Movie Database Final Report

Elise May & Nicole Chu

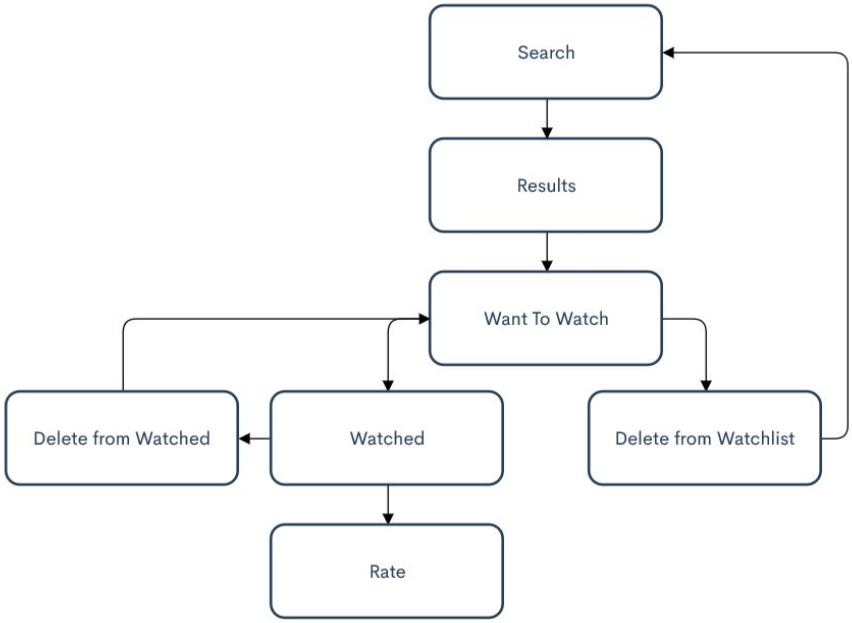
The Problem to Address

Streaming services for movie-watching have become a staple in the modern world. Each service, however, is limited to its own catalog of movies, forcing users to traverse various accounts across multiple services to access the numerous movies they want to watch. This is especially tiresome for those who like to keep track of films that they have watched or would like to watch. Since these services require users to maintain multiple accounts, it is also incredibly tedious to keep a record of one's review of every movie they have seen. Netflix, one of the most popular content streaming platforms, does not even allow users to personally rate the movies they have watched as the company removed the feature in 2018. Even more so, in light of the current pandemic increasing viewership, a single sign-on seamless user experience is a gaping void in this industry with much opportunity for improvement.

Our Solution

To alleviate the problem described above, we have decided to build a movie database that allows users to search a catalog of movies and retrieve information on each film. The information includes a film's title, director, lead actor, genre, mood, average user rating, and the streaming service in which it is available. Our database also provides the functionality to track movies that users want to watch in the future, as well as movies they have already watched. Once users have watched a movie, they have the option to rate it on a scale from 1-5. Users also have the option to export a report of the movies they have watched to a csv file. This report includes all of the information they previously searched for the movies they have watched, in addition to

