CPSC 408-02

22 May 2021

Professor Rao Hamza Ali

Netflix Selector

Nikita Shetty & Kashish Pandey

Introduction

The problem Netflix Selector aims to solve is to help indecisive people pick a perfect movie or TV show to watch. Through an easy-to-use Python Terminal application, Netflix Selector allows users to do a multitude of actions ranging from creating their own account to filtering for their favorite actors or directors. We created Netflix Selector in order to provide users with more options than what Netflix currently is able to support, such as a random movie or TV show generator for those who have difficulty choosing what to watch in their free time. The current features in Netflix Selector include: selecting a random movie, selecting a random TV show, seeing all titles, filter by actor, filter by genre, filter by country, filter by director, viewing future list, rating titles, export future list to CSV and deleting account. These features will overall enhance the experience between the user and the way they interact with Netflix.

Related Works

Our aim with Netflix Selector was to combat some of the features that have been removed by Netflix within the past few years. The first feature Netflix removed that we believed was valuable to the Netflix experience was the ability to rate titles after you've completed watching them. The 5-star rating feature allowed users to personalize their own ratings for each film and see what other users were highly rated. The 5-star rating paved the path for all Netflix users to provide their own input on

their viewing content as well as seeing what others had rated. We decided to bring this feature back as it serves a greater purpose in terms of personalization and recommendations. In our rating system, the user can rate a title from 1 to 5 and have it stored in their rated titles. What's interesting to analyze is the new feature that Netflix has replaced the 5-star feature with, which is a thumbs up button for "I like this" and a thumbs down button for "Not for me." There is no way to tell what other Netflix users are enjoying besides the "Trending Now" tab, which is primarily filled with content made by Netflix and not so much content created by those apart from Netflix.

Elements of the Solution (Framework)

In terms of elements of the solution, Netflix Selector's goal is to help indecisive individuals find a perfect movie or TV show for them; with that in mind, Netflix Selector has a random show and random movie generator feature to help people out. If the user wants to generate another show or movie, they also have the option to do so; they can keep generating until they are content with the title selection. Another aspect Netflix Selector has improved upon is filtering titles by duration and countries. Netflix and Netflix Selector both provide filtering by actor, director, and genre. However, the ability to filter by duration would serve as an extremely useful tool for those who only have a limited amount of time to watch a show or movie. Additionally, the ability to filter by country allows users to explore the realm of content from other parts of the world. The final feature we incorporated into Netflix Selector was filtering by release year; for those who want to view the newest releases or watch older movies, this is a great feature that serves both audiences.

On the more technical side, all of our data is stored in a MySQL backend. In terms of the features required for this project, we included all twelve from the rubric. In order to create a new record, it is done by the user when they create an account and can rate a title or add a title to their

future list. The deletion of records can be accomplished by the user, again, where they have the ability to delete their account off of the Netflix Selector database. In terms of transactions, we incorporated that into the deletion of the user accounts; this served as a way for us to maintain the ACID properties while deleting. Next, for the generation of reports that can be exported to a CSV file, we allowed the users to select to export their future list as a CSV file. The CSV file contains information about the title name, whether the title is a movie or a TV show, the release year of the title, the rating of the title, the duration, and a short description of the title.

The aggregation we performed pertained to the duration of movies and TV shows in the future list; we were able to get the total watch time for both categories and display them to the user. The two queries that involved joins across at least three tables were with our views tables. We had used a total of four tables, those being director_titles, countries_titles, actor_titles, and genres_titles; by using a views table, we were able to inner join on all those tables. The enforcement of referential integrity is further explained in the schema diagram section, as we have a combination of primary keys, composite keys, and foreign keys. Lastly, in terms of indexing, we created TitleID_index, ActorID_index, and DirectorID_index in order to be able to find rows with the ID values quickly because there are such a large number of titles, actors, and directors.

Results

```
What would you like to do?
---------MENU---------
1) Select a Random Movie
2) Select a Random TV Show
3) See all Titles
4) Search by Title
5) Filter by Actor
6) Filter by Genre
7) Filter by Country
8) Filter by Director
9) View my Future List
10) See My Rated Titles
11) Export Future List
12) Delete my Account
13) Log out and Exit
Enter option here:
```

```
Enter option here: 1

-----Your Random Movie------

ID: 32
Title: #FriendButMarried
Year Released: 2018
Duration: 102 min
Content Rating: TV-G
Type: Movie
Description: Pining for his high school crush for years,

Would you like to:
1) Add this movie to your Future List
2) Rate this Movie
3) Generate a New Random Movie
4) Generate a New Random TV Show
5) Go back to menu
Enter option here:
```

