

Microsoft Movie Analysis

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Overview

- Microsoft would like to enter the Original Content Creation space and needs data backed recommendations for this goal.
- They have invested in a film studio and want to know how they should approach their first project and why?

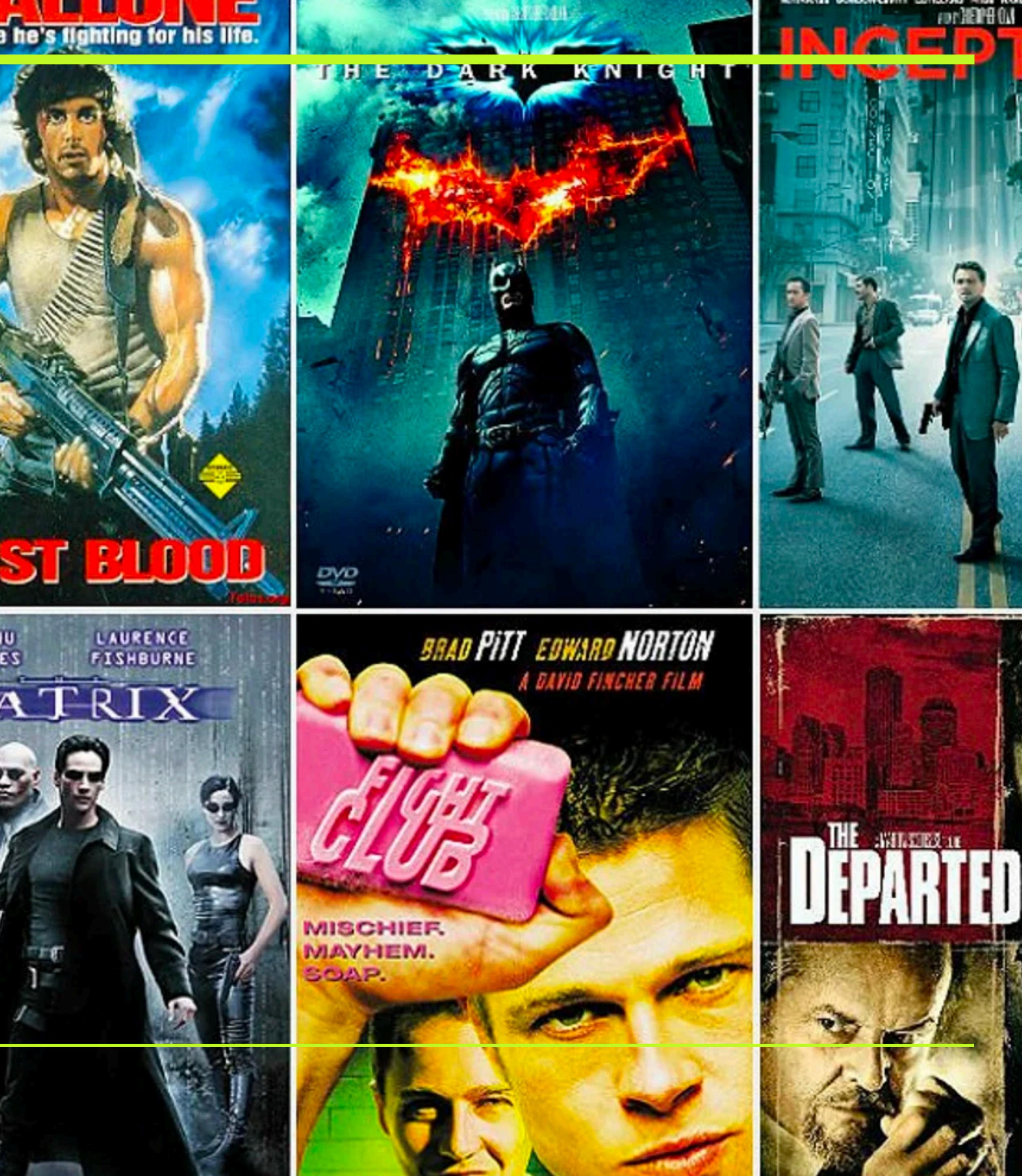
Industry

- Many of the major movie production companies are based in the USA.
- In recent times, movies being released on foreign land has garnered more financial returns than domestically because of these markets growth. China being the fastest growing
- Starwars has claimed the highest earning movie.
 - It claims this position not just because of it's Gross but also because of the major role Merchandise plays in revenue
- Only a few Studios control the top positions in highest grossing movies for one reason which I'll reveal with our data and I believe Microsoft can as well.

