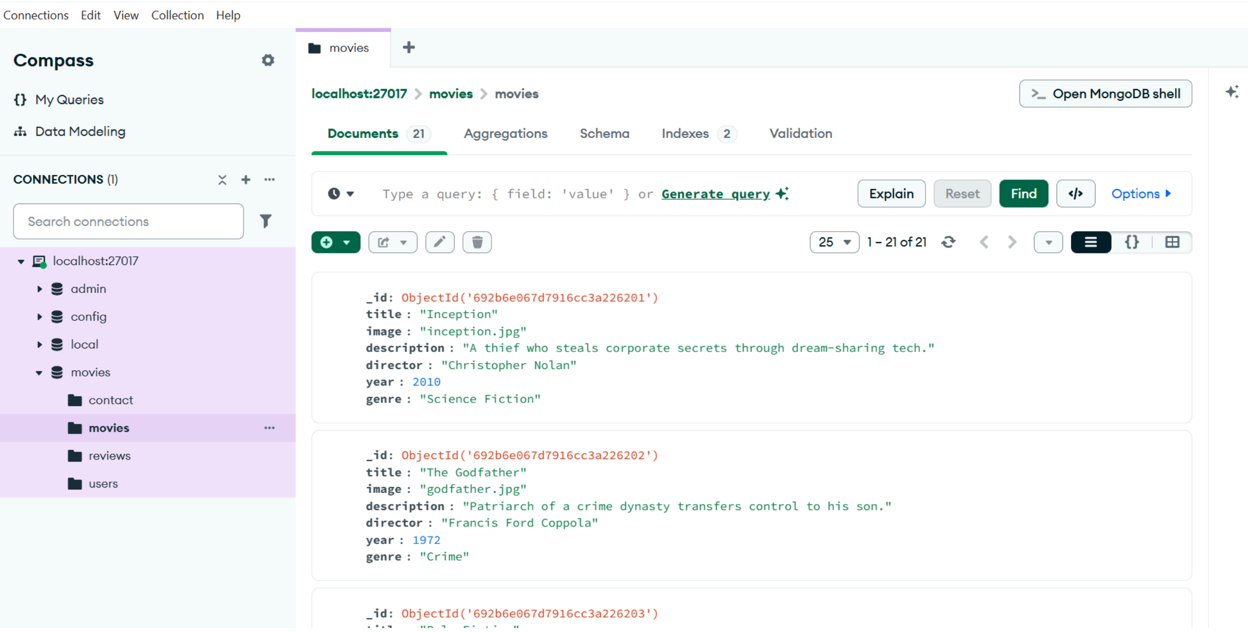
Top Users by Reviews

Username	Reviews	Avg Rating
bluwyvern	9	4.44
mikest	8	4.38
plant-goober	5	3.80
yokaiexterminator	4	4.25
maxwalshaw	3	3.33
dnorthcott	2	4.50
bigblueman	2	4.50
onepiecefannumber1	1	5.00
jdoe	1	5.00
jdias02	1	3.00

Figure 12 & 13: (Admin page) This is the admin page, it serves as a place to look at the users and user’s data. In addition, it serves the functionality of adding and deleting movies from the database

