DATA & PROGRAMMING FOR ANALYTICS

OTT PLATFORM ANALYSIS
&
MOVIE RECOMMENDATION
MODEL

GROUP 1B:
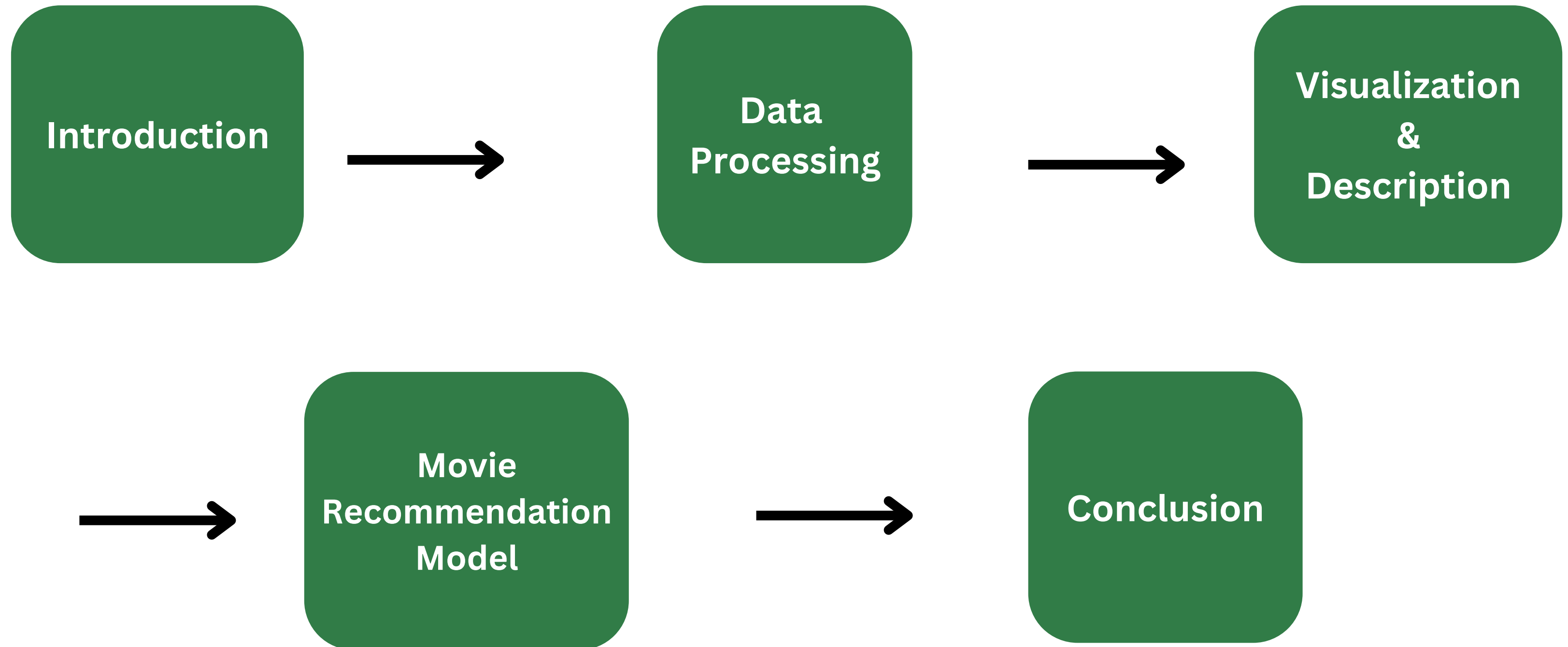APOORVA SHITOLE
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C K ANAND PRAKASH
JIHOON KWON
XUANYAO SUN

PROJECT OVERVIEW

Introduction → **Data Processing** → **Visualization & Description**

→ **Movie Recommendation Model** → **Conclusion**

INTRODUCTION

DATASET BEFORE PRE-PROCESSING

	Unnamed: 0	ID	Title	Year	Age	IMDb	Rotten Tomatoes	Netflix	Hulu	Prime Video	Disney+	Type	Directors	
0	0	1	Inception	2010	13+	8.8	0.87	1	0	0	0	0	Christopher Nolan	Action,Adven... F
1	1	2	The Matrix	1999	18+	8.7	0.87	1	0	0	0	0	Lana Wachowski,Lilly Wachowski	Actio
2	2	3	Avengers: Infinity War	2018	13+	8.5	0.84	1	0	0	0	0	Anthony Russo,Joe Russo	Action,Adventu
3	3	4	Back to the Future	1985	7+	8.5	0.96	1	0	0	0	0	Robert Zemeckis	Adventure,Com
4	4	5	The Good, the Bad and the Ugly	1966	18+	8.8	0.97	1	0	1	0	0	Sergio Leone	

17381 rows × 18 columns

DATASET AFTER PRE-PROCESSING

	Platform	Title	Genres	IMDb	Rotten Tomatoes	Year	Language	Country	Age	Directors
0	Netflix	Inception	Action,Adventure,Sci-Fi,Thriller	8.8	0.87	2010	English,Japanese,French	United States,United Kingdom	13+	Christopher Nolan
1	Netflix	The Matrix	Action,Sci-Fi	8.7	0.87	1999	English	United States	18+	Lana Wachowski,Lilly Wachowski
2	Netflix	Avengers: Infinity War	Action,Adventure,Sci-Fi	8.5	0.84	2018	English	United States	13+	Anthony Russo,Joe Russo
3	Netflix	Back to the Future	Adventure,Comedy,Sci-Fi	8.5	0.96	1985	English	United States	7+	Robert Zemeckis
4	Netflix	The Good, the Bad and the Ugly	Western	8.8	0.97	1966	Italian	Italy,Spain,West Germany	18+	Sergio Leone