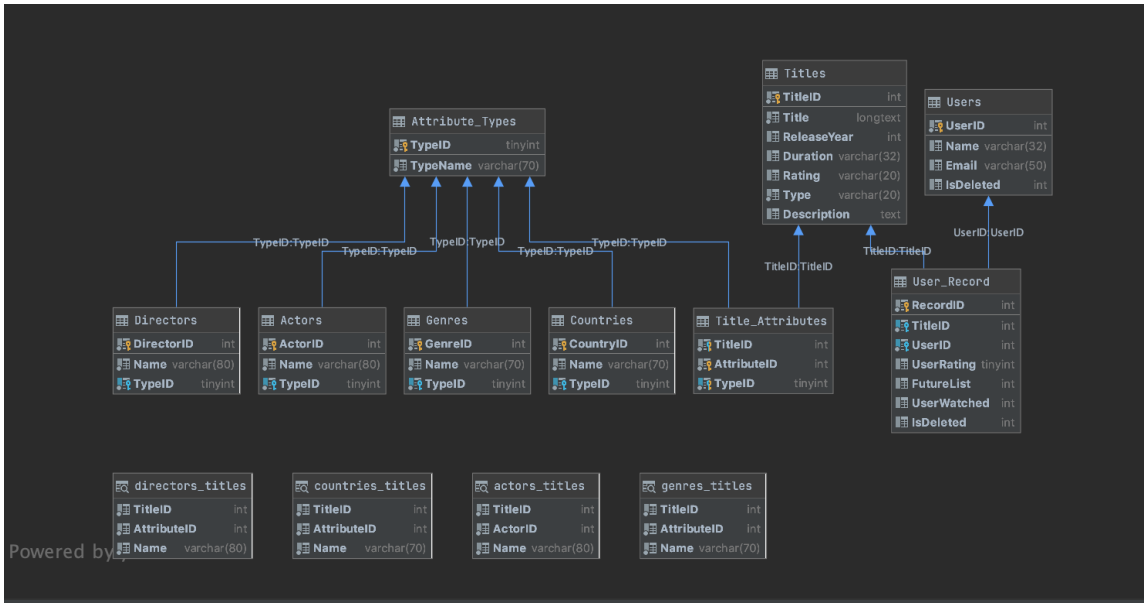
```
Enter Actor Name: Kevin Spacey
ID: 5
Title: 21
Year Released: 2008
Duration: 123 min
Content Rating: PG-13
Type: Movie
Description: A brilliant group of students b

Would you like to:
1) Add a Title to your Future List
2) Rate a Title
3) Search for Another Actor
4) Go Back to Menu
Enter option here:
```

In terms of our results, our menu and a few of the screenshots of options from the menu showcase what we accomplished. When the user selects option 1, a random movie is generated for them and provides the TitleID, Title, Year Released, Duration of the movie, Content Rating, Type, and short description of the movie; option 1 can be seen in the third image. After selecting option 1, the user has a few choices; they can add the randomly generated movie to their future list, rate the movie, randomly generate a brand new movie, randomly generate a TV show, or return to the main menu. When the user selects option 2, similar to option 1, a random TV show is generated and provides the TitleID, Title, Year Released, Duration of the movie, Content Rating, Type, and short description of the movie. The same four options from the random generation of movies also appear for random generations of shows. When the user selects option 3, instead of displaying all 7787 titles at once, we decided to display 10 titles at a time. After selecting option 3, the user can then choose to view 10 more titles, add a title to their future list, rate a title, or go back to the menu.

When the user selects option 4, if they already know what they want to watch, they can search by the specific title name and get all the information related to that title. When the user selects option 5, if they provide a particular actor name, they can filter for titles with the actor in it. When the user selects option 6, a numbered list containing 42 different genres will appear, and the user can choose which genre they would like to filter by; from there, 10 titles with that genre will display. After seeing those 10 titles, the user will return to the main menu screen. When the user selections option 7, a numbered list containing 117 different countries will appear. The user can select which country they would like to filter by; from there, 10 titles with that specific country will display, and the user will return to the main menu screen. When the user selects option 8, if they provide a particular director name, they can filter for titles created by that director.

When the user selects option 9, they can view their future list; here, the user can see their total watch time for the shows and movies within their future list, the TitleID, Title, Year Released, Duration of the movie, Content Rating, Type, and short description of the movie. When the user selects option 10, they will be able to access all the shows they have rated previously. When the user selects option 11, the user can export their future list into a CSV file. In this CSV file, the information provided gives the user the title, whether the title is a show or movie, the release year, content rating, duration, and description of each title in their future list. When the user selects option 12, they have the ability to delete their account off of the database. Finally, when the user selects option 13, the user can log out and exit the program.

Schema Diagram



The tables within our schema diagram include Directors, Actors, Genres, Counties, Title_Attributes, Attribute_Types, Titles, Users, and User_Record. The Titles table has all the records of the Netflix titles and contains a unique TitleID as a primary key. The Users table has records of all the users in the program; it includes their name and email address as well as a UserID

primary key. Both TitleID and UserID are foreign keys to the User_Record table, and there is a unique RecordID as the primary key. The User_Record also stores the information on the titles a user has watched, rated, and added to their future list. Each title had potentially more than one director, actor, country, and genre, so we created four tables with IDs and names of each, as well as a Title_Attributes table that connects the titles to their attributes. The Title_Attributes has a composite key of TypeID, AttributeID, and TitleID. The director_titles, countries_titles, actors_titles, and genre_titles are views we had created to access the TitleID, AttributeID, and Name of each attribute for the title. The Directors, Actors, Genres, Countries, and Title_Attributes tables are all connected to Attribute_Types through the foreign key TypeID, where Attribute_Types has the primary key of TypeID.

Conclusion

Netflix Selector aims to help entertain indecisive people and give people an easy way to choose a new show or movie to watch in their free time. We hope that the use of Netflix Selector will allow people to make more informed decisions about their entertainment choices. Happy Selecting!