# Help Me Pick

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***Abstract*— Movies and home streaming options have increased tremendously over the last few years, and this will continue to grow. Help Me Pick is an Android Application that allows users to select what movies they are interested in, and provides a rating, review and trailer from TMDb. The UI is easy to navigate and follow and is connected to the TMDb API. This will lead to great utility among indecisive movie watchers.**

***Keywords*— recommendation system, movies, android application**

## I. Introduction

People are having issues with finding a new movie to watch. Most people spend more time trying to search for a movie as opposed to watching the movie itself. We wanted to figure out a way of searching and picking a movie. The competition such as stremio, justwatch, Netflix, and Hulu do not provide a good movie recommendation. They base their recommendation on your previous watch history, or they recommend by genre. We wanted to fix this problem by creating an application that recommends movies by listening to a specific query, searching for a specific query and displaying a list of trending movies.

Netflix roughly has 5,500 movies [3], while Hulu has about 2,700 movies [4]. All the movies on these platforms do not provide ratings or reviews. Many users are frustrated because these services only provide a description and this contributes to their indecisiveness.

With this Android application, people will spend less time wasting their energy to search movies and instead will be presented with good choices that they can enjoy. They will be able to utilize their voice and text, which leads to the MovieDB API. This always pulls the latest trending movies and keeps a fresh list to users.

## II. Related Work

It can be hard to pick a movie. We are going to gather suggestions from movies which are based on what the user is feeling towards the movie. We get suggestions from users such as the popularity of the movie, what is currently available in theaters and older movies. Essentially the user will perform the selection of genres. This could include thriller, action, horror, and romance. All of these recommendations are stored in the database. This will be done through firebase and will have information of the movie, the genre and the different ratings. These ratings will be based on critic ratings. This app will also allow the users to view the suggestions and make a choice. The issue we will encounter is the database will need to be updated and to have up to date movie information. Another issue that will need to be taken into account is the user. Every user is different, and the user needs to be a frequent user to have the app provide an accurate recommendation movie. Since the streaming revolution there have been major improvements in the Machine Learning field of recommendation systems. One of the early pioneers of movie recommendation systems is Netflix. Usually Netflix uses many types of ranking systems on its platform such as:

- Personalized Video Ranker: Which means that recommends movies based on the personalized signals that a user sends.
- Top-N Video Ranker: Find the best few personalized recommendation for each member in the entire catalog
- Trending Now: Shows short term trends that range from a few minutes to a few days
- Continue watching: Sorts the recently viewed titles based on the best estimate of whether the member intends to resume watching.
- Video-Video similarity: Based on the similarity of previous movies that you have seen

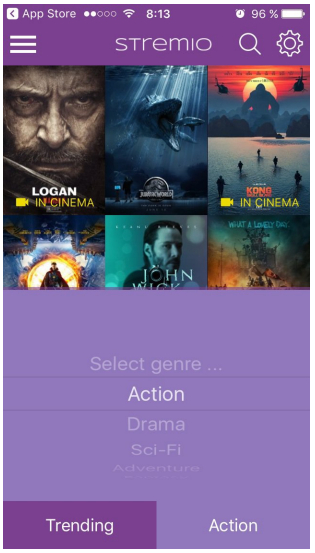
And many other techniques such as Page Generation, Evidence, Search and Related Work. Interested readers are referred to [1]

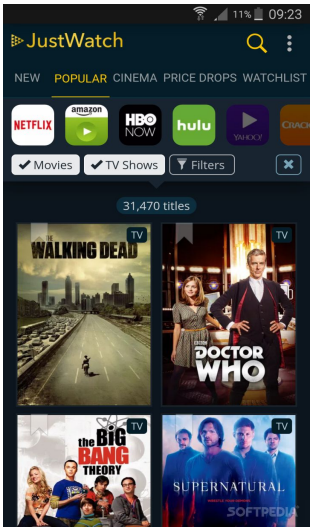
Another method of content filtering includes hybrid approaches that use content-based and collaborative filtering. This method addresses the shortcoming of making recommendations and predictions based on users interest and signals. This paper proposes a hybrid approach based on the monitoring of certain parameters that trigger either content-based or a collaborative filtering prediction called MoRe(Movie Recommender) [2].