Dataset #1

Dataset #1 Summary

- Focused on Gross Domestic and Foreign
- Foreign Data was missing but replaced it with 0.
- Consisted of 5 Columns
 - Title, Studio, D-Gross, F-Gross, Year
- **Goal with Data:**
 - It provides us with Financial Data on plenty of movies.
 - Can we get the top performing movies domestically, foreign and totally?



Dataset #1 Analysis

	domestic_gross	foreign_gross	year
count	3387.0	3387.0	3387.0
mean	28508206.0	45029795.0	2014.0
std	66755749.0	112684346.0	2.0
min	0.0	0.0	2010.0
25%	111500.0	0.0	2012.0
50%	1300000.0	1500000.0	2014.0
75%	27500000.0	29150000.0	2016.0
max	936700000.0	960500000.0	2018.0

- Year Range: 2010 - 2018
- Domestic Sum - 96557293580.0
- **Foreign Sum** - 152515914276.5
- Sorted Data based on gross
 - First Domestically
 - Then Foreign
- *Results were very different*

Best Performing Movies by Total Gross

		title	studio	domestic_gross	foreign_gross	year	total_gross
727		Marvel's The Avengers	BV	623400000.0	895500000.0	2012	1.518900e+09
1875		Avengers: Age of Ultron	BV	459000000.0	946400000.0	2015	1.405400e+09
3080		Black Panther	BV	700100000.0	646900000.0	2018	1.347000e+09
328		Harry Potter and the Deathly Hallows Part 2	WB	381000000.0	960500000.0	2011	1.341500e+09
2758		Star Wars: The Last Jedi	BV	620200000.0	712400000.0	2017	1.332600e+09
3081		Jurassic World: Fallen Kingdom	UNI.	417700000.0	891800000.0	2018	1.309500e+09
1127		Frozen	BV	400700000.0	875700000.0	2013	1.276400e+09
2759		Beauty and the Beast (2017)	BV	504000000.0	759500000.0	2017	1.263500e+09
3082		Incredibles 2	BV	608600000.0	634200000.0	2018	1.242800e+09
1128		Iron Man 3	BV	409000000.0	805800000.0	2013	1.214800e+09
1876		Minions	UNI.	336000000.0	823400000.0	2015	1.159400e+09
2322		Captain America: Civil War	BV	408100000.0	745200000.0	2016	1.153300e+09
3083		Aquaman	WB	335100000.0	812700000.0	2018	1.147800e+09
329		Transformers: Dark of the Moon	P/DW	352400000.0	771400000.0	2011	1.123800e+09
728		Skyfall	SONY	304400000.0	804200000.0	2012	1.108600e+09
1477		Transformers: Age of Extinction	PAR.	245400000.0	858600000.0	2014	1.104000e+09
729		The Dark Knight Rises	WB	448100000.0	636800000.0	2012	1.084900e+09
0		Toy Story 3	BV	415000000.0	652000000.0	2010	1.067000e+09
2323		Rogue One: A Star Wars Story	BV	532200000.0	523900000.0	2016	1.056100e+09
330		Pirates of the Caribbean: On Stranger Tides	BV	241100000.0	804600000.0	2011	1.045700e+09
2761		Despicable Me 3	UNI.	264600000.0	770200000.0	2017	1.034800e+09
2324		Finding Dory	BV	486300000.0	542300000.0	2016	1.028600e+09
1		Alice in Wonderland (2010)	BV	334200000.0	691300000.0	2010	1.025500e+09
2325		Zootopia	BV	341300000.0	682500000.0	2016	1.023800e+09

