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PROJECT TITLE: MOVIE

RECOMMENDATION SYSTEM

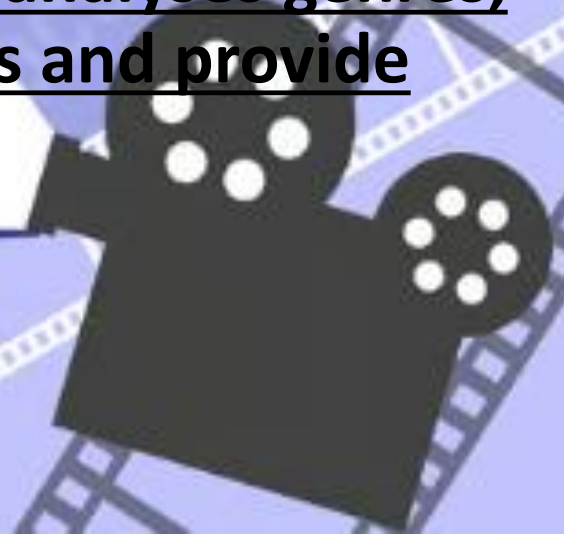


OBJECTIVES:

- To build a Movie Recommendation System using data science techniques.
- To analyze genres, ratings, cast, and user preferences.
- To recommend movies that match user interests.
- To provide useful insights into viewing patterns and movie trends.

INTRODUCTION:

- A data science-based Movie Recommendation System that analyses genres, ratings, cast, and user preferences to suggest similar movies and provide insights on viewing trends.



DATASET OVERVIEW

source: self created

#	Movie Title	Release Month	Release Year	Genre	Type	Country of Origin	Language	Duration (min)	Director	Cast	IMDb Rating	TomatoScore	Collection (Number of Items)	Targeted by Genres	Suitability	Distributing Platform	Awards Won	Keywords / Themes	
1	Titanic	December	1997	Romance/Drama	Movie	USA	English	195	James Cameron	Leonardo DiCaprio, Kate Winslet	7.9	89	2200	5000000	Millennial, Gen Z	PG-13	Disney+	Oscar	Romance, Disaster
2	Inception	July	2010	Sci-Fi/Thriller	Movie	USA	English	148	Christopher Nolan	Leonardo DiCaprio, Joseph Gordon-Levitt	8.8	87	830	8000000	Gen Z, Millennials	PG-13	Netflix	Oscar	Dream, Thriller
3	Parasite	May	2019	Thriller/Drama	Movie	South Korea	Korean	132	Bong Joon-ho	Song Kang, Park So-dam	8.6	99	258	4000000	Gen Z, Millennials	R	Prime Video	Oscar	Thriller, Class
4	Vincenzo	February	2021	Crime/Comedy	Series	South Korea	Korean	80	Kim Hee-won	Song Joong-ki	8.4			2000000	Gen Z	16+	Netflix	Baeksang	Mafia, Romance
5	Queen of Tears	March	2024	Romance/Drama	Series	South Korea	Korean	75	Jang Young-ho	Kim Soo-hyun, Lee Chae-young	9.1			1800000	Gen Z, Millennials	16+	Netflix	K-Drama /	Romance, Drama
6	When I Fly	June	2023	Romance/Drama	Series	China	Mandarin	45	Mao De Si	Zhou Yi Rao	8.3			1000000	Gen Z	13+	Youku/Netflix	Asian Drama	High School
7	Avengers: Endgame	April	2019	Action/Sci-Fi	Movie	USA	English	181	Anthony Russo, Joe Russo	Robert Downey Jr., Chris Evans	8.4	94	2797	9000000	Gen Z, Millennials	PG-13	Disney+	Oscar	Non-Superhero
8	Dangal	December	2016	Drama/Sports	Movie	India	Hindi	161	Nitesh Tiwari	Aamir Khan	8.3	88	311	6000000	Millennial	U	Netflix	Filmfare Award	Sports, Biography
9	Squid Game	September	2021	Thriller/Drama	Series	South Korea	Korean	55	Hwang Dong-hyuk	Lee Jung-jae	8			5000000	Gen Z, Millennials	18+	Netflix	Emmy Award	Survival, Thriller
10	Interstellar	November	2014	Sci-Fi/Drama	Movie	USA	English	169	Christopher Nolan	Matthew McConaughey, Anne Hathaway	8.6	72	677	7000000	Gen Z, Millennials	PG-13	Prime Video	Oscar	Space, Sci-Fi
11	Crash Landing in Love	December	2019	Romance/Drama	Series	South Korea	Korean	70	Lee Jeong-hyeon	Hyun Bin, Son Ye-jin	8.7			2500000	Gen Z, Millennials	16+	Netflix	Baeksang	Romance, Drama
12	It's Okay to Not Be in Love	June	2020	Romance/Drama	Series	South Korea	Korean	75	Park Shin-yeon	Kim Soo-hyun, Kim Min-ja	8.6			1800000	Gen Z	16+	Netflix	K-Drama /	Romance, Drama
13	Descendants of the Sun	February	2016	Romance/Drama	Series	South Korea	Korean	60	Lee Eung-ik	Song Joong-ki	8.3			2100000	Gen Z, Millennials	16+	Netflix	KBS Drama	Romance, Drama
14	Goblin (Goblin)	December	2016	Fantasy/Romance	Series	South Korea	Korean	75	Lee Eung-ik	Gong Yoo, Kim Gyu-re	8.7			3000000	Gen Z, Millennials	16+	Netflix	Baeksang	Fantasy, Romance
15	My Love From the Daisies	December	2013	Romance/Drama	Series	South Korea	Korean	60	Jang Tae-yong	Kim Soo-hyun, Lee Chae-young	8.2			1500000	Millennial	13+	Netflix	K-Drama /	Fantasy, Romance
16	Business Proposal	February	2022	Romance/Drama	Series	South Korea	Korean	60	Park Seon-yeon	Ahn Hyo-seon	8.1			2000000	Gen Z	13+	Netflix	Asian Drama	Romance, Comedy
17	Legend of the Blue Sea	November	2016	Fantasy/Romance	Series	South Korea	Korean	65	Jin Hyuk	Lee Min-ho	8.1			1700000	Gen Z, Millennials	13+	Netflix	SBS Drama	Fantasy, Romance
18	Extraordinary	October	2019	Fantasy/Romance	Series	South Korea	Korean	60	Kim Sang-ik	Kim Hye-yoon	7.9			1300000	Gen Z	13+	Netflix	MBC Drama	Fantasy, Romance