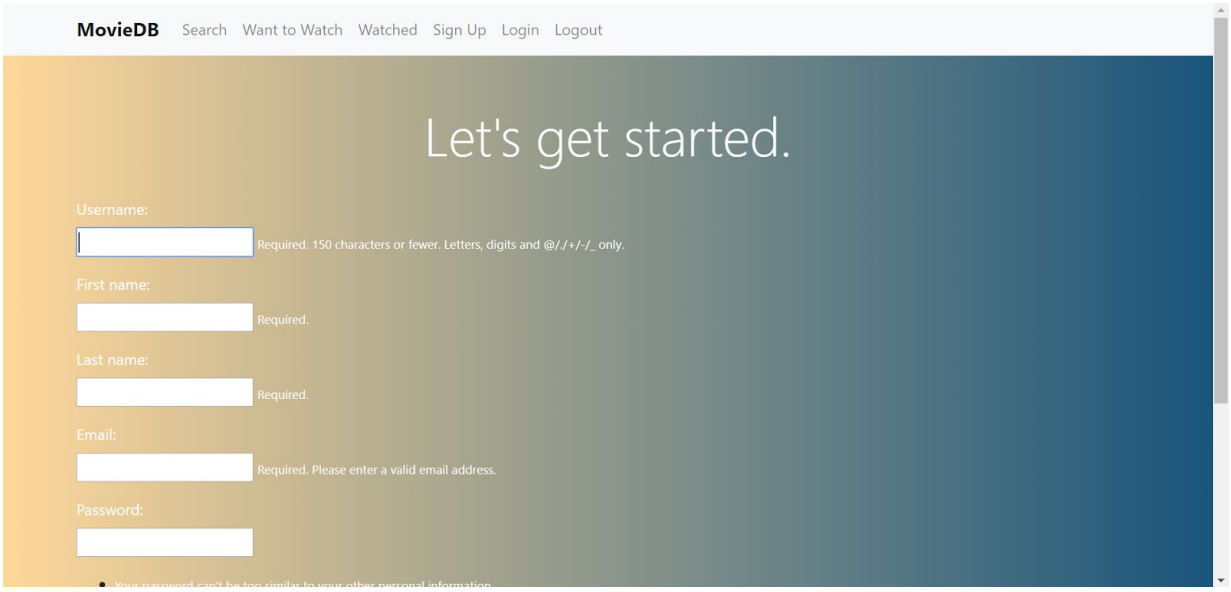
the total number of movies they have watched and their overall top rated movie. Below is a flowchart of the ideal user experience for our application:



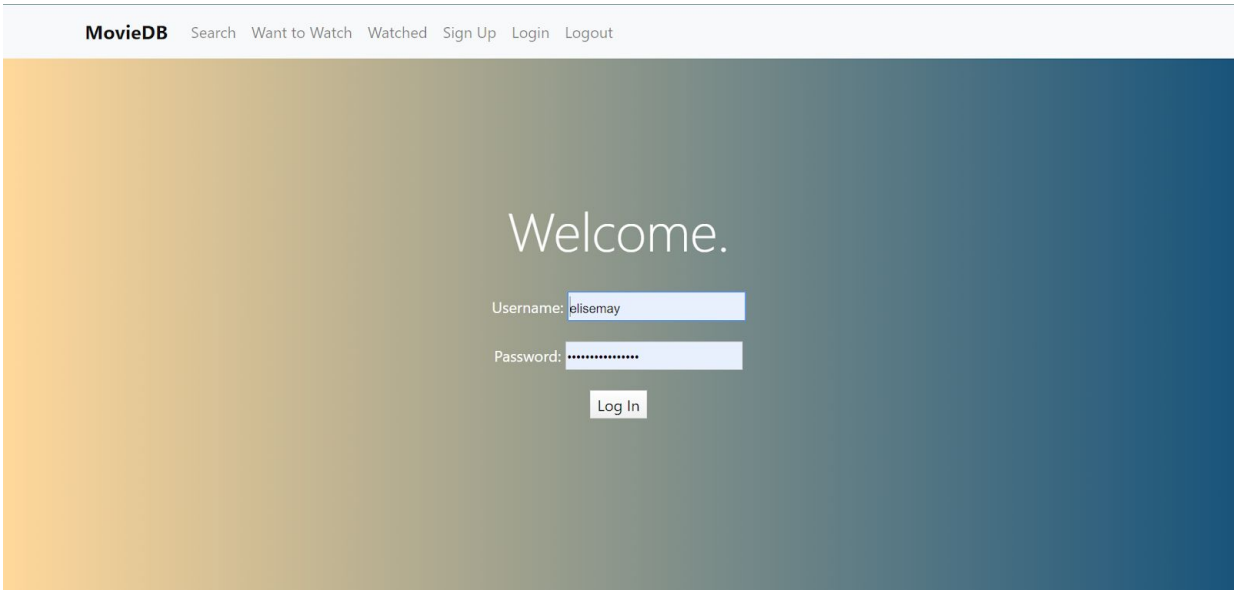
When users first enter the application, they are asked to either sign in or create an account. From there, the application allows users to search on various criteria such as movie title, genre, director, actor, streaming service, length of movie, rating, and mood. Once a search is conducted, users are taken to a Results page that displays all movies that meet the given search criteria. Relevant movie information for each film is displayed in a table. From here, users can add movies to their Watchlist. There is a navigation menu along the top of the application that allows users to toggle between the Search page, Want to Watch page, and Watched page. Inside the Want to Watch page, users can see a table of movies they have added to their watchlist. Beside each record are buttons to remove the movie from their watchlist or change the movie to watched. If the user clicks on the Watched button, they are taken to a rating page where they are asked to rate the movie on a scale from 1 to 5. They are then taken to their Watched list. The

