Introduction

The Adult Cartoon Episode Analysis project aims to explore and analyze relationships between TV show episodes using graphs, nodes, and edges. By creating a graph where each node represents a TV episode, the project enables users to investigate similarities between episodes based on shared attributes such as guest stars, directors, writers, air dates, viewer counts, and IMDb ratings. The graph structure allows for the exploration of episode networks, helping to uncover hidden connections and patterns within long-running TV shows. This project analyzed 4 popular adult TV shows (Family Guy, Futurama, South Park, The Simpsons).

Key Findings and Observations

Through the analysis of the dataset, several interesting findings and relationships were observed among the TV episodes:

- **Most Connected Episode:** The most connected episode is SouthPark_S16_E3 with 800 connections. Out of the 50 episodes with the most similarity to this episode, 6 of them tied for the most number of shared attributes with a similarity score of 3. It was interesting seeing that there are not episodes with a higher similarity score for the most connected episode.
- **Similar Episodes:** When looking at the most similar episodes to an episode of interest, it was interesting to see how the top most similar episodes to a lot of episodes of interest have relatively low similarity scores (1 or 2). Similarity scores represent the total number of shared attributes.
- **Shortest Path:** When testing to obtain the shortest path between several episodes (chosen at random), I noticed that a lot of episodes only require 2 steps to get to the shortest path.

Overall, it seems that there isn't much overlap between episodes. If there is a similarity between episodes, there are usually only 1-2 edges. Knowing this, it’s interesting to also see that a lot of the time the shortest path between 2 episodes is relatively short (i.e. 1-2 steps). Episodes don’t seem that connected to one another but seeing the shortest path between episodes shows us how they are pretty interrelated within the graph system.