Sorted by Foreign Gross

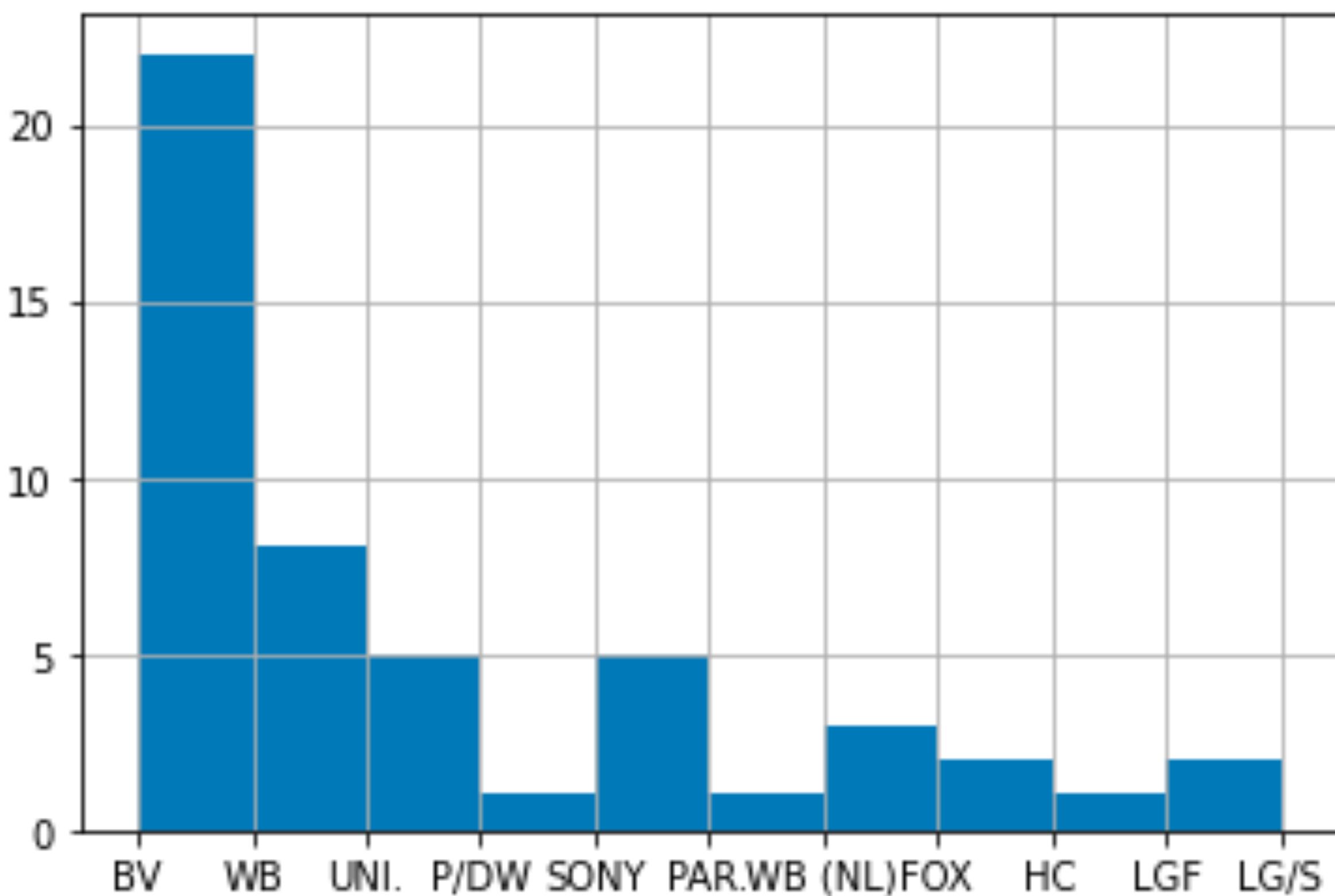
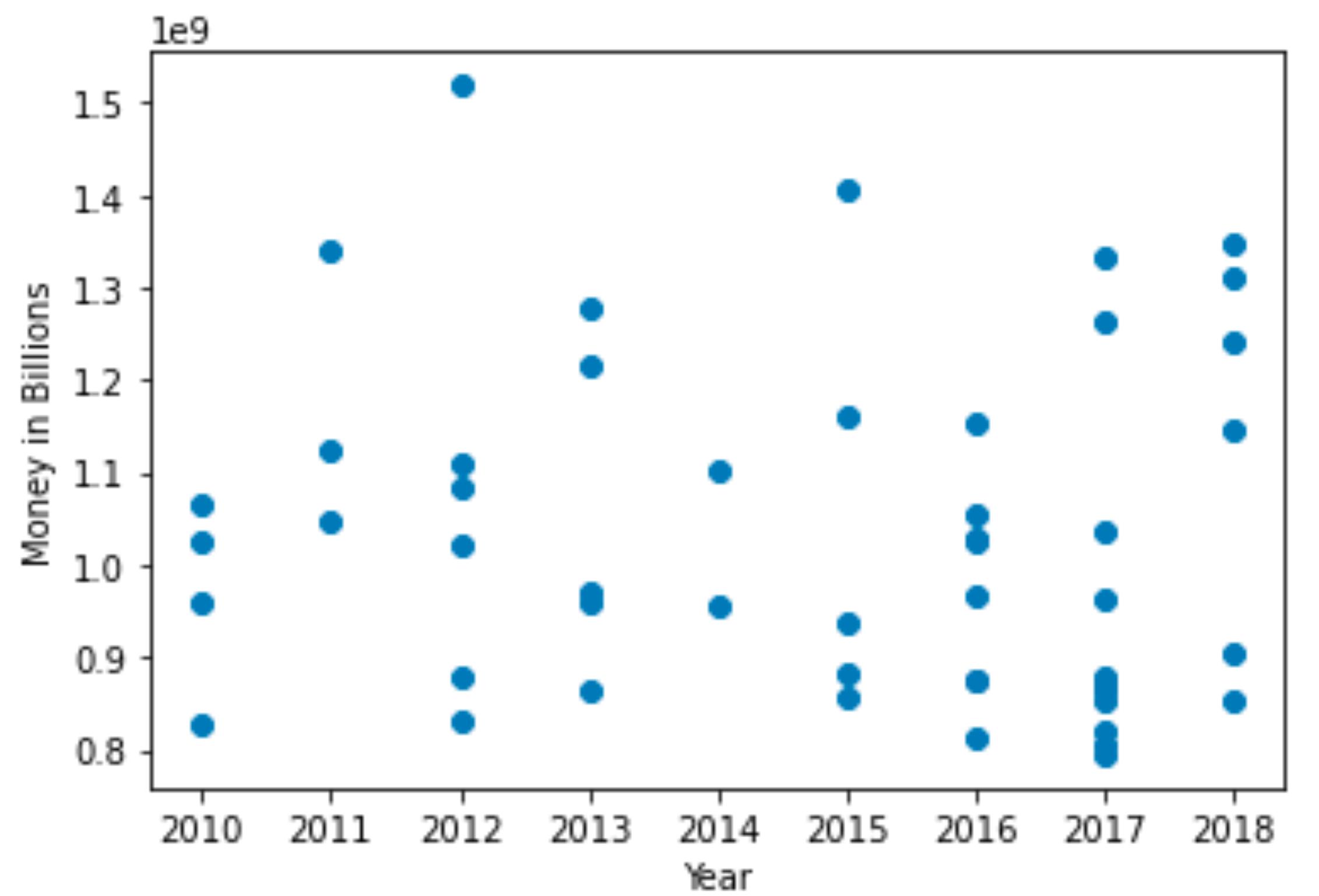
		title	studio	domestic_gross	foreign_gross	year
328		Harry Potter and the Deathly Hallows Part 2	WB	381000000.0	960500000.0	2011
1875		Avengers: Age of Ultron	BV	459000000.0	946400000.0	2015
727		Marvel's The Avengers	BV	623400000.0	895500000.0	2012
3081		Jurassic World: Fallen Kingdom	UNI.	417700000.0	891800000.0	2018
1127		Frozen	BV	400700000.0	875700000.0	2013

