

Project Proposal

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1. Introduction

- What is the title of your project?
 - FlickFinder
- What is the goal of the project?
 - To reduce the time it takes to find a quality movie to watch
- What is the motivation for this project?
 - When we want to watch a movie, but don't have a movie in mind it takes a ton of time to come to a decision about what movie to watch.
- Who are the customers/users?
 - Friends/Family/Movie Enjoys
- What development process will you be using?
 - Agile/Scrum

2. Novelty

The novelty of our project comes from the ability to recommend movies based on the users profile as well as an advanced search option. Competitors, such as Netflix and Prime Video only have the movies that they stream on their platforms. Our project will be able to recommend a very wide selection of movies. Also, users will be able to see a history of movies that they have liked and disliked.

We also have a large selection of movies, much larger than competitors. We plan to use this to allow people to have more options within their desired sector of movies. If someone wants

to recommend Adam Sandler films, then they will be able to see all of his films, not just the ones that are on a certain streaming service.

We hope to have an advanced machine learning algorithm that surpasses the likes of our competitors, streaming services, since we do not have any biases towards certain movies, such as Netflix with their original movies.

3. Customer Need

Who is the primary customer outside the team?

- Primary customers would be movie lovers and those who want a concise list of movie recommendations to choose from based on movies that they have enjoyed

Who are the secondary stakeholders?

- External stakeholders would be our customers that we interviewed to determine what we want to include in the application.

What do the stakeholders want? Why?

- The stakeholders want an application that will give them a concise list of movies that are recommended based on their preference.

What is their desired overall experience?

- Their desired overall experience would be to receive a short list of movies to choose from based on prior movies that they have liked so that they can decrease the time spent picking a movie and also pick a movie that they would enjoy.

5 SMART user stories

- As a user, I want to be offered personalized movie recommendations based on my preferred genres, so that I can discover new movies tailored to my tastes.

- As a user, I want to receive a concise list of recommendations, so I am not overwhelmed by the amount of options present.
- As a user, I want to have the ability to search for movies based on my favorite actors so that I can easily find their other work.
- As a user, I want to get movie recommendations based on my preferred directors so that I can discover the films of directors I admire.
- As a movie user, I want to be able to favorite a movie, so I can show that it is one of my favorites.

5 Acceptance Test

- Given a user has liked/disliked a movie when they navigate to their profile page then the movie is in its respective section (liked/disliked)
- Given a user has watched a movie when the user clicks on that movie then they are able to rate that movie.
- Given a user is interested in a movie, when the user clicks on that movie, then they are able to see information about that movie (genre, director, cast, etc.).
- Given a user watches a movie and really enjoys it, when the user selects it as one of their favorites, then it is displayed as one of their favorites on their profile.
- Given a user has inputted movies that they liked when they hit the recommend button then they will receive a short list of movies that are similar to their liked movies.