17381 rows × 10 columns

NUMBER OF MOVIES IN OTT PLATFORMS
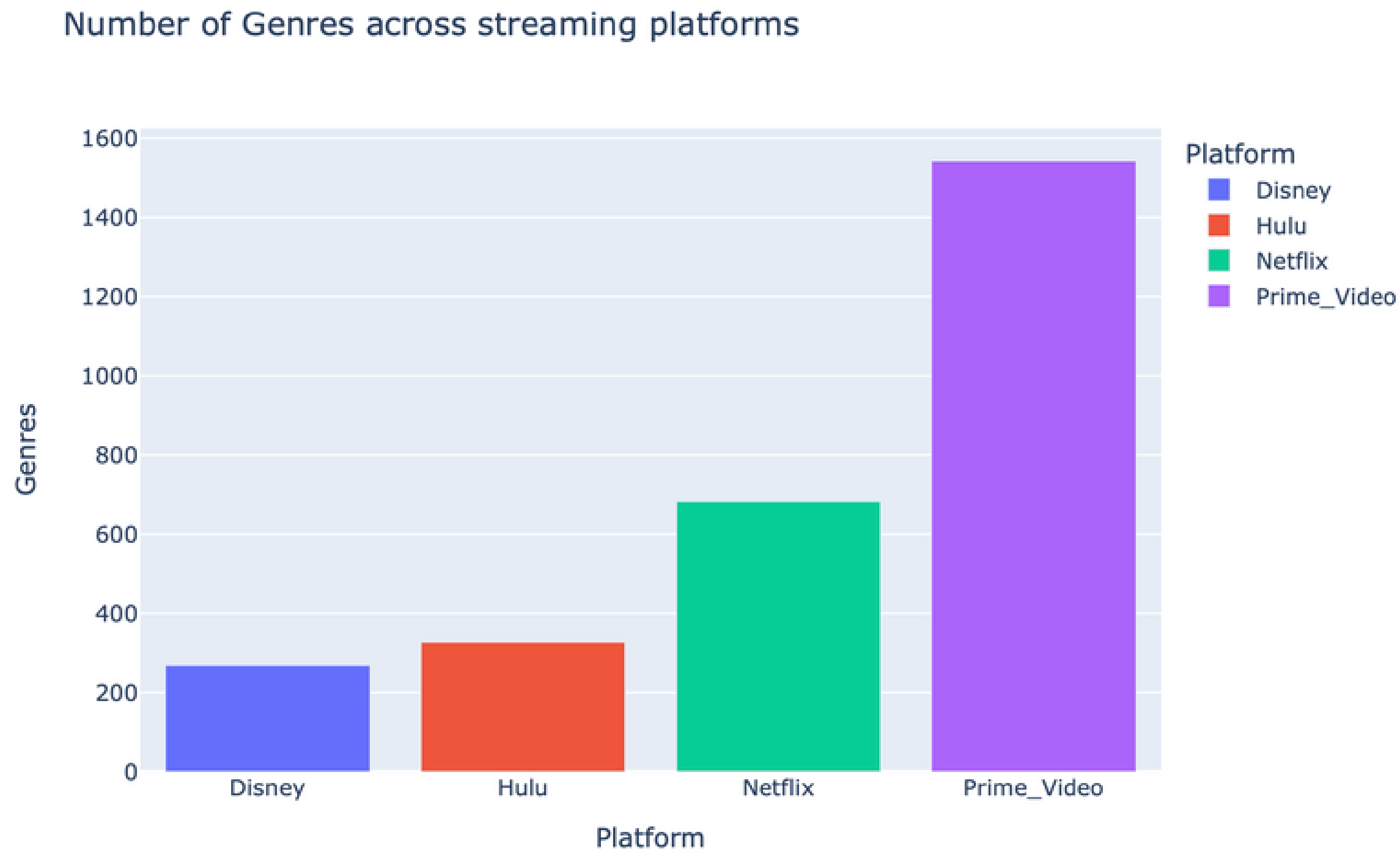
Number of movies across all OTT platforms
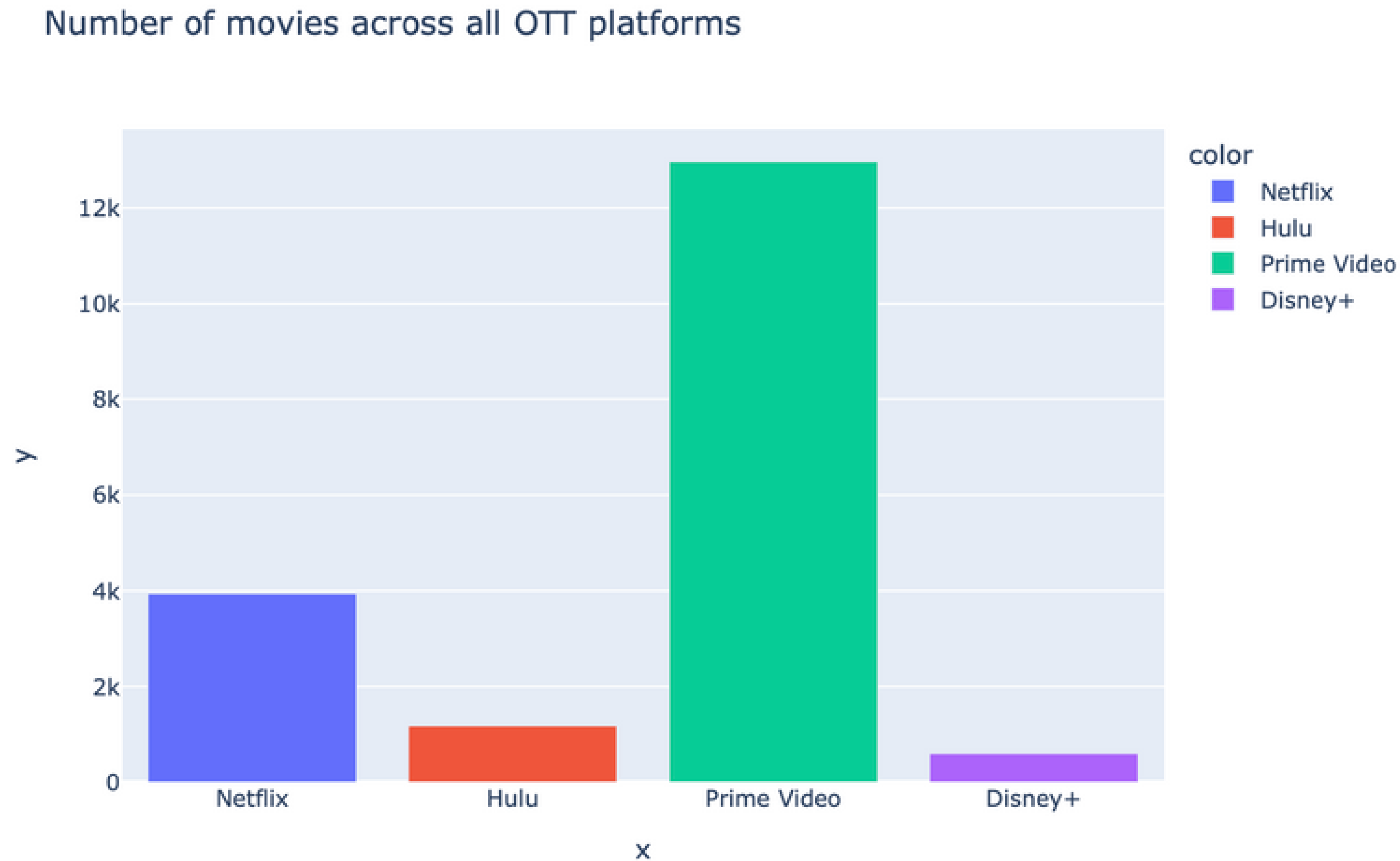
- **Prime Video has the most amount of movies: 12,000**
- **Netflix has around 4,000 movies**
- **Hulu has around 1,000 movies**
- **Disney+ has the least amount of movies: 500**
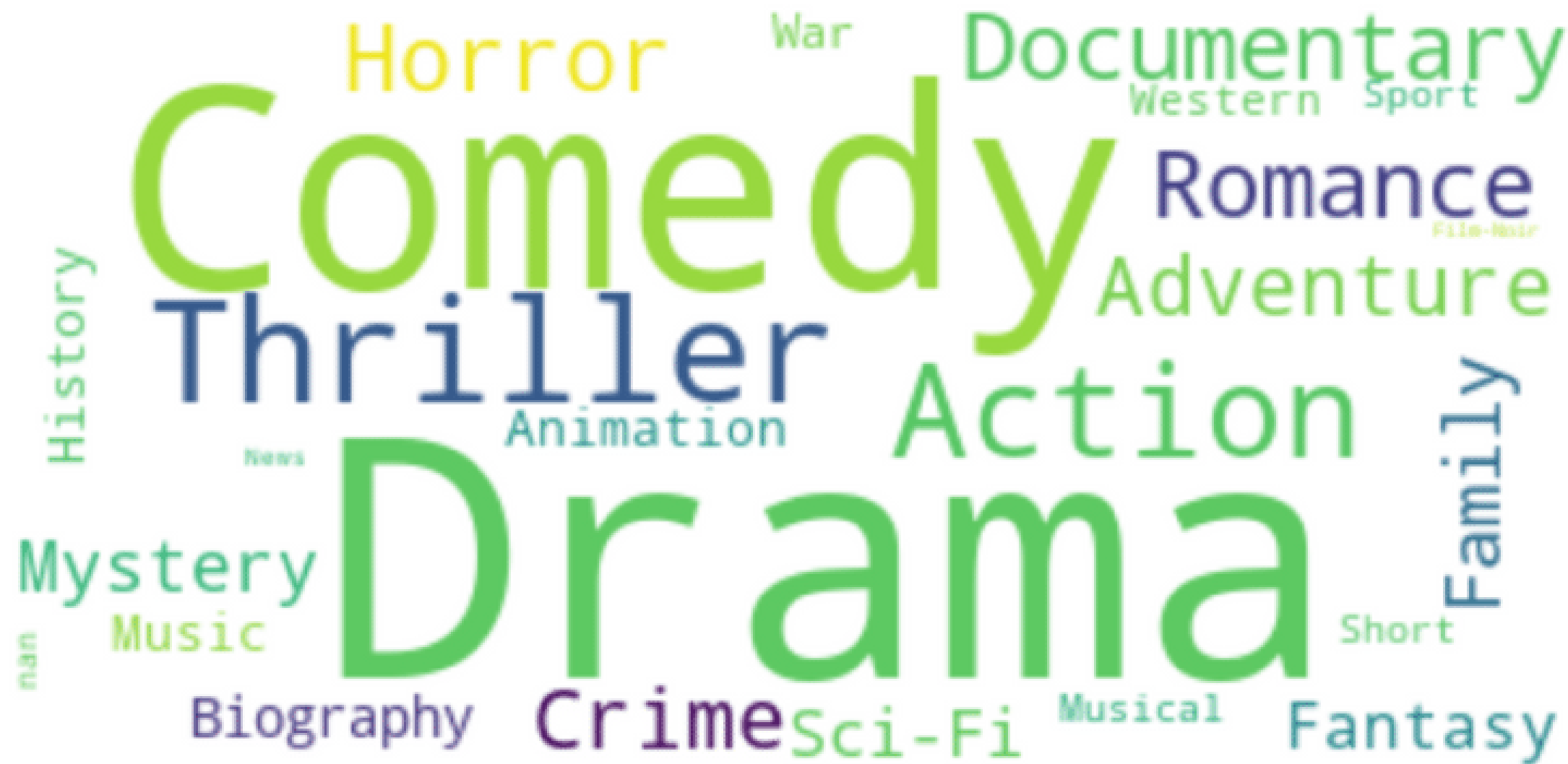
NUMBER OF GENRES IN EACH PLATFORM