Additional Materials

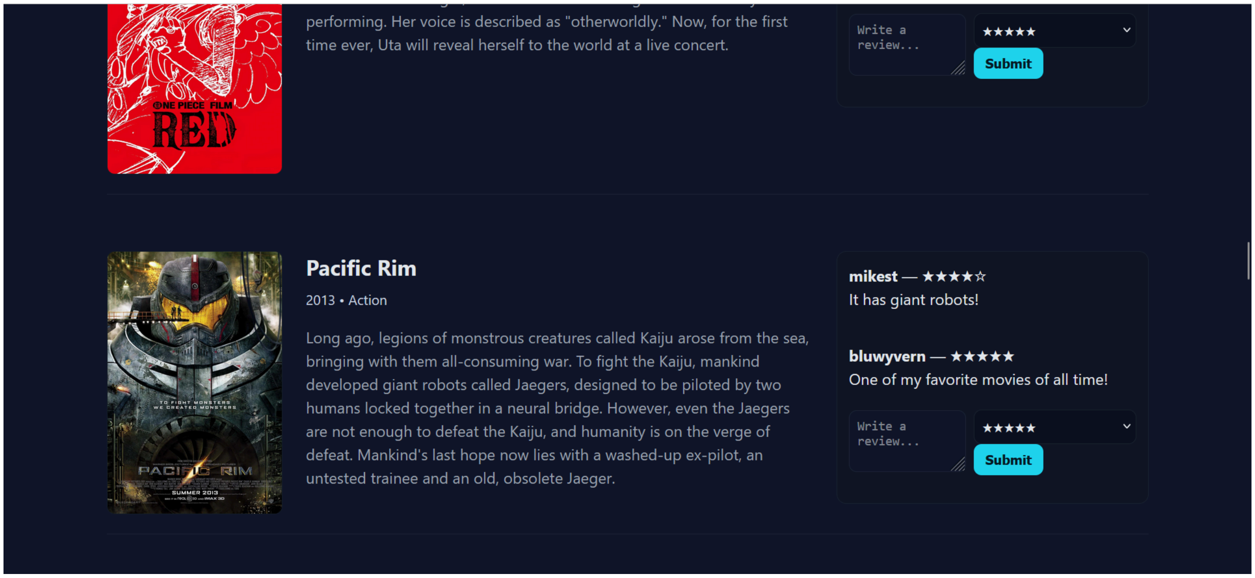
- Video Demo https://youtu.be/GX3jUXuwspU
- Screenshots:



```
_id: ObjectId('692b6e067d7916cc3a226201')
title : "Inception"
image : "inception.jpg"
description : "A thief who steals corporate secrets through dream-sharing tech."
director : "Christopher Nolan"
year : 2010
genre : "Science Fiction"

_id: ObjectId('692b6e067d7916cc3a226202')
title : "The Godfather"
image : "godfather.jpg"
description : "Patriarch of a crime dynasty transfers control to his son."
director : "Francis Ford Coppola"
year : 1972
genre : "Crime"

_id: ObjectId('692b6e067d7916cc3a226203')
```



performing. Her voice is described as "otherworldly." Now, for the first time ever, Uta will reveal herself to the world at a live concert.

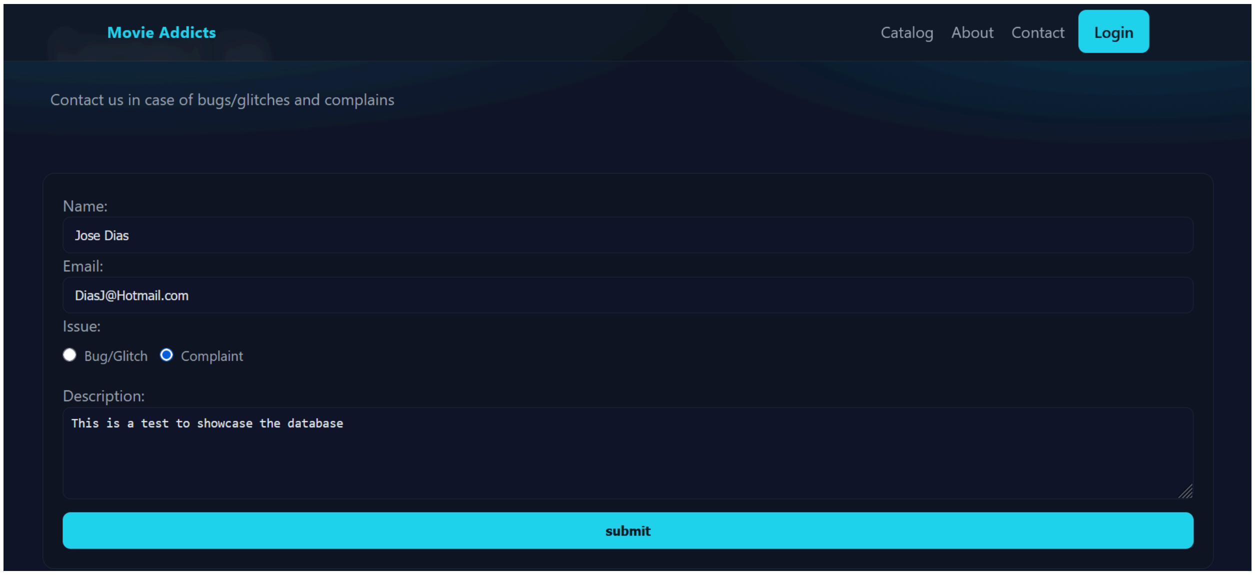
Pacific Rim

2013 • Action

Long ago, legions of monstrous creatures called Kaiju arose from the sea, bringing with them all-consuming war. To fight the Kaiju, mankind developed giant robots called Jaegers, designed to be piloted by two humans locked together in a neural bridge. However, even the Jaegers are not enough to defeat the Kaiju, and humanity is on the verge of defeat. Mankind's last hope now lies with a washed-up ex-pilot, an untested trainee and an old, obsolete Jaeger.

mikest — ★★★★☆
It has giant robots!

bluwyvern — ★★★★★
One of my favorite movies of all time!



