Final Project Step 1:
A Movies Rating and Discovery App

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Potential Datasets:

- https://www.kaggle.com/datasets/shivvm/popular-movies-imdb-reviews-dataset
- https://www.kaggle.com/datasets/ebiswas/imdb-review-dataset/data

Application Idea:

- A movie review and discovery application, where users can receive recommendations based on their and their friends' film preferences. This app also allows tracking of actors, directors, and genres and allows filtering by these categories. More advanced features of the applications are recommendations based on a user's previously rated movies and discovery of watched movies of not only friends but also friends of friends.

Requirements:

- Users have only one watchlist and every watchlist can only be associated with one user.
- Watchlists can have many movies and movies can be associated with many watchlists.
- Movies have multiple actors and a director. Actors and directors can act in and direct multiple movies.
- Movies can receive different ratings from multiple users.
- Movies are associated with multiple genres.
- Genres can include multiple movies.
- Users can provide ratings to many movies.
- Users can have multiple friends.

Application Requirements:

- A user is able to rate movies.
- A user is able to add movies to their watchlist.
- A user is able to get ratings of movies of their connections.
- A user is able to connect with friends.

Entity Sets:

- Movies
- Users
- User Watchlist (Weak) possible attribute: rank
- Genre
- Ratings
- Directors
- Actors

Relationship Sets:

- Movies - Have - Ratings
- Movies - Have - Genres
- Users - Give - Ratings
- Users - Have - Watchlist
- Actors - FeatureIn - Movies
- Directors - Direct - Movies
- Watchlist - Contains - Movies
- Users - areConnectedTo - Users

Relationship Cardinality:

- Ratings : between a single user and a single movie
- Connection: between one single user and another single user
- MoviesGenre: m to n between movies and genres
- Features : m to n between movies and actors
- Directs : m to n between directors and movies
- Contains: m to n between watchlist and movies

Queries that we would like our database to answer:

1. What are the highest rated films for a given user's friends? (Users, Ratings, Movies)
2. What are the average ratings of films shared across all my friends? (Users, Ratings, Movies)
3. What are the most popular movies for all users?(based off of watchlist count) (User, Watchlist, Movies)
4. What are the most popular movies for a given user's friend group?(based off of watchlist count) (User, Watchlist, Movies)
5. What are the most popular genres of movies within a given user's friend group? (User, Genre, Watchlist)
6. What are the most popular genres of movies across all users? (User, Genre, Watchlist)
7. What are the most popular actors within a given user's friend group? (User, Actor, Watchlist, Movie)
8. What are the most popular directors of a user's friend group? (User, Director, Watchlist, Movie)
9. What are the most popular actors across all users? (User, Actor, Watchlist, Movie)
10. What are the most popular directors across all users? (User, Director, Watchlist, Movie)
11. What are the highest rated movies amongst my friends' friends? (Users, Movies, Ratings)
12. Based on my previous ratings, what are movies that I would most likely enjoy?