Number of Genres across streaming platforms

- **Prime Video has the highest variety of genres: 1,550**
- **Netflix has around 700 genres**
- **Hulu has around 350 genres**
- **Disney+ has the least amount of genres: 275**

YEARS FILMS RELEASED
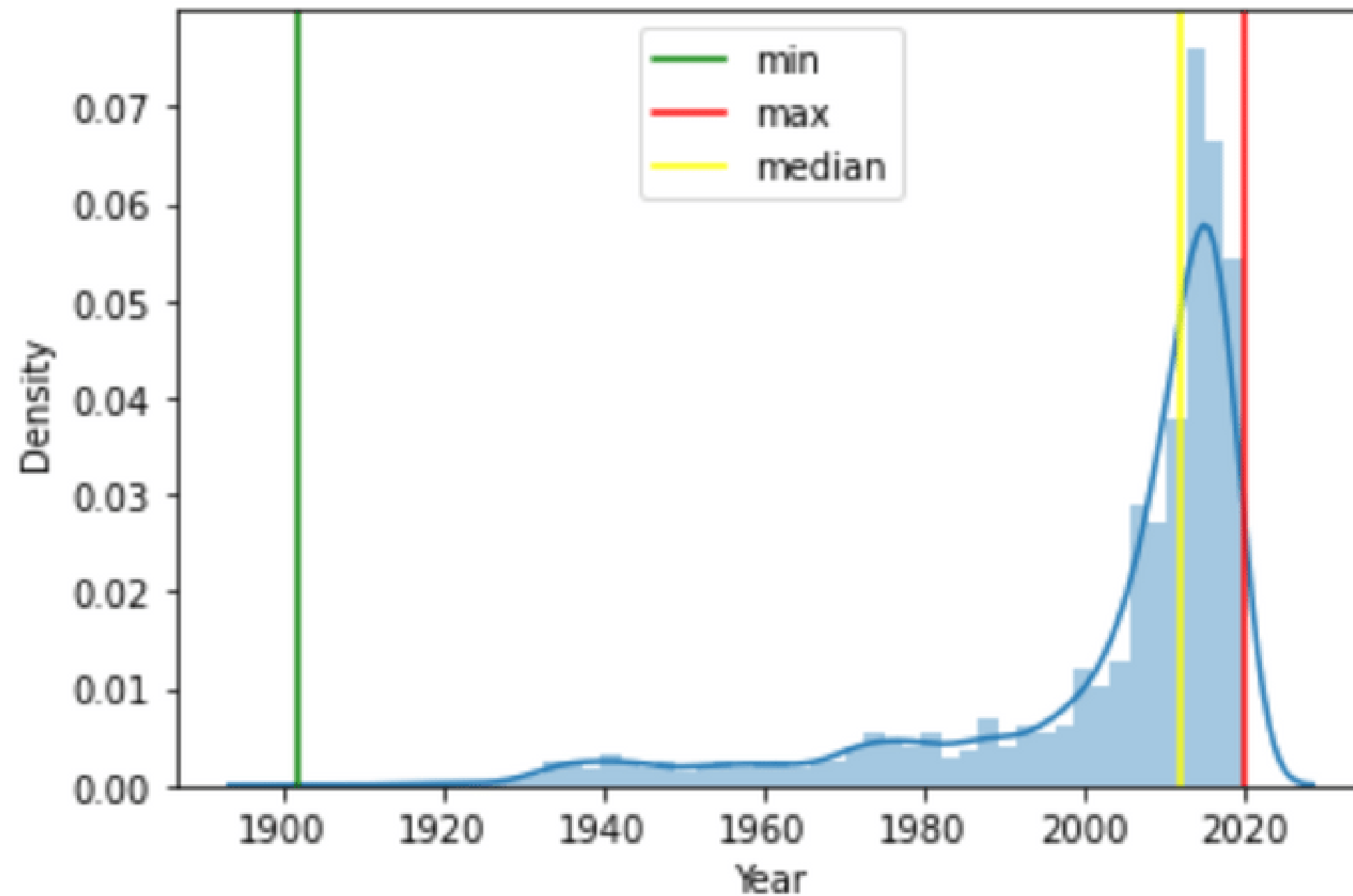
- **Most films released between 2005 and 2020 are found OTT platforms**