Watched list also has buttons to remove movies from it, however, when removing films from this list, they are simply added back to your watchlist. See below for screenshots delineating these various features:

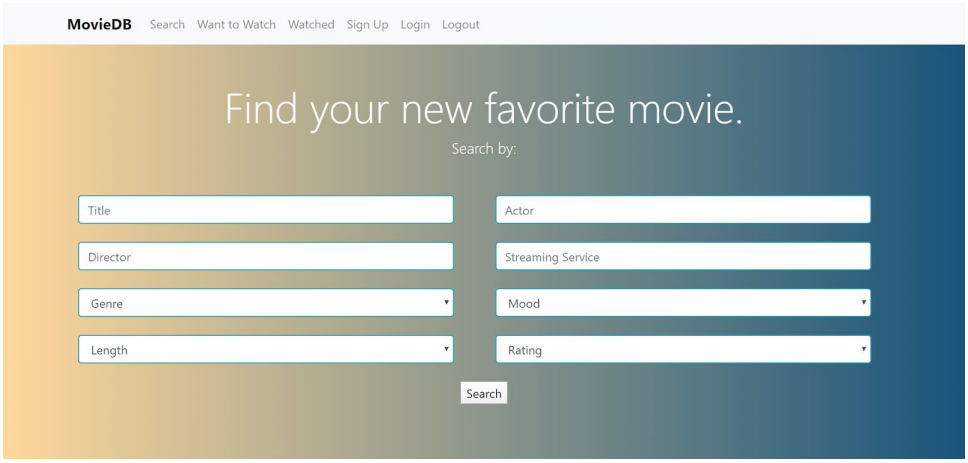
Sign-Up Screen



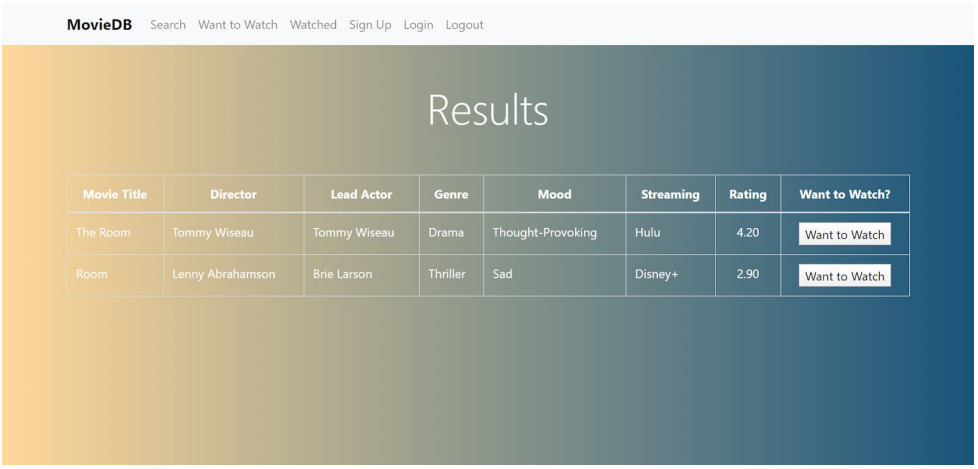