		title	studio	domestic_gross	foreign_gross	year
1872		Star Wars: The Force Awakens	BV	936700000.0	1131.6	2015
3080		Black Panther	BV	700100000.0	646900000.0	2018
3079		Avengers: Infinity War	BV	678800000.0	1369.5	2018
1873		Jurassic World	UNI.	652300000.0	1019.4	2015
727		Marvel's The Avengers	BV	623400000.0	895500000.0	2012

Sorted by Domestic Gross

Insight #1

- All of the movies that are based on the dataset above and have returned the best gross amounts mainly revolve around "Universes".
- Both foreign and domestic results showcase the idea: movies around universes return a large gross amount.



Dataset #2



Dataset #2 Summary

- Based Multi Table Structure
- All tables are connected through either their movie id or a person id (person who worked on the movie e.i. director)
- 3 Tables of Focus:
 - Movie Basics: provided us with movie, runtime, year, title
 - Movie Rating: ratings and number of votes
 - Person: persons name, profession, birth year

Dataset #2 Analysis

- With the goal in mind: I focused on finding the movie ratings and directors
- Find the movies with the top ratings and what do they have in common?
 - Made sure the number of votes were not low amounts so ordered the ratings based on votes
 - This indicated the popularity as well
 - The top 100 rated movies



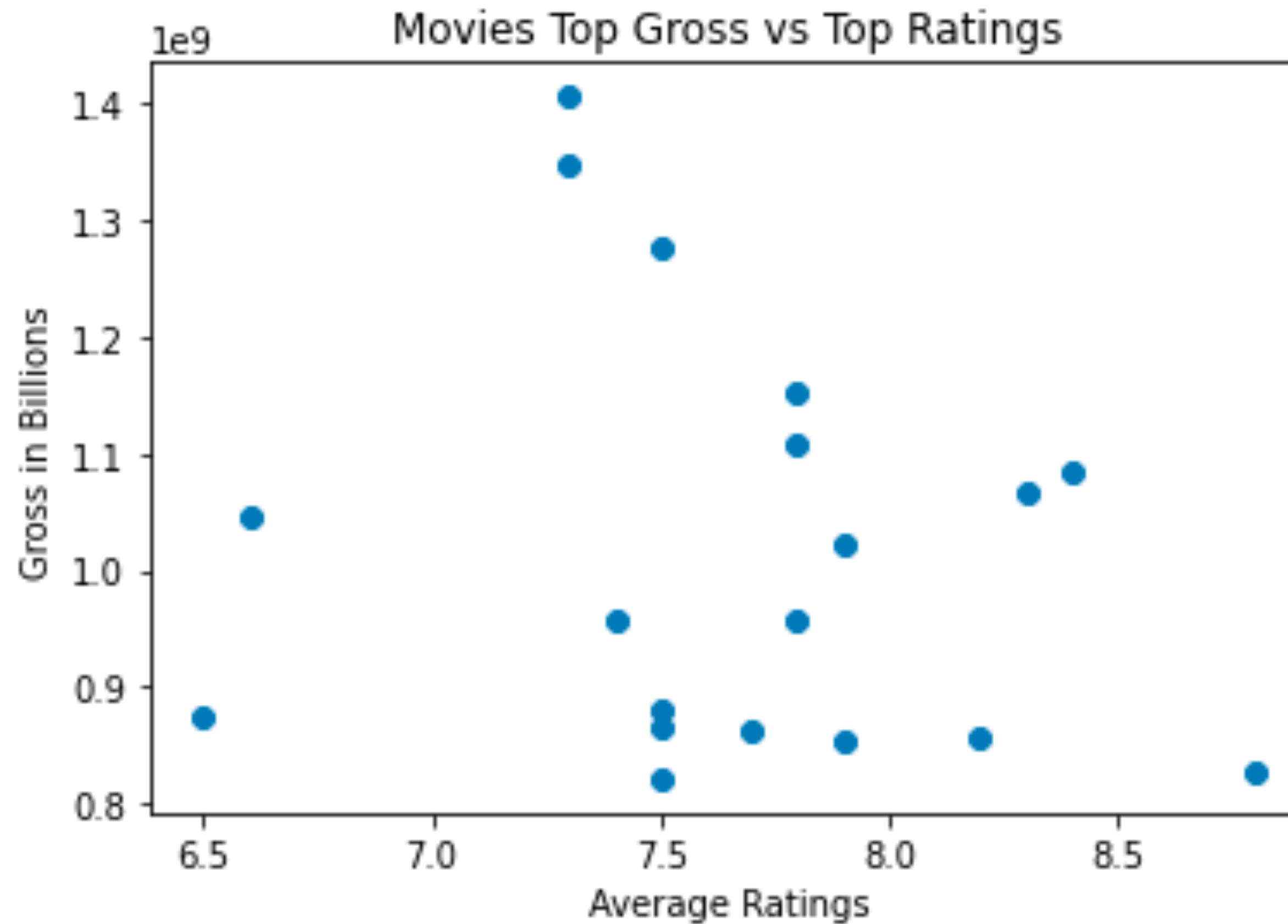
Insight #2

As part of Insight #1, a lot of the items mentioned on this top 100 rated list were also mentioned on our first dataset.

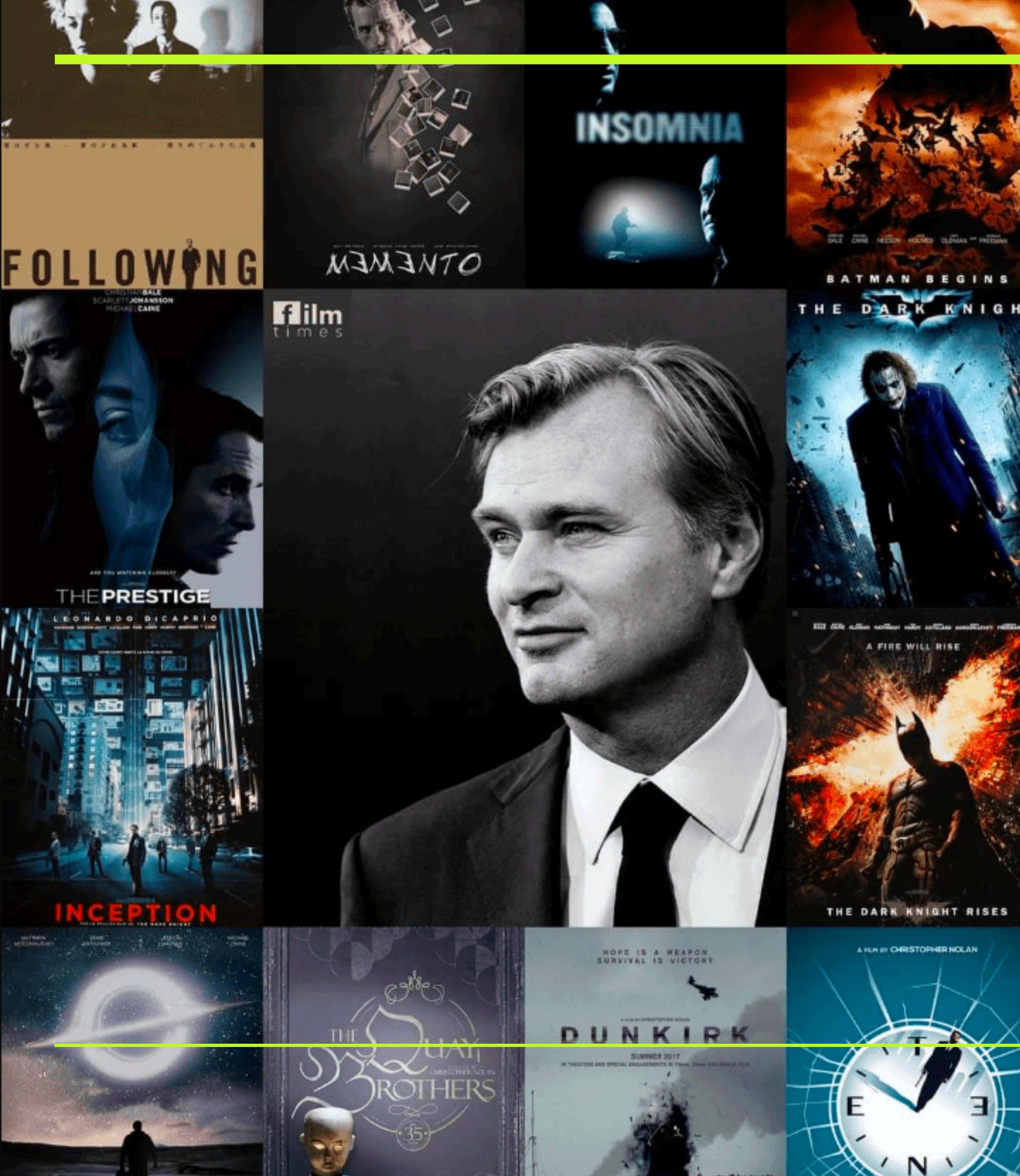
- We use this opportunity to combine these two data sets and out of the top 100 rated in dataset #1 and top 100 total grossing in dataset #2, we got 18 that match based on title.

