EXECUTIVE SUMMARY

Problem Statement: With the loss of almost a million subscribers in Q2 2022, Netflix wants to know if it prioritizing its investments more towards TV shows than movies can lead to increase in number of subscribers.

Process Followed:

- **Data Preparation**- Subscriber related data from Q4 of 2011 to Q4 2021 is taken from online sources. Information regarding the overall library of Netflix, ie movies, tv shows released over the years with their details is taken from Kaggle. Sentiment analysis on user reviews is performed to obtain average sentiment score. User and critic ratings are scraped from Rotten tomatoes.

- **Exploratory Analysis** is performed to understand the current content and market size of Netflix.

- **Hypotheses testing** is performed to understand if there is a significant difference in the impact of tv shows over movies with respect to subscriber count.

- **Linear model** is built to quantify the effect that TV shows have on increasing the subscribers

Exploratory Analysis: USA and Canada form Netflix's biggest markets. Only 30% of Netflix library consists of tv shows. A strong correlation of 0.93 is observed between number of subscribers and number of TV shows introduced. Sentiment Analysis was carried out on 146k reviews obtained after scraping Rotten Tomatoes. The overall sentiment of viewers towards TV shows (0.44) was better than that towards movies (0.38).

Hypotheses Testing:

Hypotheses	Results
H_o: The correlation between number of tv shows and subscribers is not significant H_a: The correlation between number of tv shows and subscribers is significant	P-value is less than 0.05 indicating statistical significance
H_o: Average ratings for Netflix exclusive shows is same as other platforms H_a: Average ratings for Netflix exclusive shows are different from other platforms	With 95% confidence, we reject the null hypotheses. Average ratings for Netflix exclusive is higher
H_o: Average ratings for TV Shows with 1 season is the same as shows with more than 1 season H_a: Average ratings for TV Shows with 1 season is different than shows with more than 1 season	With 95% confidence, we reject null hypotheses. Average ratings for shows with more than 1 show is higher

Key Takeaways: With a much higher confidence, we can say that the impact of TV shows is higher than that of movies.

Linear Model: A log-linear model was developed to quantify the impact of introducing new tv shows each quarter on the number of subscribers. We choose the variables number of shows, number of movies, averaging user and critic rating of shows, movies as the variables to predict logarithm of subscribers. From the model summary, we can see that for every new tv-show introduced, there is a 0.7% increase in number subscribers and for every unit increase in critic ratings, the subscriber count increases by 0.5%. The impact of movies is much lesser as seen in the equation. User reviews & ratings also do not have much impact on the subscriber growth.

Recommendations: Producing more original TV shows has the potential to bring in new users as they have higher ratings than shows from other platforms. TV shows with more than 1 season can be introduced to generate continuous user engagement.

Limitations: Correlation may not necessarily mean causation. There may be factors like marketing spend, CPI which may have led to increase in subscribers. Obtaining user level data could have helped uncover more insights on how the subscribers churn based on features like subscription tier, genre preferences etc.