## III. Proposed Idea

People are having issues with finding a new movie to watch. Most people spend more time trying to search for a movie as opposed to watching the movie itself. We wanted to figure out a way of searching and picking a movie. The competition such as stremio, justwatch, Netflix, and Hulu do not provide a good movie recommendation. They base their recommendation on your previous watch history, or they recommend by genre. We wanted to fix this problem by creating an application that recommends movies by listening to a specific query, searching for a specific query and displaying a list of trending movies.

Some of our competitors include:




## IV. System Design

What we found early in our prototyping and testing was that user's were having a hard time using our UI because there was a page for every feature. This was later unified into two fragment parts (Recommendation and Trending) and the search and floating button being present throughout the two fragments. The user's were often confused as to where to go for each feature in order to get movie recommendations. After unifying our views user's had a very simple time navigating our app. Figure 1. here show's our final prototype part after getting user feedback. The floating button for voice makes it easier for people to search for a movie by using their voice no matter what view they are. Also, the search bar is present on both views and if an user wants to search for a movie they can just simply type what they wish to look for. For each movie you get a list of reviews back, a trailer and similar movies based on that movie.

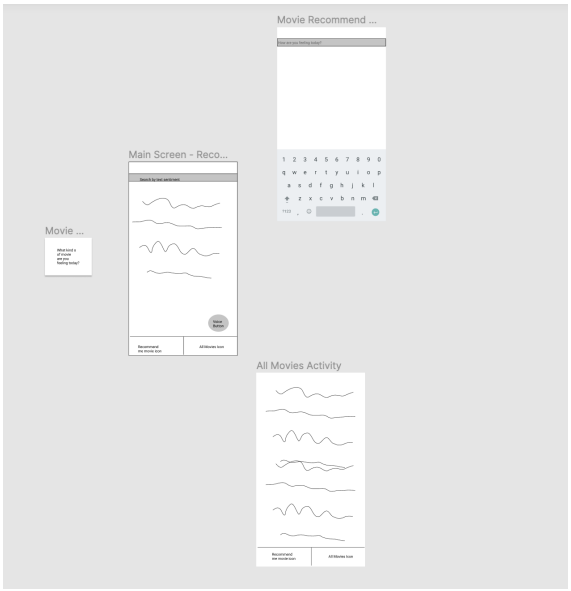
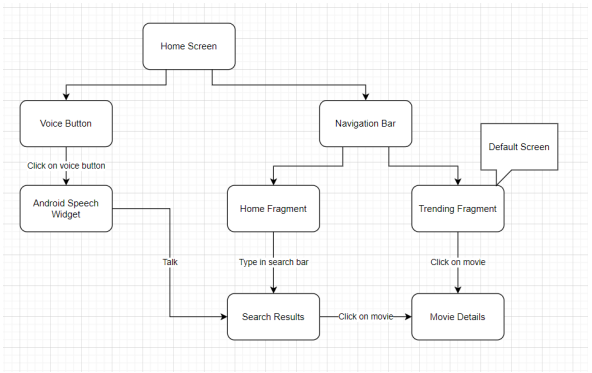
- 


Figure 1

## V. Implementation

In order to implement the project as smoothly as possible we created Figure 2. We use the TheMovieDB API for our back-end in order to get all the needed data. The figure 2 shows each flow that the user can take. There are basically 3 flows for our app. The first flow involves the user searching through a list of trending recommended movies. The second flow involves using your voice to search for movies and then after translating voice to text we make an API call and get back a list of recommended movies. The third flow involves using text and searching through the search bar and after confirming what you want to search for it gives you back a list of recommended movies based on that query.

- 


  - Figure 2

- Front-end

For the front end we use Fragments for both our main views (Trending,Recommendation) and a Detail Activity on which we show the details of each movie. Multiple recycler views are used in these cases each with their custom UI.

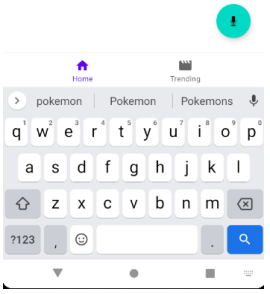
- Back-end

As explained before for our back-end we are using TheMovieDB API. TMDb API takes care of all the heavy lifting for us.