- Movies that have performed well financially and in terms of ratings with high number of votes mostly revolve around UNIVERSES.

	title	studio	domestic_gross	foreign_gross	year	total_gross	movie_id	start_year	genres	numvotes	averagerating
0	Avengers: Age of Ultron	BV	459000000.0	946400000.0	2015	1.405400e+09	tt2395427	2015	Action,Adventure,Sci-Fi	665594	7.3
1	Black Panther	BV	700100000.0	646900000.0	2018	1.347000e+09	tt1825683	2018	Action,Adventure,Sci-Fi	516148	7.3
2	Frozen	BV	400700000.0	875700000.0	2013	1.276400e+09	tt2294629	2013	Adventure,Animation,Comedy	516998	7.5
3	Captain America: Civil War	BV	408100000.0	745200000.0	2016	1.153300e+09	tt3498820	2016	Action,Adventure,Sci-Fi	583507	7.8
4	Skyfall	SONY	304400000.0	804200000.0	2012	1.108600e+09	tt1074638	2012	Action,Adventure,Thriller	592221	7.8
5	The Dark Knight Rises	WB	448100000.0	636800000.0	2012	1.084900e+09	tt1345836	2012	Action,Thriller	1387769	8.4
6	Toy Story 3	BV	415000000.0	652000000.0	2010	1.067000e+09	tt0435761	2010	Adventure,Animation,Comedy	682218	8.3
7	Pirates of the Caribbean: On Stranger Tides	BV	241100000.0	804600000.0	2011	1.045700e+09	tt1298650	2011	Action,Adventure,Fantasy	447624	6.6
8	The Hobbit: An Unexpected Journey	WB (NL)	303000000.0	718100000.0	2012	1.021100e+09	tt0903624	2012	Adventure,Family,Fantasy	719629	7.9
9	The Hobbit: The Desolation of Smaug	WB (NL)	258399999.0	700000000.0	2013	9.584000e+08	tt1170358	2013	Adventure,Fantasy	565563	7.8
10	The Hobbit: The Desolation of Smaug	WB (NL)	255100000.0	700900000.0	2014	9.560000e+08	tt2310332	2014	Adventure,Fantasy	438621	7.4
11	Spider-Man: Homecoming	SONY	334200000.0	546000000.0	2017	8.802000e+08	tt2250912	2017	Action,Adventure,Sci-Fi	426302	7.5
12	Batman v Superman: Dawn of Justice	WB	330400000.0	543300000.0	2016	8.737000e+08	tt2975590	2016	Action,Adventure,Fantasy	576909	6.5
13	The Hunger Games: Catching Fire	LGF	424700000.0	440300000.0	2013	8.650000e+08	tt1951264	2013	Action,Adventure,Sci-Fi	575455	7.5