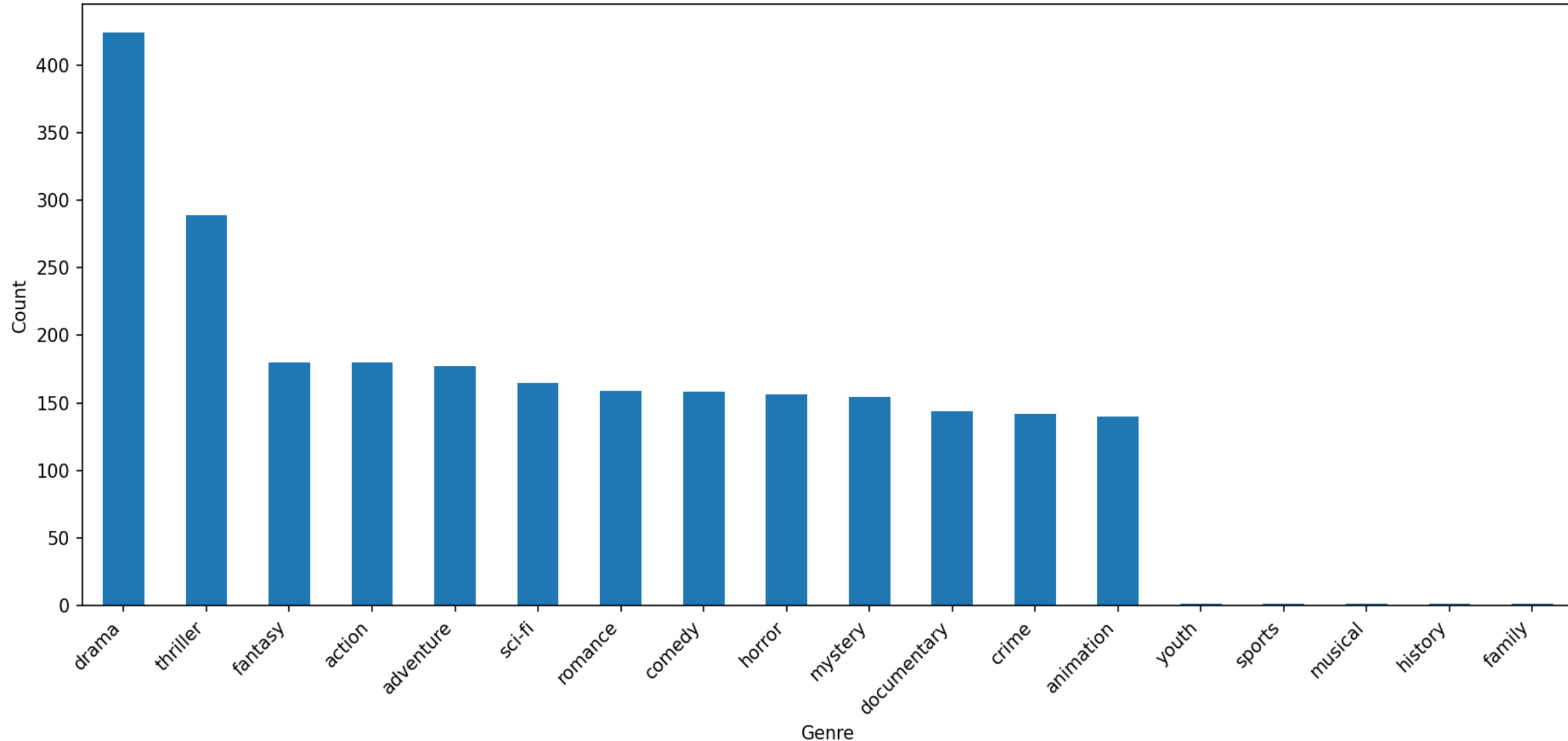
CODE FUNCTIONS:

- Load and clean the movie data.
- Analyze genres, ratings, and trends with charts.
- Find movie similarities using content features.
- Suggest movies based on user input.
- Provide movie links for trailers

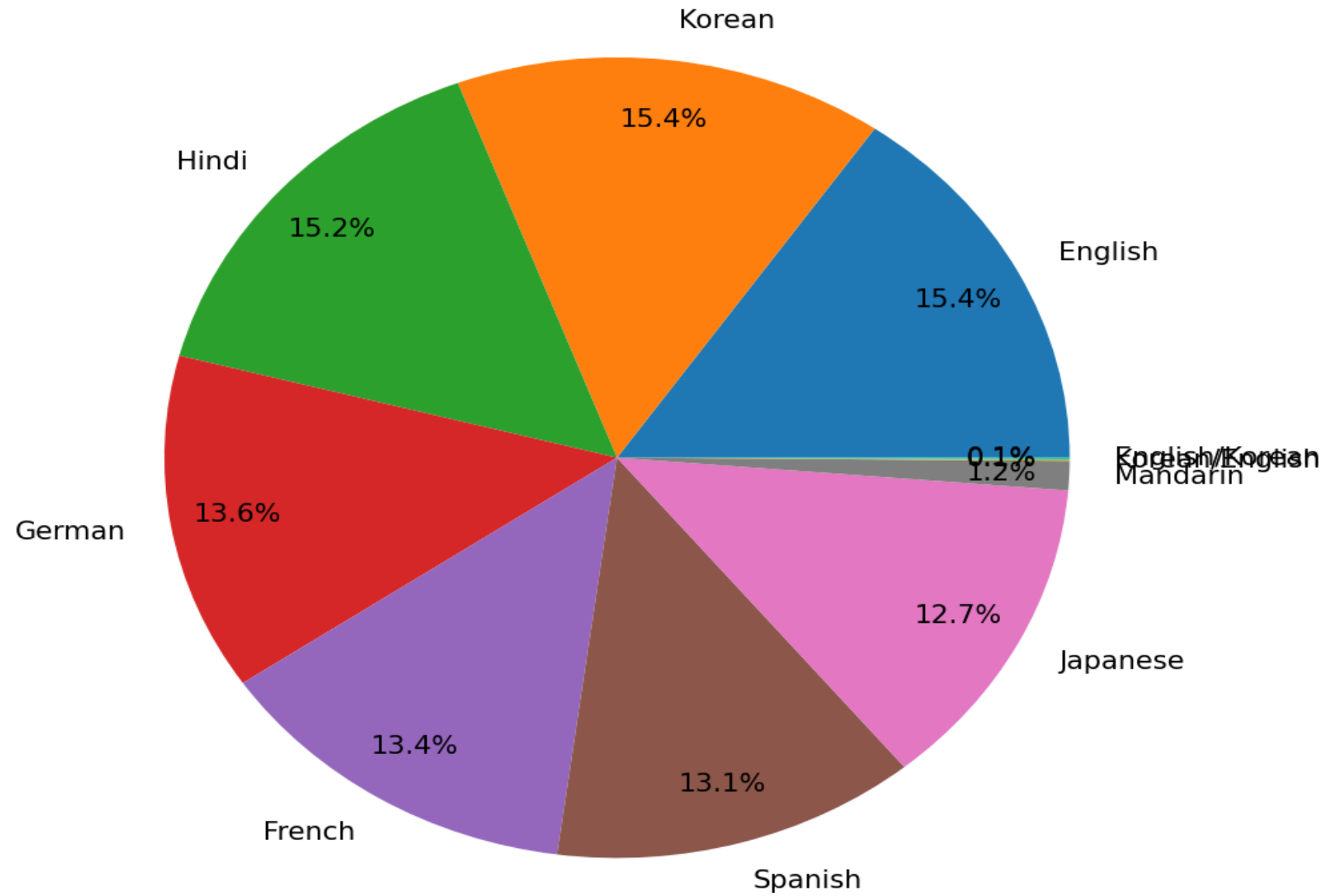


DATA VISUALIZATIONS:

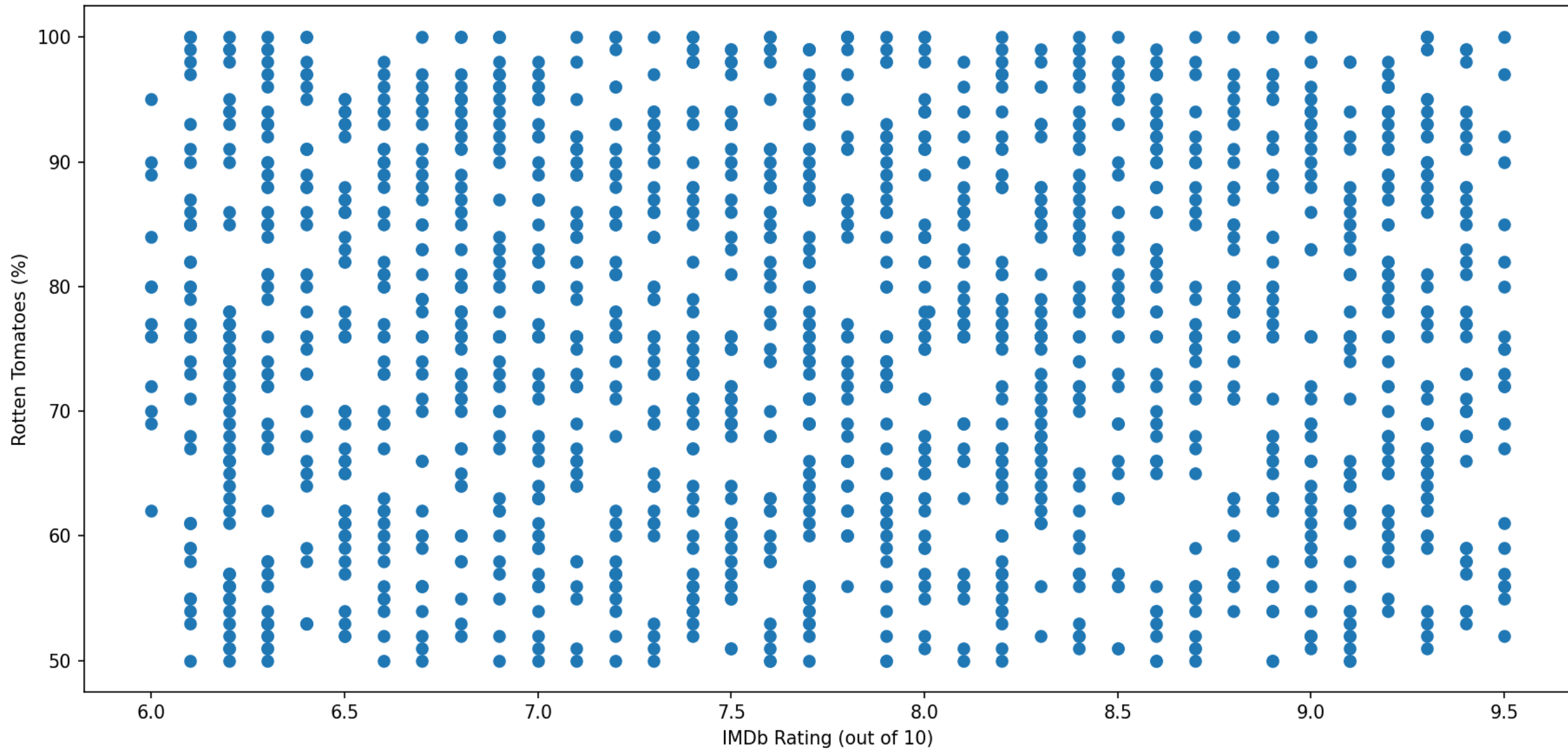
Top Genres Distribution



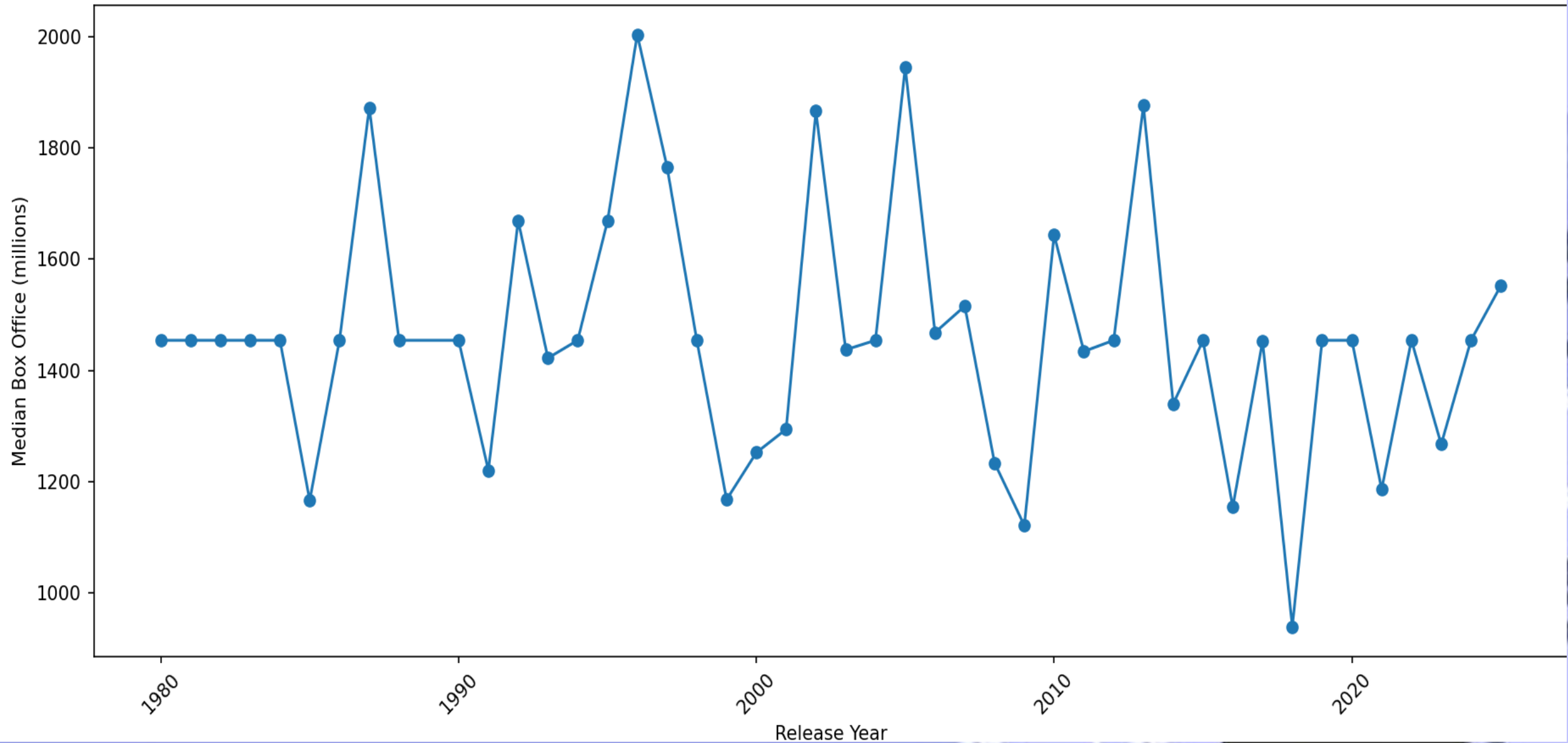
Top Languages Distribution



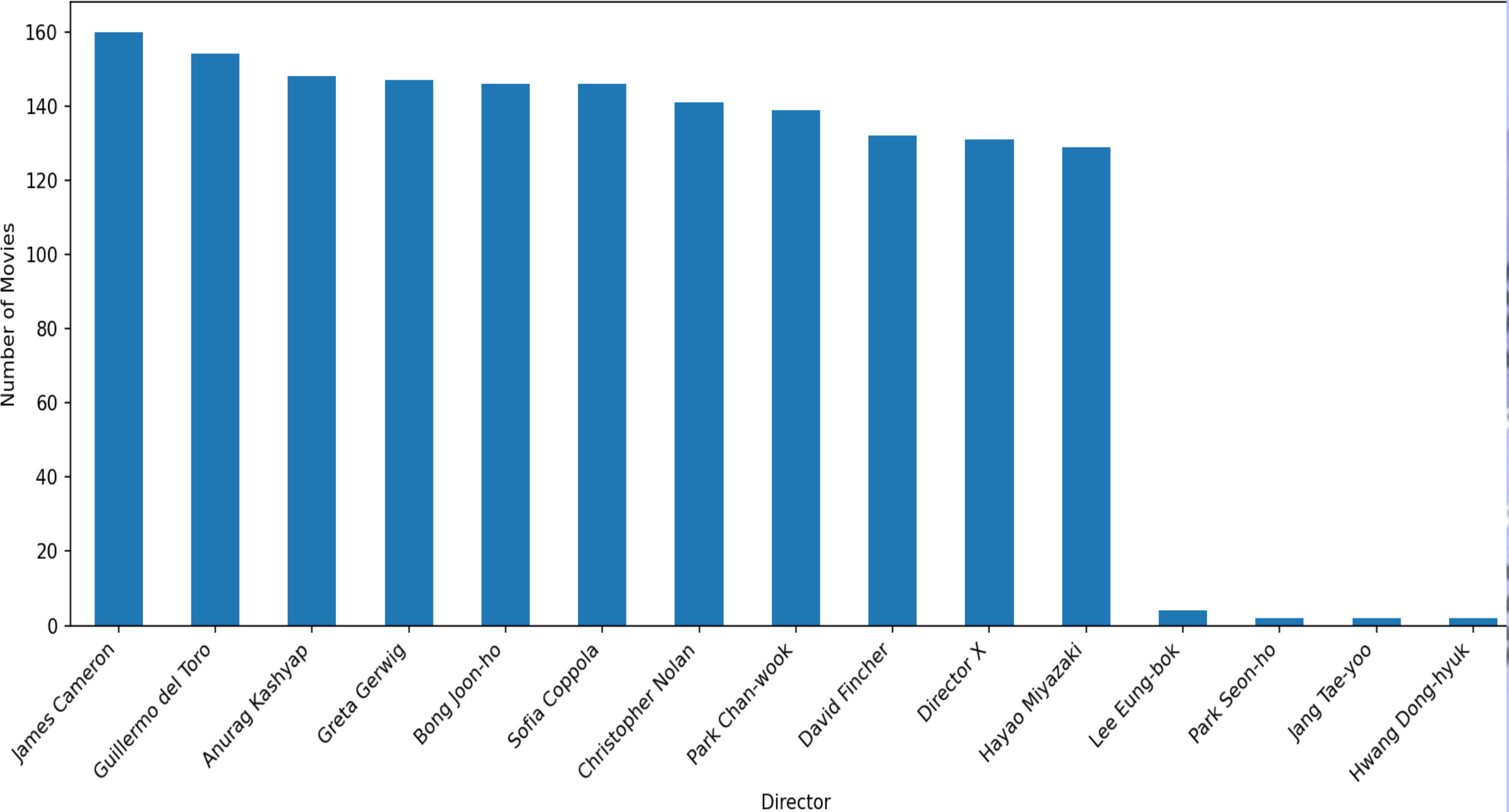
IMDb Rating vs Rotten Tomatoes (%)



Median Box Office by Release Year



Top Directors by Movie Count



USER INTERACTION

- This project reduces manual searching by suggesting movie according to the user reference by asking few questions quite easy to answer.
- It also asks for if the user need movie link and directs them to movie.