- **Start of online sevice**
Netflix:2007
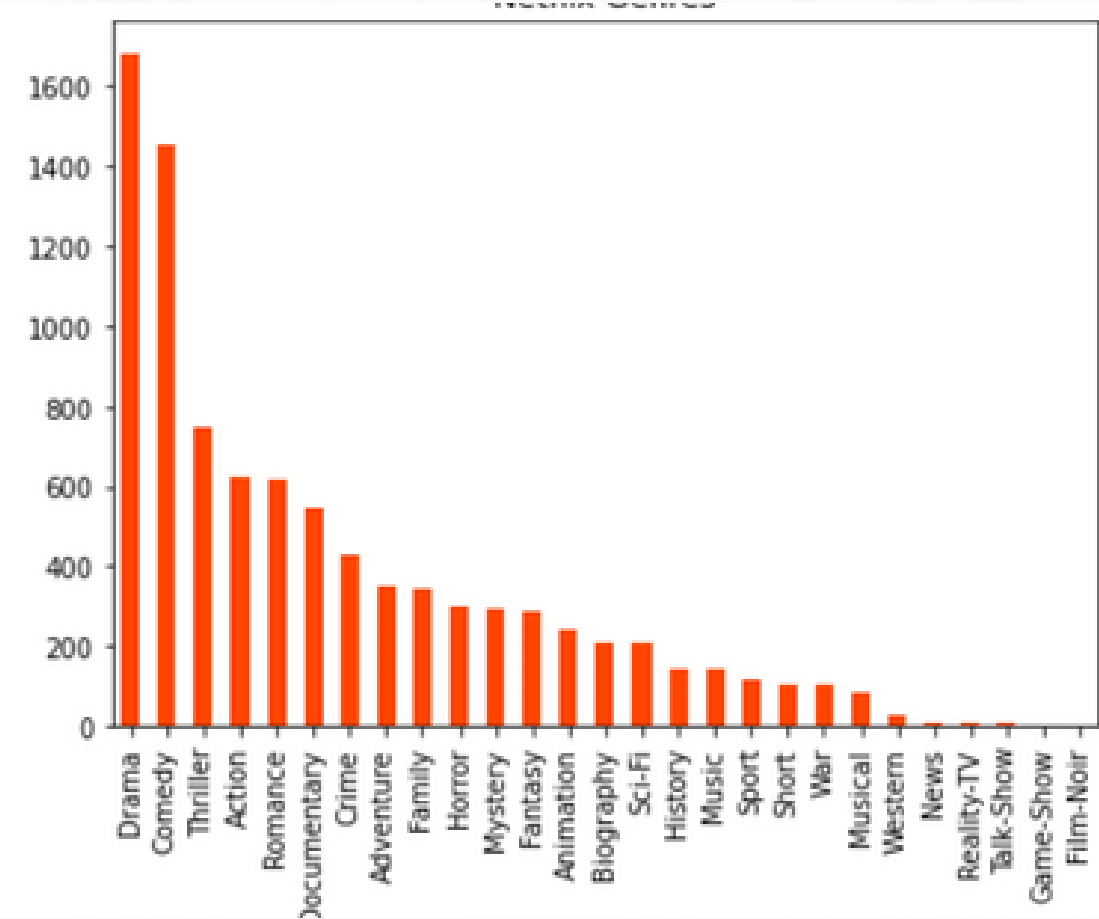**Hulu: 2007**
Prime Video:2006
Disney+:2019