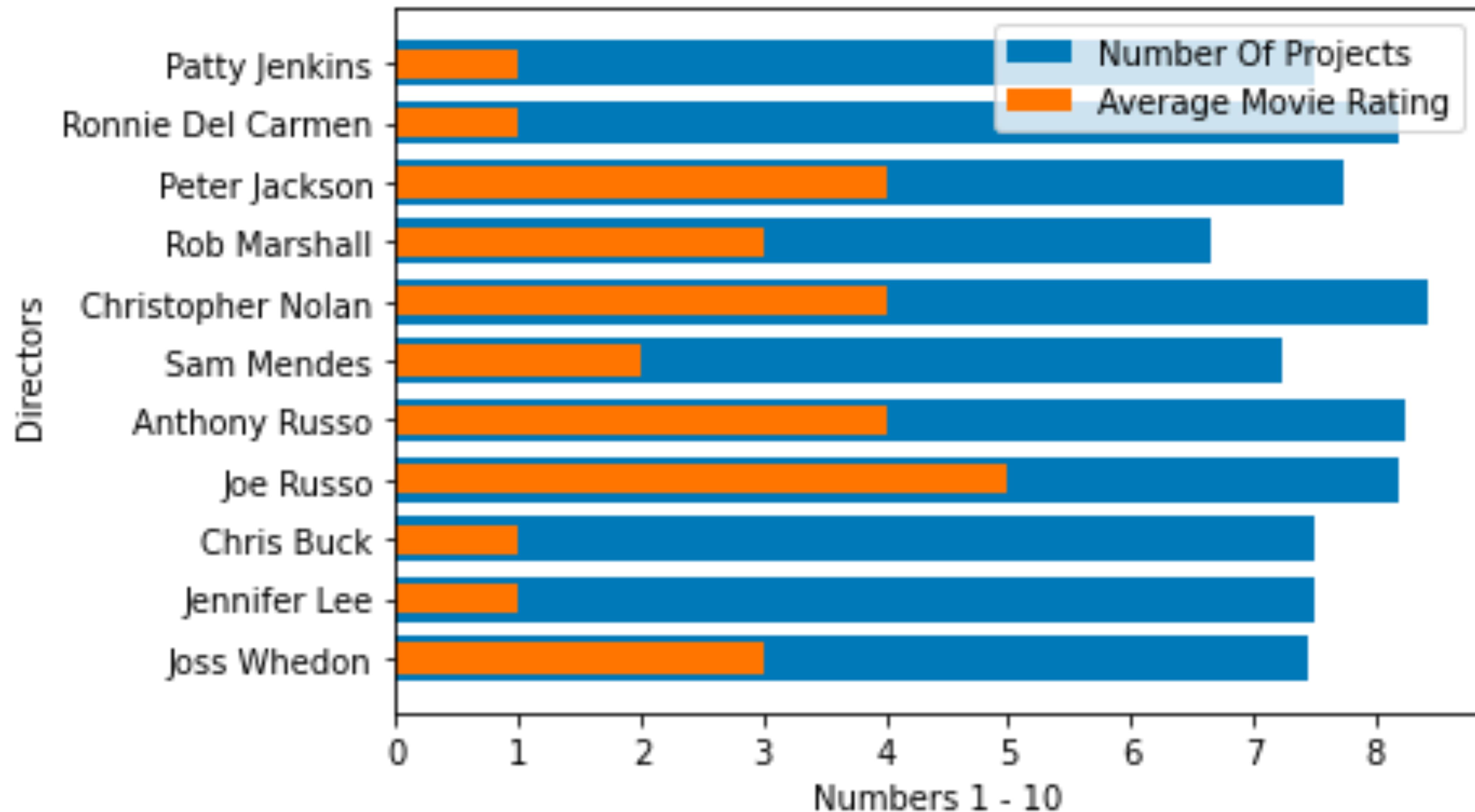
Dataset Analysis cont.



- Shift our attention to Directors
- We GROUP the directors and their work
- The average rating and total count of projects they've worked on to see if there is any correlation between their work and the performance.

Insight #3

- As we continue to build off of our Financial Performance and Ratings of movies:
- DIRECTORS: who we've been able to match with the top performing movies also have a HIGH AVERAGE RATING on AT LEAST 1 movie (1 only if that's what's available in the dataset)



Conclusion

- Universes should be a focus as they provide great financial returns
- Create great Universes themes with a long term plan because they do provide great ratings and connection between several movies
- Invest in a knowledgeable Director instead of cutting costs for budgeting sakes

Next Steps

- Find Data on movie budgets
- Understand the value of merchandise in the industry
- More foreign movie data for comparison

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Data Science 2023 May

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Github: <https://github.com/BedeMS/MicrosoftMovieAnalysis>

Thank You
