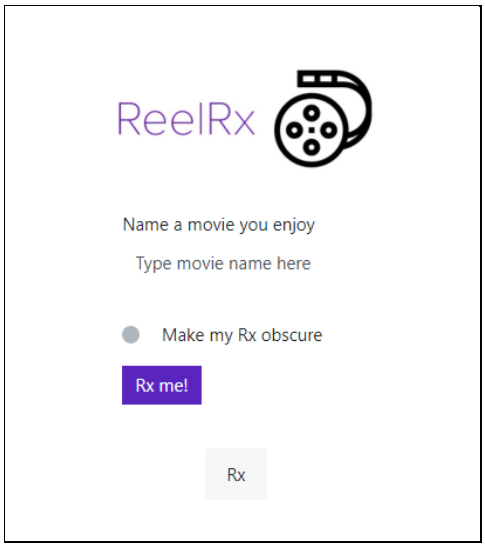
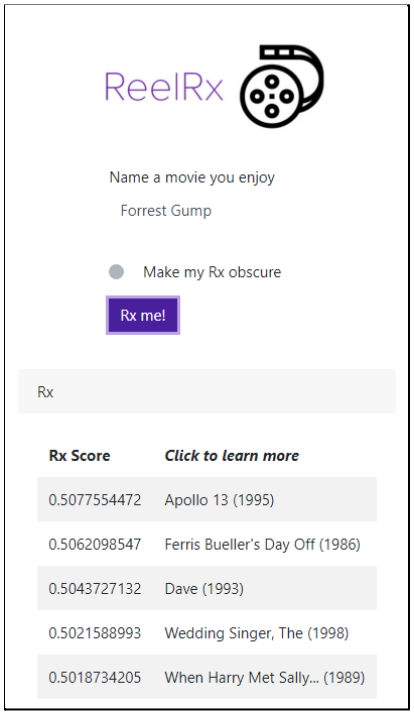
ReelRx - Movie Recommendations (1 of 2)

Group Members: Hoa Roach, Jammy Lo, Tim Schurmann, Tiffany Burns

There are so many movies to watch and we live in a world where we are increasingly busy, so we need recommendations and suggestions on what to watch.

- **Overview:** Flask web app that recommends to users movies to watch based on the user's favorite movies, using machine learning powered HTML/CSS and JavaScript.
- **Inspiration:** Netflix, Amazon Prime and other movie websites recommend users TV shows and movies to watch, but acutely aware that sometimes the recommendations are not relevant, our team built our own model for better movie recommendations.
- **Data:** This dataset contains movie ratings, movie info, and user info from the MovieLens website, a movie recommendation service.
    - **Data Limitations:** The dataset only includes movies from before 2001. Additionally, the dataset mostly contains men in the age between 25 to 35.
- **Machine Learning: ReelRx** uses a Collaborative Filtering approach. The model is built from a user's current behavior (inputs) and similar decisions made by many other users and then predicts 5 movies that the user may have an interest in using a cosine similarity k-nearest neighbors algorithm (k-NN).
    - **Obscurity Filter: ReelRx** provide two forms of movie recommendations: "Popular" and "obscure" recommendations.





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- **The Movie DB API:** Once a user has a recommendation list, they are able to click a movie title and have an API pull relevant information from The Movie DB.

- **Data Visualization:** Two Tableau dashboards were built to aid in user exploration of data.

    - **User Visualization:** Top films by demographic. Because the dataset is skewed by the user base, this would allow users to filter by gender, age range, and occupation.

    - **Genre Visualization:** It aims to optimize ease of use while offering functional features and fun information regarding movie genres that interest any age group of user.

- **Data Tables:** Utilizing D3.js and JQuery to load data tables to the app, a filtered table was created to allow users the opportunity to explore the raw dataset. Users can filter by movie title or genre to view information including number of users rated for that movie, average rating, and average age of users.

- **How ReelRx Changes the World:** **ReelRx** provides users a clean, quick new way to get watching movies faster. The ability to simply enter a movie and receive unique recommendations overcomes the daily problem of "option overload." Stack on top of that the ability to choose obscure recommendations, and every user will find the right viewing prescription on **ReelRx.**

- **Future Development:** **ReelRx** has the capability to be an all in one movie recommendation app, with a number of areas of potential improvement:

    - Gathering data from a more widespread demographic.

    - Including movies from 2000 to present.

    - Automatically include monthly releases of new movies.

    - Allow users to connect to an existing (or create a new) streaming service that would allow users to create profiles and watch the movies that are recommended.

- **References:**

https://grouplens.org/datasets/movielens/latest/

https://www.kaggle.com/johnwill225/movie-recommendations

https://en.wikipedia.org/wiki/K-nearest_neighbors_algorithm

http://themoviedb.org