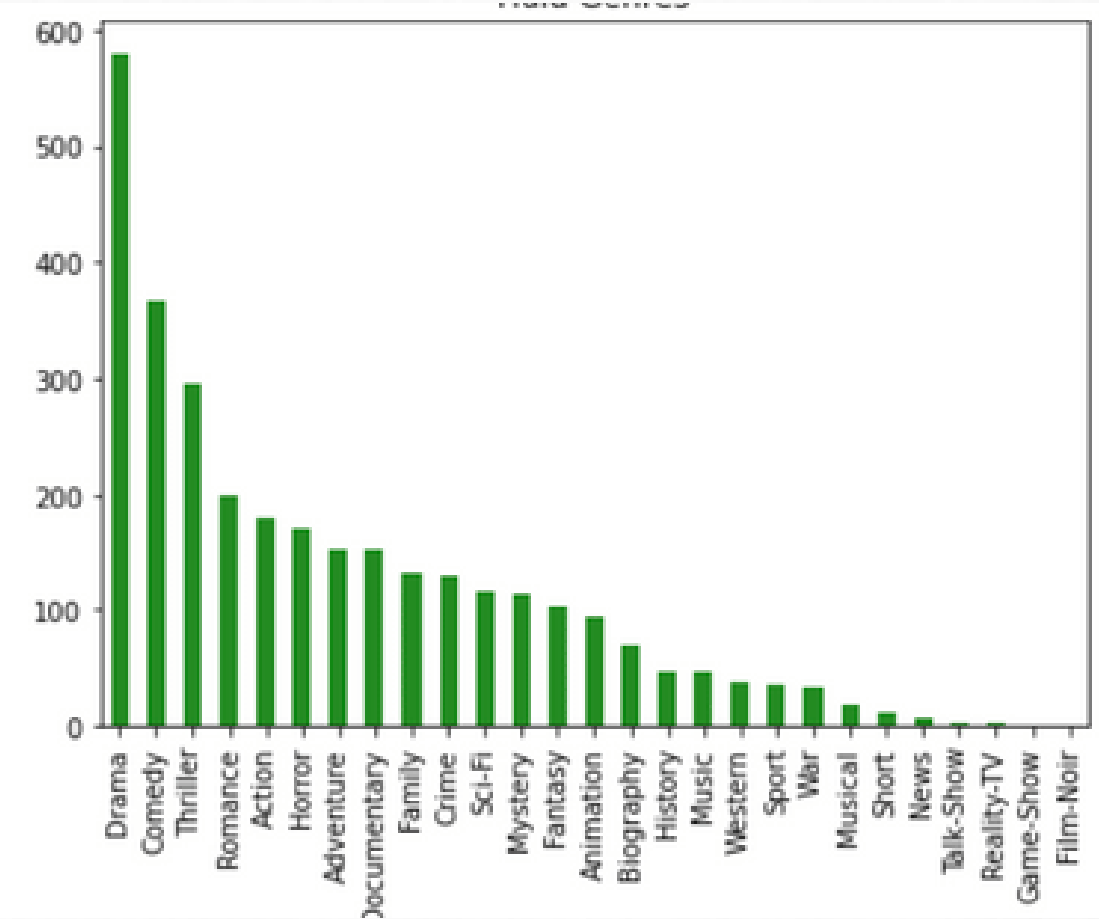# COMMON GENRES IN ALL PLATFORMS

- **Drama, Comedy, Thriller, & Action are the most popular genres across all platforms**
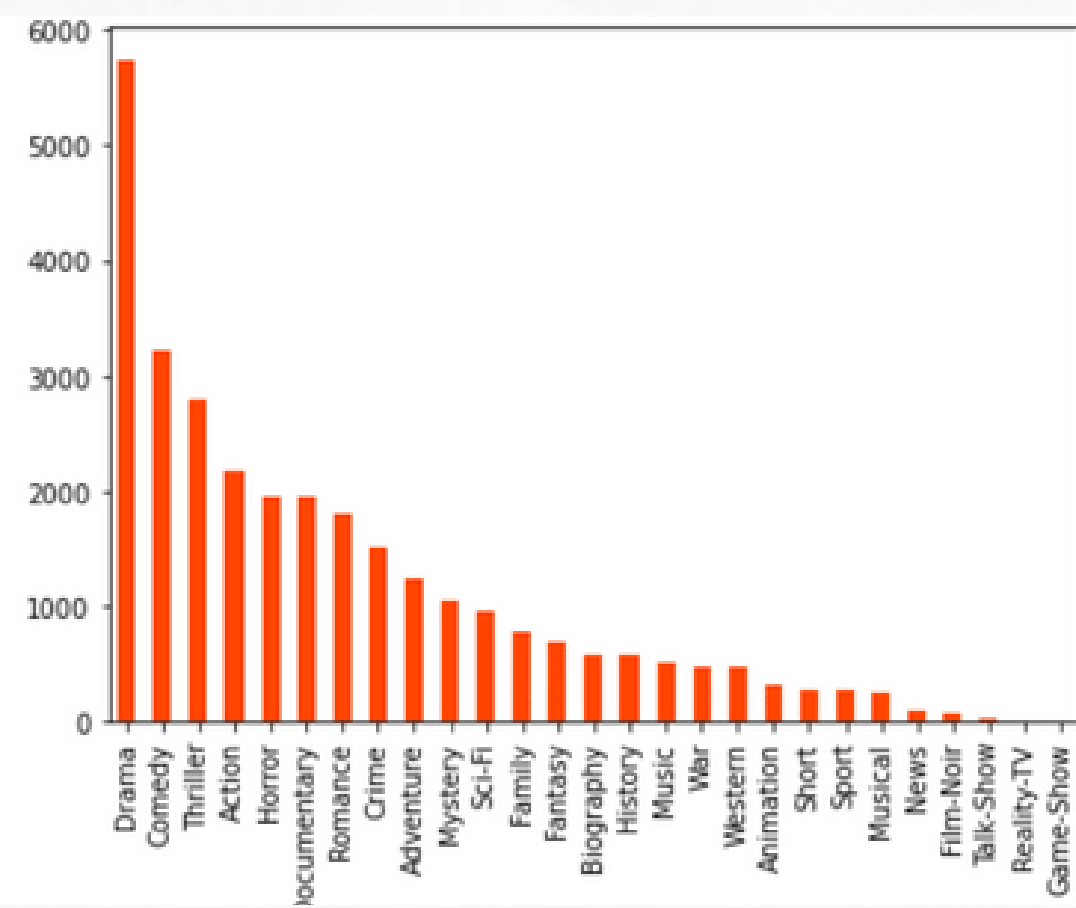
POPULAR GENRES IN EACH PLATFORMS
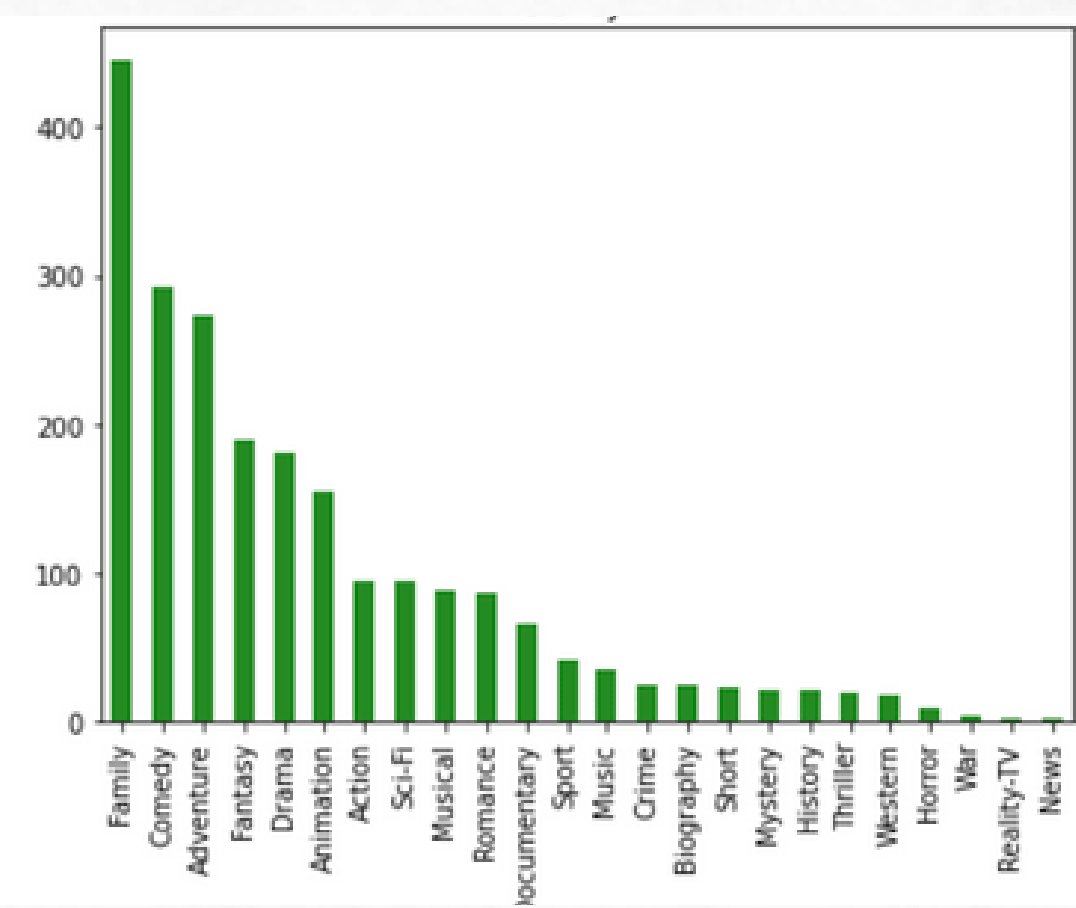

Netflix
Drama
Comedy
Thriller
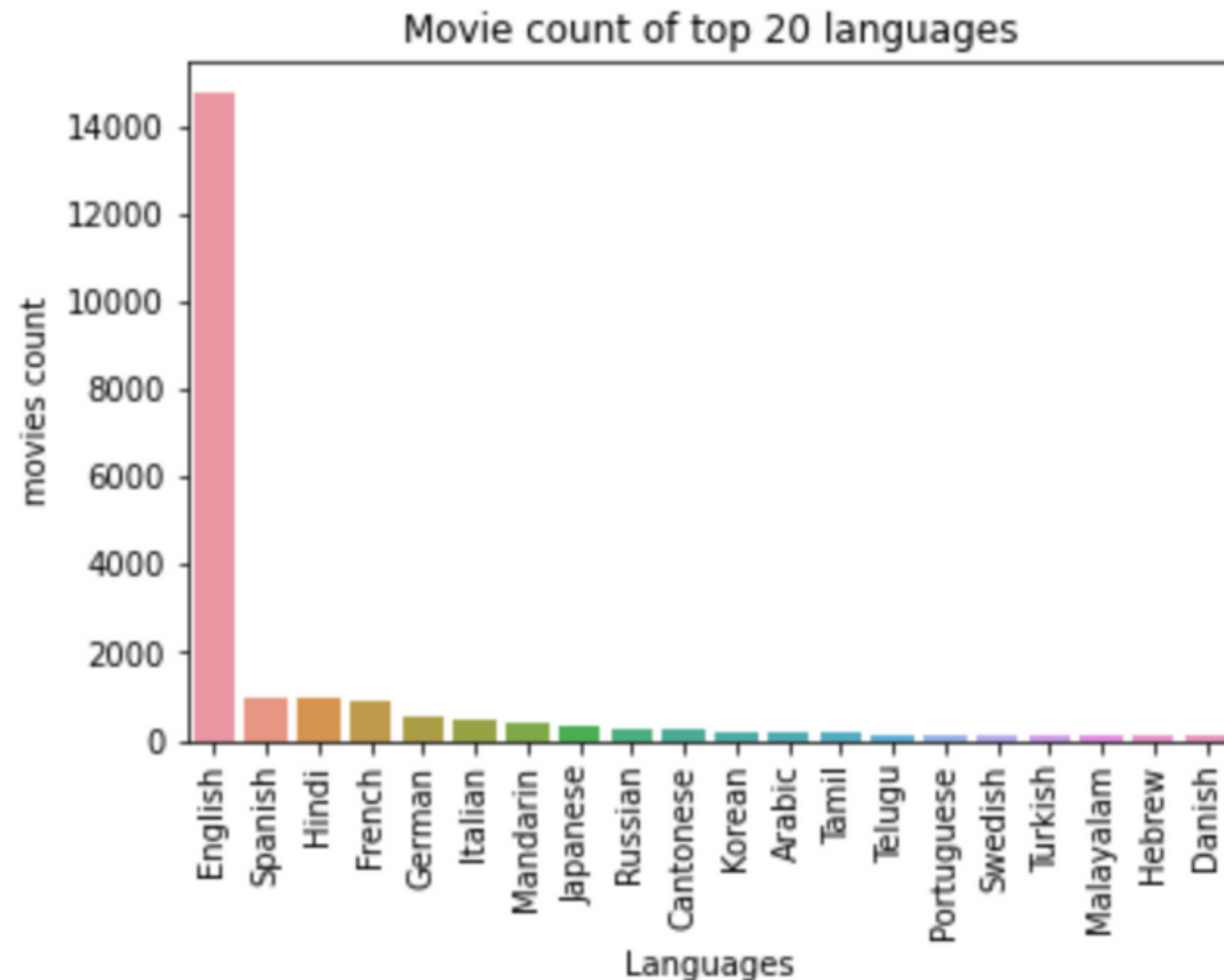Action
Romance

