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CPSC 408 01 - Database Management

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Final Project Report

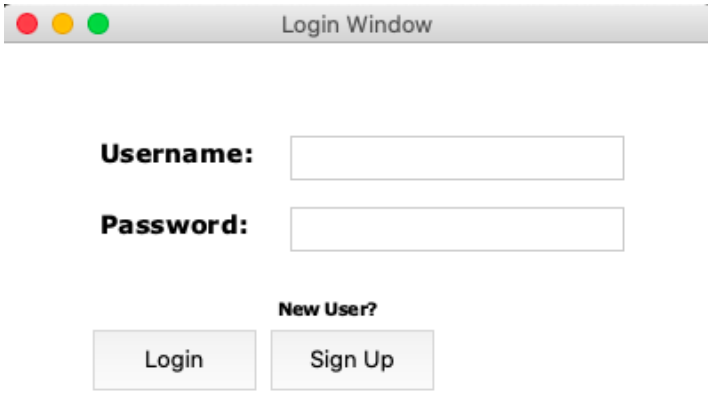
Although available for over a decade now, the use of streaming services has peaked within the last few years. From Disney, to Netflix, to Amazon, it seems as though every big name company is coming out with their own streaming service. Especially in light of the COVID-19 pandemic, people stuck at home in quarantine have seemed to turn to entertaining themselves through these streaming services. According to USA Today, “worldwide viewing time grew 44% in the last three months of 2020” alone (Snider, 2021). They had also found that if paying for a subscription, a consumer manages an average of five subscriptions from these streaming services (Snider, 2021). With so many options to choose from, one would think that consumers may have difficulty managing all of their desired programs across various platforms. With an average of five subscriptions, this begs the question of, “how do subscribers keep track of what shows or movies are on what platforms?” and “how do they decide which services to subscribe to or keep?”.

The solution to this problem was to combine these services and allow a user to streamline the search of show and movie titles throughout all of the platforms they subscribed to. The purpose of this application is to provide a service for users to more efficiently discover what shows and movies are available and keep track of what program is provided on which streaming service. With this application, users will be able to search their favorite titles and create a watchlist of these programs that keep track of their watch queue and history, no matter what

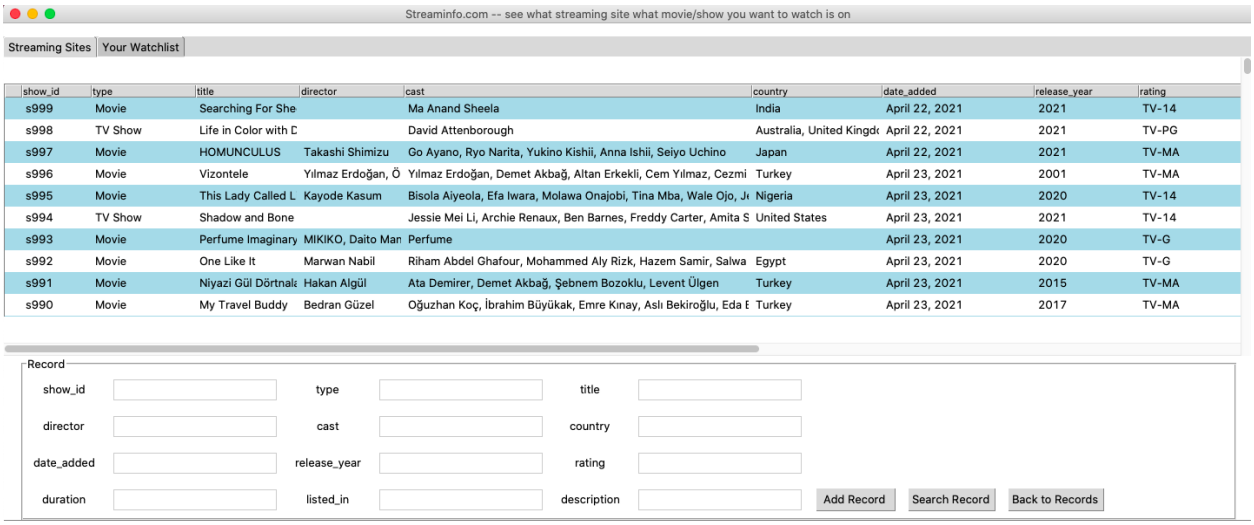
service they are provided on. Instead of having to keep track of separate watchlists on each service, our application will be able to manage all the user's programs in one single place.

After searching the internet to find related work, there seems to be a website called streamlinewatch.com that had the same idea as we did. Just as our application is designed to do, StreamlineWatch is advertised to allow users to, "search a single interface across all [their] streaming subscriptions to see if [their] favorite movies and tv shows are available. No need to switch between individual apps" (streamlinewatch.com, 2021). Nonetheless, we continue with the elements of our own project and solution.