Sign-In Screen



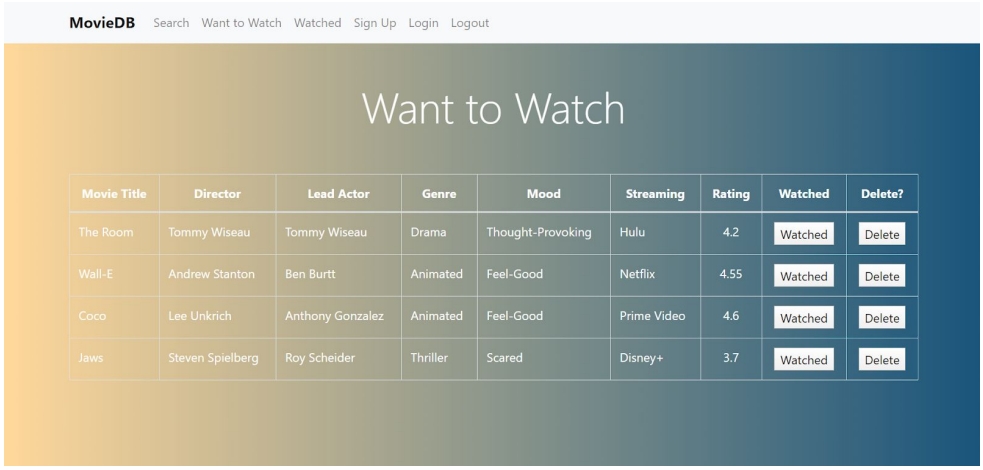
Search Screen



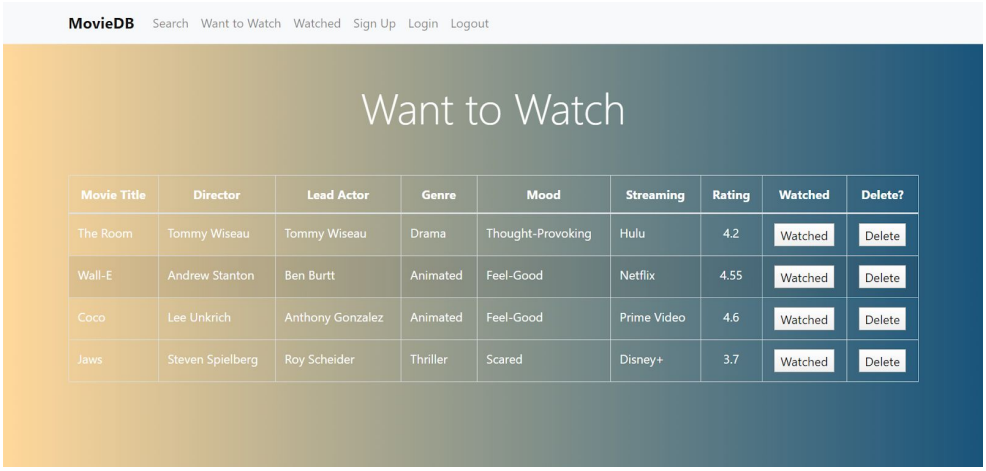
Search Results Screen (Clicked Want to Watch THE Room) … not room



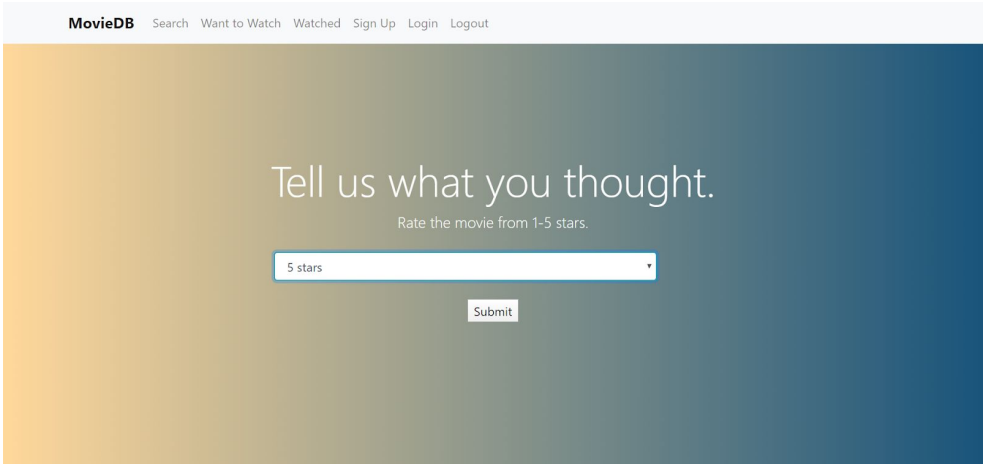
The Room was added to our Want to Watch list