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Welcome to the Movie Recommendation System 🎬
Enter a genre you like (e.g., Action, Comedy, Drama): Comedy
Enter preferred language (e.g., English, Hindi, Korean): Hindi
Enter minimum IMDb rating (e.g., 7.5): 7.8

🌟 Recommended Movies for You 🌟
```

	Movie Title		Genre	Language	IMDb Rating	Director
166	3 Idiots		comedy drama	Hindi	8.4	Rajkumar Hirani
241	Shattered Memories	71	crime comedy drama	Hindi	9.5	Christopher Nolan
323	Beyond Horizon	324	crime comedy drama	Hindi	8.0	Sofia Coppola
360	Neon Nights	361	crime comedy drama	Hindi	9.3	Park Chan-wook
374	Silent Echo	375	crime comedy drama	Hindi	8.5	David Fincher
392	Fading Stars	393	crime comedy drama	Hindi	8.3	David Fincher
447	The Last Voyage	448	crime comedy drama	Hindi	9.2	Guillermo del Toro
527	Eternal Shadows	528	crime comedy drama	Hindi	9.1	Guillermo del Toro
906	The Last Voyage	907	crime comedy drama	Hindi	8.8	Hayao Miyazaki
950	Crimson Dawn	951	crime comedy drama	Hindi	8.5	Bong Joon-ho

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Do you want a link for any movie? Enter the exact movie title (or 'no' to skip): 3 Idiots

🔗 Here's a YouTube link for 3 Idiots: https://www.youtube.com/results?search_query=3+Idiots+trailer
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Insights:

Recommendations for: Titanic

	Movie Title	Genre	similarity_score
0	The Last Voyage 960	mystery	0.525
1	Fading Stars 694	action adventure	0.481
2	The Last Voyage 1205	fantasy	0.446
3	The Last Voyage 693	documentary	0.438
4	Shattered Memories 123	fantasy	0.435
5	Neon Nights 728	romance drama	0.425
6	The Last Voyage 1040	horror	0.423
7	Fading Stars 1483	documentary	0.420

Recommendations for: Inception

	Movie Title	Genre	similarity_score
0	Neon Nights 1487	sci-fi thriller	0.292
1	Fading Stars 557	action adventure	0.264
2	Shattered Memories 57	sci-fi thriller	0.239
3	Hidden Truths 599	sci-fi thriller	0.238
4	The Last Voyage 1426	sci-fi thriller	0.232
5	Shattered Memories 384	sci-fi thriller	0.228
6	Eternal Shadows 524	romance drama	0.227

5	Shattered Memories 384	sci-fi thriller	0.228
6	Eternal Shadows 524	romance drama	0.227
7	The Last Voyage 39	sci-fi thriller	0.225

Recommendations for: Parasite

	Movie Title	Genre	similarity_score
0	Dreamscape 577	mystery	0.610
1	Neon Nights 100	horror	0.603
2	Crimson Dawn 433	mystery	0.547
3	Beyond Horizon 1285	sci-fi thriller	0.541
4	Crimson Dawn 1217	fantasy	0.536
5	Crimson Dawn 1078	animation	0.519
6	Neon Nights 629	horror	0.516
7	Eternal Shadows 897	documentary	0.515

Regression RMSE on Recommendation Score: 8.918749678951027

Saved sample recommendations to C:\Users\akank\sample_recommendations.csv

FUTURE SCOPE / CONCLUSION:

- Add collaborative filtering for better personalization
- Integrate real-time data from streaming platforms
- Improve recommendations with deep learning models
- The project creates a Movie Recommendation System that suggests movies based on user preferences and trends. It makes finding movies easier, faster, and more personalized.



SUMMARY:

- THIS PROJECT:
 - Analyzes a movie dataset to identify patterns in genres, ratings, languages, and box office trends.
 - Data Collection and Data Cleaning.
 - Automates cleaning and exploration of data for faster insights.
 - Uses **TF-IDF & Cosine Similarity** to recommend movies based on content features (genre, cast, director, etc.).
 - Reduces manual searching by suggesting personalized movie options.
 - Allows **user interaction** to input preferences (genre, language, rating) and get tailored results
 - Provides **YouTube trailer links** for selected movies to enhance user experience.
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