Senior Project Proposal
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Database System for Predicting User Engagement via Interest Profiles

There are 2 problems with most movie review systems. The first is that most scales are opaque: rating a film with a number of stars or thumbs up, and deciding a movie's worth based on the grand average tells us nothing about the film. This makes it so any prediction system needs a lot of data to begin making a recommendation. The data can also easily be skewed through fictional reviews rating a movie higher than it would deserve.

Second, different people enjoy different things. The chance that any specific reviewer enjoys the same sort of content you do is low. General trends can be gleaned, but a review is unable to provide specific details of what YOU will like, only what the reviewer liked. However, if the review did love the same content that you do, in the same way, their reviews could provide recommendations much closer to your tastes.

These problems can be addressed with a database system designed to handle them. That system is what I propose for my senior project.

Specifically, the project consists of the following key pieces of a website:
- Users can create an account, log in, and review movies they have seen
- Users is processed and assigned a 'wavelength,' which is used to provide recommendations based on other people's review patterns
- Users can browse to a dynamically generated page which displays a movie's accumulated reviews, as well as the projected

These lead to the following measurable outcomes:
1. Is there a fully functioning website with requisite account features?
2. Can users receive recommendations based on what similarly patterned users have enjoyed?
3. When examining a single movie's page, can a realistic estimation be generated?

The technical stack I intend to use is:
- Heroku to host the project
- Git and Github to handle version control
- NodeJS and Express.JS to handle routing and serving pages.
- A Relational Database feels like the best fit for my needs. I believe Heroku has Postgres databases integrated into their systems as a default option, so that would likely be my choice.

Mentor

In pursuing this project, I'll be relying on Ben Clark as a mentor. He's a Senior Operational Engineer at CSG International, and has solid experience in many aspects of data processing that I have only a passing introduction to.

Project Timeline

As there are many aspects of this I haven't done before, a project timeline is going to be on the vague side.

The first key milestone of the project is the basic website, where users can register, log in, and begin reviewing movies, generating data for the second half of the project. I expect this to take four weeks.

After that, estimates run outside of my experience. There are two remaining measurable outcomes, and I feel three weeks development time for each is probably reasonable.

That gives me 10 weeks to have a workable product. Plenty of wiggle room if parts of the project take longer than expected.