Hulu
Drama
Comedy
Thriller
Romance
Action

Prime
Drama
Comedy
Thriller
Action
Horror

Disney+
Family
Comedy
Adventure
Fantasy
Drama

MOVIE COUNT OF TOP 20 LANGUAGES
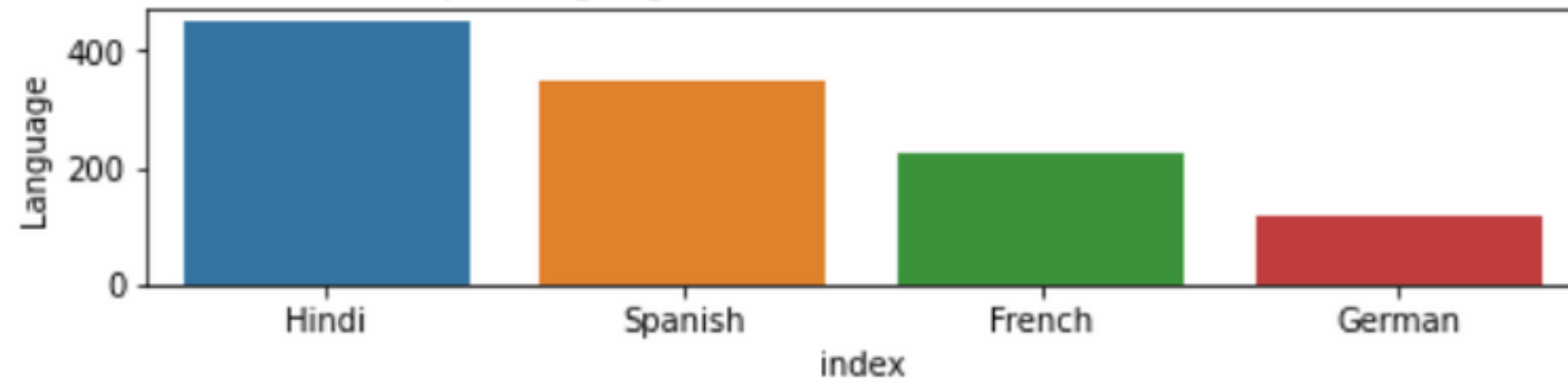

Movie count of top 20 languages

- **Most of movies are from English-speaking countries**
- **Regional Indian languages like Hindi, Tamil, Telugu, & Punjabi demonstrate strong audience reach of all OTT platforms in India**
- **Diverse selection of European languages show popularity of those nations**

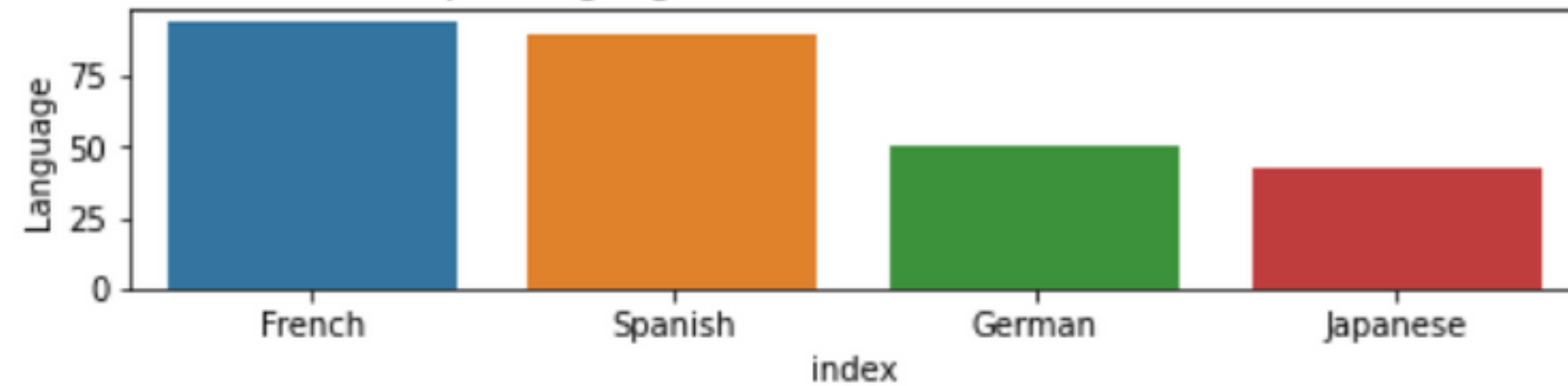# TOP 4 LANGUAGES BASED ON MOVIE COUNT (EXCLUDING ENGLISH)
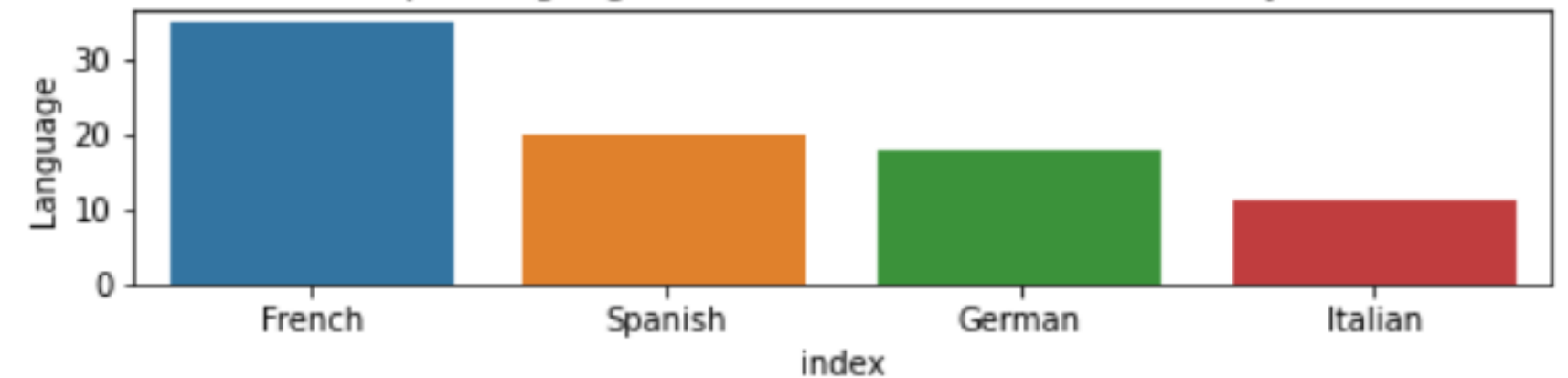
AGE RATING ANALYSIS
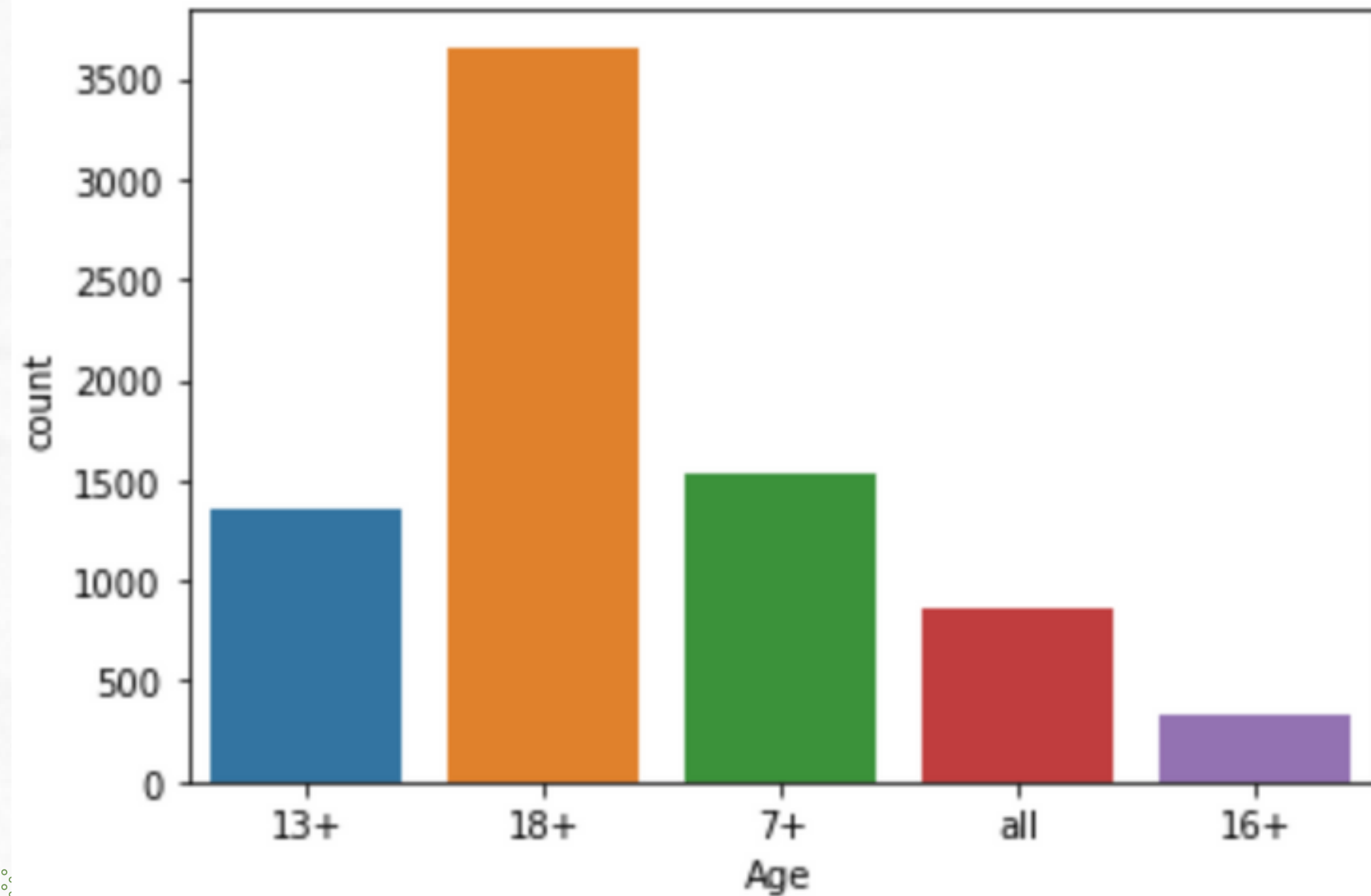
- **Most shows are targeted for those over 18**
- **Followed by age groups of 7+ and 13+ which includes children's movies**