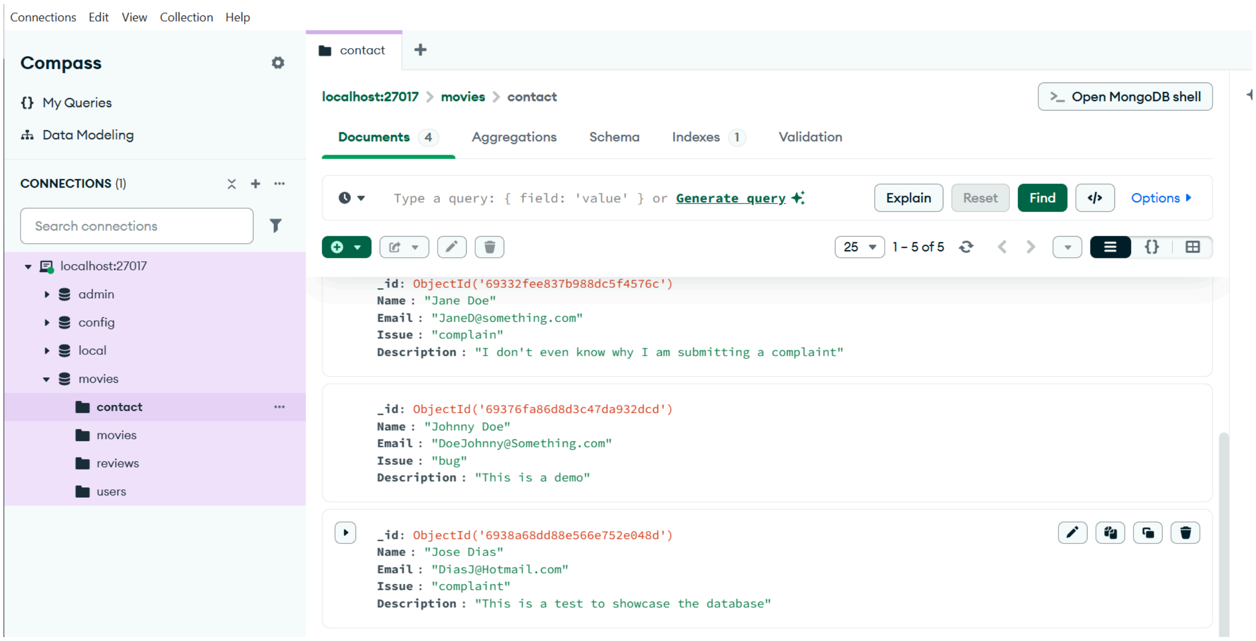
Contact us in case of bugs/glitches and complains

Name:
Jose Dias

Email:
DiasJ@Hotmail.com

Issue:
○ Bug/Glitch ● Complaint

Description:
This is a test to showcase the database



```
_id: ObjectId('69332fee837b988dc5f4576c')
Name : "Jane Doe"
Email : "JaneD@something.com"
Issue : "complain"
Description : "I don't even know why I am submitting a complaint"

_id: ObjectId('69376fa86d8d3c47da932dcd')
Name : "Johnny Doe"
Email : "DoeJohnny@Something.com"
Issue : "bug"
Description : "This is a demo"

_id: ObjectId('6938a68dd88e566e752e048d')
Name : "Jose Dias"
Email : "DiasJ@Hotmail.com"
Issue : "complaint"
Description : "This is a test to showcase the database"
```

- GitHub Repository

Conclusion

Movie Addicts is a website that demonstrates full-stack web development principles taught in CSC 337. The project integrates Dynamic HyperText Markup Language, making a cohesive and functional application for users. As a result of the project, the team gained experience working collaboratively with developing a real-world web application from start to finish.