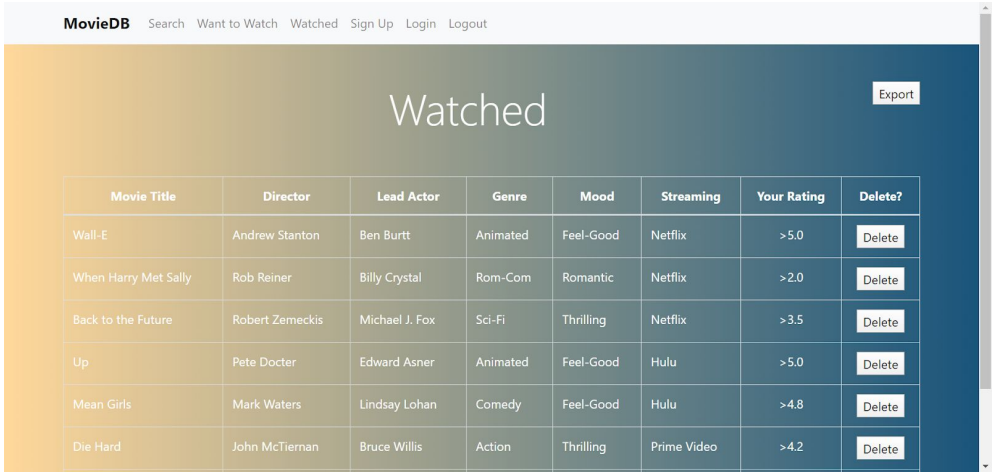
Click on Watched button for Wall-E.



Rating Page for Wall-E (I'll give it 5 stars because that little robot deserves it.)



Wall-E has been added to our Watched list with our rating of 5 stars.



Sample output of export button:

	A	B	C	D	E	F	G
1	Movie Title	Director	Lead Actor	Genre	Mood	Streaming	Your Rating
2	Wall-E	Andrew Stanton	Ben Burtt	Animated	Feel-Good	Netflix	5
3	When Harry Met Sally	Rob Reiner	Billy Crystal	Rom-Com	Romantic	Netflix	2
4	Back to the Future	Robert Zemeckis	Michael J. Fox	Sci-Fi	Thrilling	Netflix	3.5
5	Up	Pete Docter	Edward Asner	Animated	Feel-Good	Hulu	5
6	Mean Girls	Mark Waters	Lindsay Lohan	Comedy	Feel-Good	Hulu	4.8
7	Die Hard	John McTiernan	Bruce Willis	Action	Thrilling	Prime Video	4.2
8	Us	Jordan Peele	Lupita Nyongo	Horror	Scared	Disney+	4.1
9	Total Number of Movies Watched:	7					
10	Your Top Rated Movie:	Up					

Our Framework

We chose to build out our application using Django as a framework. It has an extremely straightforward architecture that supports fast-paced development. Django also has many baked-in features, such as its Login/Logout forms that automatically generate user tables for you. This was the main package that we leveraged in the development of this application. For the structure of our schema, we created three main tables that store movie information, user information, and user watchlist information. We also generated three more tables for genre, mood, and streaming service which are all referenced by foreign keys in the movie information table. To aggregate user ratings, we built a database view to take the average user rating for any given movie. This view was used to display average movie ratings in search results. Since not all movies may be rated, we used an outer join to ensure that our results included movies that had null ratings. We built out stored procedures for most of our searches, as well as for updating, inserting, and deleting values in the user watchlist table. We also created indexes for our most common search attributes, title and actor, in order to optimize our run-times.