DIRECTOR ANALYSIS

Top 10 Directors based on movie count across all OTT platforms
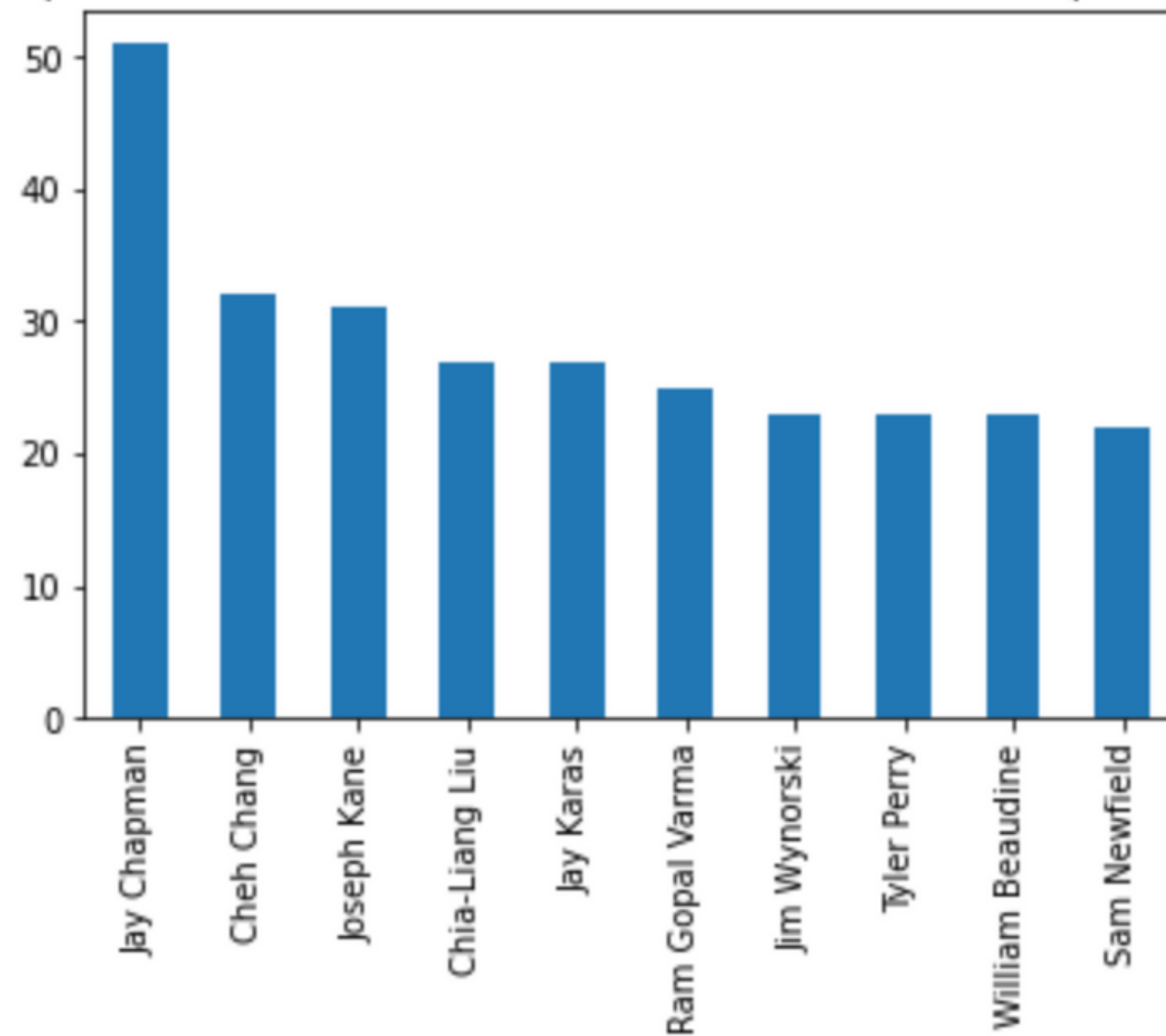
- **Wide variety of 50 movies directed by Jay Chapman can be viewed across all OTT platforms**
- **Followed by Joseph Kane & Cheh Chang, who directed a little over 30 movies**

