SPOILED TOMATILLOS

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Overview of the Problem

The client for this project is a stealth startup developing a product called Spoiled Tomatillos. The client's intent is to create a social recommendation system for movies that bridges the gap between movie streaming services like Netflix, Amazon, and Hulu and social media platforms like Facebook and Twitter. In order to achieve this, the client is requesting a Phase 1 prototype, an initial user base, and data to validate the service's algorithms work. These different deliverables are important to the client as they provide verification that the individual internal systems work, as well as proof that the service as a whole works. Specifically, the data provided will prove that the different algorithms (average critic rating, average site rating, and User-User Collaborative Filtering) create accurate results, while the Phase 1 prototype and initial user base provide proof that the system as a whole is coherent and attracts users (proof of viability as a monetization and content source).

Possible stakeholders in this work include the client themselves, who are invested in the product gaining widespread use or being acquired, investors in this client, and possible monetization sources during future use of the service (ad providers, industry data acquirers, and social media data acquirers).

In more detail, the end system will provide a way for users to combine their social media experience (friends, collaboration, and data mining from these source) with a movie recommendation/rating experience akin to IMDb or Rotten Tomatoes [no relation]. The importance of the social media aspect lies in its ability to provide information about a user beyond their raw rating/view information. Specifically, by comparing and connecting users in the system (friend connections or users following other users), "implicit" ratings for movies (even those that have never been seen by a user) can be generated. For example, if two users interact frequently with the system (giving each other suggestions, watching similar movies, or having

many mutual friends), they will be provided similar movie suggestions and if one of the users gives a movie a good rating, that movie will probably be suggested to the other user. In the end, this extra user-user data will provide a more complete suggestion system beyond just the information explicitly derived from movie ratings.

These specific features - arising from the combination of a social-media experience and a movie rating database - attempt to provide the client with a product beyond the individual capabilities of either of these component platforms alone. The end intention is to provide a platform surpassing those of existing movie database/suggestion systems, which will attract the user base and ad market to be profitable.

Background

Online movie services have co-existed alongside the internet since its inception. The Internet Movie Database (IMDb) was founded in 1990, before HTML was even released. In 1998, the movie recommendation and review service Rotten Tomatoes was founded just two years after the invention of JavaScript.

In the early 2000's, Myspace, Facebook, and Twitter joined the internet community and the age of social media began. Social networks now form the backbone of most user's online experience. In fact, current trends of modern web applications tend to incorporate small components of a social networking platform or API, even when the application or product itself is not directly related to social media. This project seeks to link the two realms of online movie recommendation systems and social media to create a new, unique experience for our users.

This project is not legacy but the fundamental components of the project already exists (Rotten Tomatoes, IMDb, OMDb, taste.io, etc). The operators of these systems are well known and it is possible/probable our system will rely initially on information drawn from one of the databases. This type of system is composed of existing services to create a new, unique experience for our users. The concept of internet social networks and movie rating systems are both well established, however, an aggregation of the two into one movie social site is a new idea.

Scope

While the project has been defined in terms of what it will attempt to achieve (recommendation system based on explicit reviews and user-user filtering), the implementation of these requirements still needs to be scoped. For example, while user-user interaction is within the project requirements, the implementation of this system is not yet scoped. Thus, the scoping of this project will be defined in terms of two main sections: movie recommendation and social networking. For each of these subsections, the requirements are specified on a spectrum from hard requirements (that must be achieved for the product to be considered viable) to soft

requirements and stretch goals (that would improve the overall product but that are not essential to our use cases).

The social media portion of the site must contain the ability to maintain a user profile containing basic information and movie reviews/comments. Similarly, users must be able to interact on a basic level with other users, including seeing their profiles, searching for other users' profiles, following other users' reviews/watch-lists, and suggesting to other users that they watch specific movies. Because of the requirement to be able to sign in with other SSO services (such as facebook or twitter), lists of possible friends should also be gathered from these services and provided to new users to give them an opportunity to quickly integrate with the system and other users (as well as provide the system with more information to work with for these users immediately after their registration). These requirements should be straightforward to implement, with the possible exception of the SSO information gathering subsystem.

Other basic requirements include: being able to link user accounts via friendships, explore user profiles for reviews and recommendations, and allow for the basic management of users and user experiences so that the movie recommendation/social media subsystems can function.

The movie recommendation portion of the site must contain information about movies (rating, description, cast, etc.) in an accessible format. The site must allow users to share, reviews, and rate movies. The platform should also generate recommendations for users based on their friendships and movie ratings. Administrative accounts must be able to moderate the content on any movie or user page. Furthermore, there must be a system in place for operations teams to interact with the site. Moderation and marketing extensions to the site for example would allow for a richer pages with more original content (and theoretically an improved user experience).

Populating the information on each movie page should be relatively easy as well known movie databases already exist. In the simplest scenario, all of the movie information contents will be pulled in from a third party. The difficulty will be in formatting and displaying these input results. Creating reviews, sharing movies pages, and rating movies, should also be relatively easy as it just involves calls to our internal API/database. The recommendation system will be difficult. At the simplest, the recommendation system should aggregate a user's friends' movie ratings, filter them for overlaps and provide the distilled list in a user friendly format. At the most complicated, the system could leverage machine learning to classify users and movies and algorithmically generate recommendations. Finally, the administrative portal will be moderately difficult. Administrative accounts need special permissions, and the decisions made by these accounts need to be propagated through the system.