## VI. Evaluation

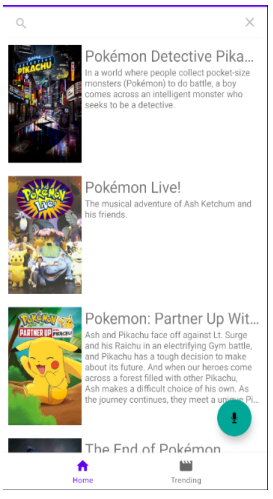
After our implementation phase, we successfully implemented each required feature that we planned. The screenshot's of each feature are attached below



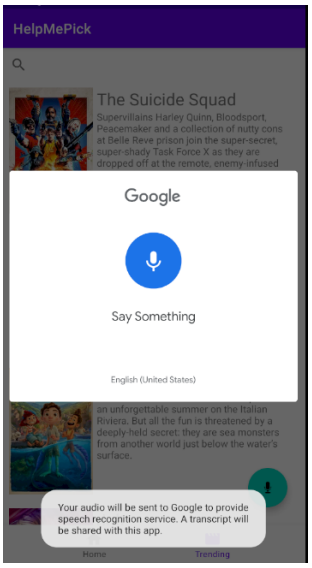

- Figure 3.

Example of search bar



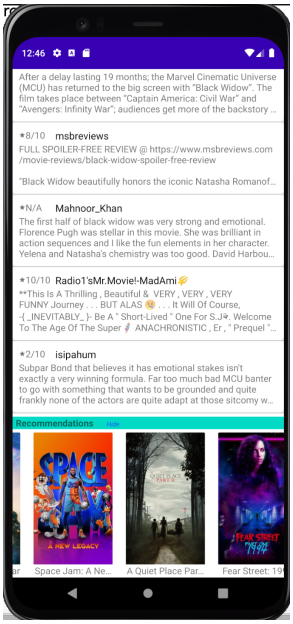

- Figure 4

Example of result by searching query.



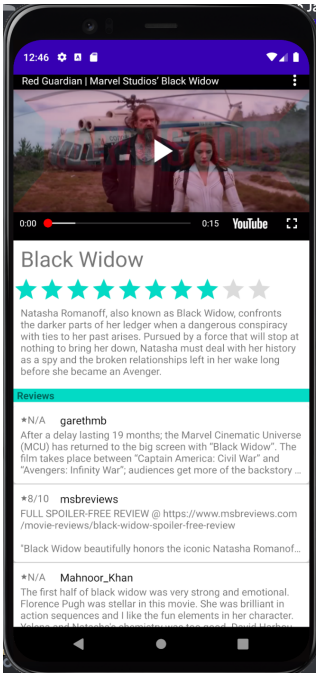

- Figure 5

Example of option to use a microphone to search for the movie also.




- Figure 6

Example of Detail Activity for specific movie.




- Figure 7

You have the rating and the ability to play a trailer in the application

## VII. Discussion

We were able to create an application that has the ability to display the movie, provide ratings and reviews. This application will help users be able to decide on a movie without wasting much time. This was a great application to work on. The group learned and implemented many new skills. The layout function was very different from what we have done. We learned how to change and position items where we wanted to. This was crucial for our project because we wanted the UI to look great. We were happy with the outcome, and the UI is very easy to use.

## VIII. Conclusion and Future Work

The next step to this application is to include a bigger database. The issue with this is that we were unable to secure a much bigger database from IMDb. The company only gave us about 200 movies that we could select from. In addition to

this we could implement a Recommendation Back End System. This way we can give our users a better and more personalized experience. This will make picking a movie an easier and better experience. In addition to this, we could implement a search for movies based on categories. Currently, the search is just for voice, text and trending. This will help with deciding on a movie. Another add on that could be implemented is having the cast, studio and genre information on the movie page. This information is not present and this could be helpful to the user.

## IX. Job Assignment

- Endi: Initial Design and project lay out, Recommendation and Trending fragment abstraction, Movie recommendation by text and voice feature integration, initial movie detail activity with youtube integration, paper write up, presentation design
- Phat: Movie recommendation implementation, UI testing and overall re-designing,presentation design
- Marcus - Movie Review Integration for Detail Activity, paper write up, presentation design

## X. References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