VARIOUS GENRES DIRECTED BY TOP 10 DIRECTORS

Various Genres directed by top 10 directors
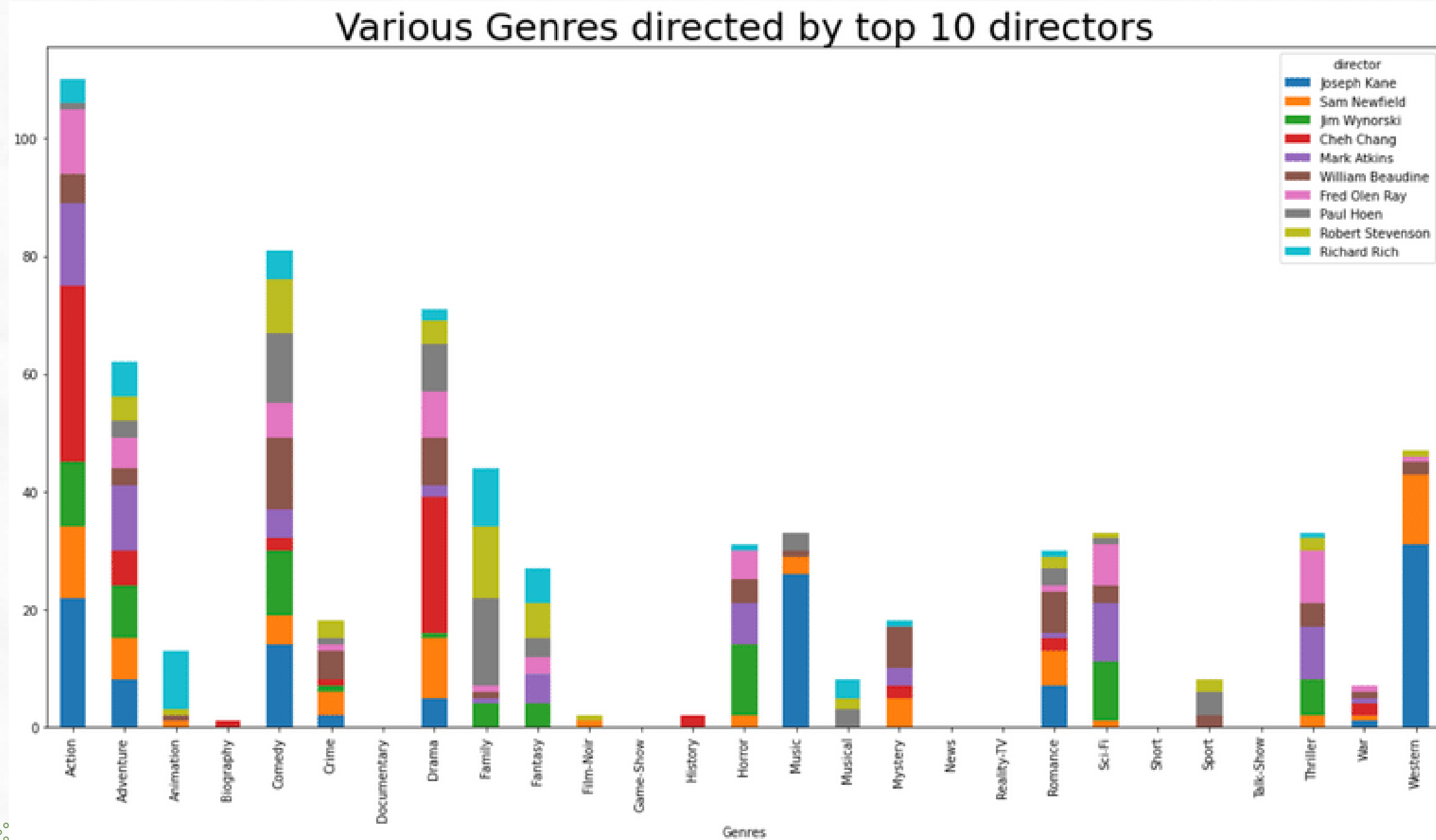
- **Most action, comedy, music, & western films likely directed by Joseph Kane**
- **Cheh Chang also directed numerous action & drama films**
- **Thriller films directed by Fred Olen Ray & Mark Atkins**
- **Films in nearly every one of the categories are directed by William Beaudine**

OTT MOVIES RECOMMENDATION MODEL

Recommendation Systems work based on the similarity between either the content or the users who access the content.

There are several ways to measure the similarity between two items. The recommendation systems use this similarity matrix to recommend the next most similar product to the user.

MOVIE RECOMMENDATION MODEL

```
In [35]: feature_Genre = data["Genres"].tolist()

         tfidf_Genre = text.TfidfVectorizer(input=feature_Genre, stop_words="english")

         tfidf_matrix_Genre = tfidf_Genre.fit_transform(data["Genres"].values.astype('U'))

         similarity_Genre = cosine_similarity(tfidf_matrix_Genre)
```

```
In [41]: def movie_recommendation(title):
             index = indices[title]
             similarity_scores = list(enumerate(similarity_Lang[index]))
             similarity_scores_Genre = list(similarity_Genre[index])
             similarity_scores_Age = list(similarity_Age[index])
             similarity_scores_Country = list(similarity_Country[index])
             similarity_scores_Lang = pd.DataFrame(similarity_scores.columns = ["Index","Similarity_Score_Lang"])
             similarity_scores_Lang.set_index("Index", inplace = True)
             similarity_scores_Lang["Similarity_Score_Genre"] = similarity_scores_Genre
             similarity_scores_Lang["Similarity_Score_Age"]=similarity_scores_Age
             similarity_scores_Lang["Similarity_Score_Country"]=similarity_scores_Country
             similarity_scores_Lang["Similarity_Score_Final"] = similarity_scores_Lang["Similarity_Score_Genre"] + similarity_scores_Lang[

             similarity_scores = similarity_scores_Lang.sort_values("Similarity_Score_Final", ascending = False).head(11)
             movieindices = similarity_scores.index
             Indices = []

             for i in movieindices:
                 if i != index:
                     Indices.append(i)

             return data[['Platform','Title','Genres','Year','IMDb','Country','Age','Language']].iloc[Indices].sort_values("IMDb", ascendi
```

EXAMPLE MOVIE: INCEPTION

```
In [52]: movie_recommendation("Inception")
```

Out[52]:

	Platform	Title	IMDb	Country	Age	Language	Directors
16216	Disney	Avengers: Endgame	8.4	United States	13+	English,Japanese,Xhosa,German	Anthony Russo,Joe Russo
7209	Prime_Video	Tomorrow	8.0	United States	NaN	English,Japanese,French,Arabic	Roland Emmerich
16231	Disney	Captain America: The Winter Soldier	7.7	United States	13+	English,French	Anthony Russo,Joe Russo
7670	Prime_Video	Déjà Vu	7.1	United States,United Kingdom	13+	English	Tony Scott
4462	Prime_Video	Iron Man 2	7.0	United States	13+	English,French,Russian	Jon Favreau
4462	Disney	Iron Man 2	7.0	United States	13+	English,French,Russian	Jon Favreau
438	Netflix	Austin Powers in Goldmember	6.2	United States	13+	English,Japanese,German,French	Jay Roach
4014	Hulu	02:22:00	5.8	United States	13+	English,French	John Suits
1004	Netflix	Godzilla	5.4	United States,Japan	13+	English,Japanese	Gareth Edwards
8022	Prime_Video	The Dinosaur Project	4.6	United Kingdom	13+	English	Sid Bennett

CONCLUSION

- **By providing a movie recommendation model for their customers, OTT platforms can decide what kinds of movies they should show more to their audience.**
- **On the customer's side, they can discover new movies based on their preferences, across different platforms as well.**

THANK YOU!