4. Project Goals

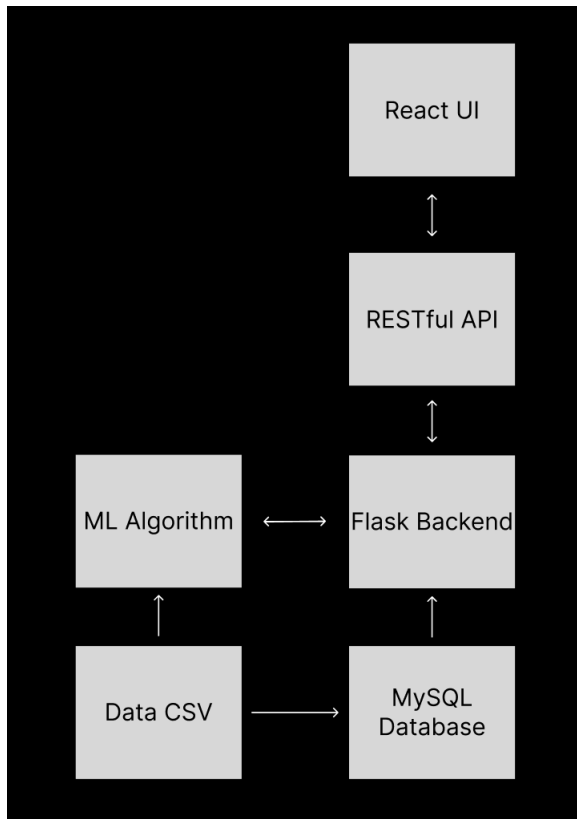
1. Customer Problems and Benefits

- What customer problem have you chosen to address?
 - Often times it takes too long to find a movie
- In implementation-free terms, what user benefit will the system provide?
 - There can be too many different movie options to scroll through
- How will the benefit support the customer's desired overall experience?
 - Less movies shown that are based on recommendations for the user should lower search time and increase movie enjoyment

2. Measure of Success

- Who outside the team have you tested the idea on?
 - We sent out a survey to the Phi Delta Theta fraternity on campus and have talked to fellow movie enjoyers living around Armfield.
- How will you know whether the customer got their desired benefits?
 - We are going to try and measure the number of movies that a user likes over the total number of reviewed movies.
- What are your customer-centric measures of success?
 - We can attempt to measure how long it takes to find a movie and find some sort of measurement of how much viewers enjoyed the movie to try and find a final value.

5. System Description



The main elements of our system are our machine learning model, our database, our Frontend, and the backend that allows our frontend to display the correct data. Our ML model will recommend movies based on the dataset that we found and user preferences. On top of these elements we will have an interactive ReactJS front end and Flask backend implementing a RESTful API to handle communications. Lastly we will maintain a MySQL database so we can save movie and user data.

- What are the main elements of the proposed system?

6. Solution Approach

- Briefly describe how the system will work.

- Our dataset is in the form of multiple csv files. We will use certain values in the csv data to train our machine learning model. From there we will populate our database with additional data from the csv. Our flask backend will get data from the database and communicate with a react frontend utilizing a REST api to display the data in a friendly way.
- What technologies (platform, tools, libraries, programming languages) will you use and why?
 - We plan on using MySQL as the database platform since most of our group has some level of familiarity. We'll use Python Flask as the backend and for creating REST api since Python has a wide variety of machine learning modules that could be very helpful. Our frontend will utilize ReactJS partly because of familiarity and partly because of popularity. Finally for user authentication we are planning on using Auth0 due to its ability to integrate with React.
- How will you test and measure the adequacy of your test strategy?
 - We plan on performing unit tests throughout development. At the end of each sprint we will perform regression testing to ensure any major additions do not cause any unforeseen problems. Lastly, we will have our friends try to use the website for usability testing. We will take this feedback and make adjustments for the subsequent sprints.

7. Project Management

- We will use Scrum

- We like the idea of daily stand ups, sprint planning, and sprint retrospectives. We also have experience working in scrum teams from previous internships.
- Describe your (brief) goals for each iteration (Proposal-Report 1, Report 1 - Report 2, and Report 2 - Final)

Status Report 1 goals - All data in database, have front end up with buttons

Status Report 2 goals -

Final Presentation goals - To have a completely functional movie recommender website that recommends movies that the users enjoy and significantly cut down on the time taken to select a movie in a group or solo setting

8. Team Management

- What are the planned roles for the team members?
 - Tristan - Developer/Scrum Master
 - Will - Developer/Product Owner
 - Daniel - Developer
 - Josiah - Developer
- What are the reasons for your decision?
 - Experience/courseload/athletics
- How often will the team meet?
 - We plan to have one-week sprints with two meetings a week
- How will you meet as a team? Zoom? In-person?
 - We plan to meet in person

9. Constraints and Risk

- Are there any social, ethical, policy, or legal constraints?
 - Recommending inappropriate movies for a younger audience
 - Copyright trouble with taking movie posters
 - Over reliance on user ratings could just lead to popular movies being recommended.
- Will you have access to the data, services, and resources you need?
 - Yes
- Is there anything else you might need?
 - Not as of right now