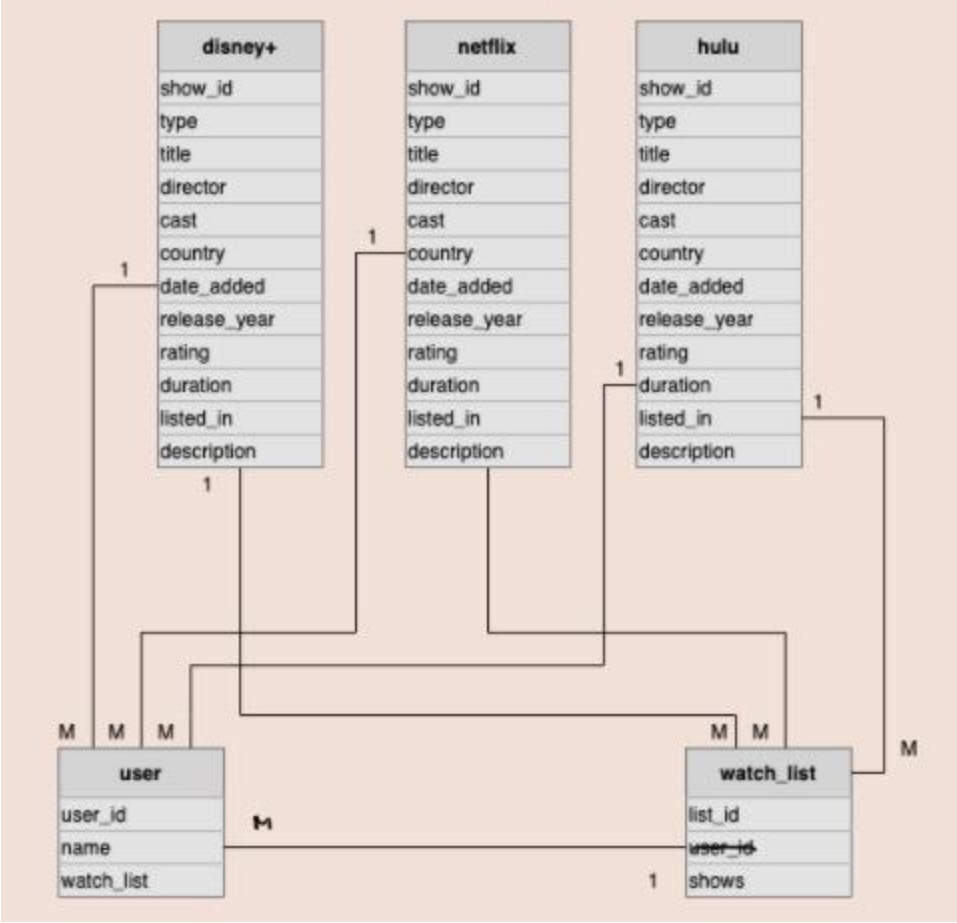
The database that was created can be accessed through a Python GUI created with the open-source Python package, Tkinter. After running the program's script in the command-line, the GUI pops up and the user is prompted to either sign-in or sign-up by creating an account. This account includes a user ID, name and password. We intended to have the user ID used as the primary key for the user entity, and a watchlist ID is created for this user. The watchlist ID would then be a foreign key that belongs to a parent table called watchlist, that holds all of the user's desired programs to be managed. After signing in, the user is able to see and search through the titles of various joined streaming sites. For the purpose of this application, we have limited the streaming services provided to Netflix, Disney Plus, and Hulu. However, for a real world application, all services such as HBO, Amazon Prime Video,



Crunchyroll, etc. would also be included. From there, they are able to select a movie or tv show and add it to their watchlist.



After having completed this item, they can update the status of this particular program to “watched” and keep track of their watch history. If a mistake is made and a user simply no longer wants to watch a program that was added to their watchlist, they have the ability to delete a title. Users are also able to take snapshots of their watchlists by exporting them to CSV files. With the use of creating views we would be able to limit the access the user has to only view the data we wish to provide. This data is then displayed through the GUI to show only the streaming site ID (to help identify which service the title belongs to) along with all of the programs’ information that a user may be interested in. We have also added features that include sorting the watchlist by country and viewing the average duration of the titles in the same watchlist (the latter we wrote a query for, but were not able to implement). The design of this database was created using a schema of five tables:



These tables include one for each streaming service, Disney Plus, Netflix, and Hulu, as well as a table to hold user information and watchlist titles. Condensed in the diagram, the watch list contains watchlist IDs for each show title added to denote which user watchlist the title belongs to. We added this attribute to the title records since multiple users can add the same title to their watchlist. The records in the watchlist table hold the same information held in each of the streaming service tables along with the attribute previously mentioned. The user and each of the streaming site tables have a one-to-many relationship as each individual streaming service can provide to multiple users, however the user can only choose to subscribe or not subscribe to each individual service. The same can be said about the relationship between a watchlist and each

streaming service. Each individual streaming service can appear on multiple user's watchlists; however, the watchlist only has the option to either host or not host titles from that particular platform. The user and watchlist also have a one-to-many relationship as each user only has one watchlist, however, the watchlist table contains the watchlists of multiple users.

While some of the functionalities do not work as expected, this application would still be useful and continues to work towards our solution of streamlining the search on streaming services.

Citations

Snider, Mike. “Netflix, Amazon Prime, Disney+ and Hulu Are Streaming Favorites as Americans Subscribe to More Services amid Covid-19.” USA Today, Gannett Satellite Information Network, 16 Feb. 2021, https://www.usatoday.com/story/tech/2021/02/16/netflix-amazon-streaming-video-disney-hulu-hbo-max-peacock/6759020002/.

Streamlinewatch.com, 2021, https://streamlinewatch.com/.