# INCLED IS MOVIE ANALYSIS



### Content



# **Project Description**

- I am seeking a skilled and detail-oriented Data Analyst to conduct a comprehensive IMDB Movie Analysis.
- As a Data Analyst, My primary responsibility will be to explore the dataset of movies on IMDB and identify factors influencing a movie's success based on high IMDB ratings.
- this insights and findings will be instrumental in guiding decisionmaking for movie producers, directors, and investors to maximize the success of their future cinematic projects.



# Approach

#### **Data Collection:**

• Gathered diverse dataset of movies with attributes like genre, duration, language, director, budget, and IMDB ratings.

### Data Preprocessing:

 Used Python for handling missing values and genre separation in the 'genres' column.

### Data Analysis:

Utilized Microsoft Excel for comprehensive analysis and insights.



### Tech Stack Used

- Python: google colab
  - Data Pre-Processing
  - Missing Value Analysis
  - Data Manipulation
- Excel:
  - Data Analysis
  - Pivot Tables
  - Visualisation





# Insights

- Movie Genre Analysis
- Identified most common genres and their impact on IMDB scores.
- Movie Duration Analysis:
- Found patterns indicating movie length influences audience perception.
- Language Analysis:
- Uncovered the impact of language on IMDB scores.
- Director Analysis:
- Discovered directors' significant influence on movie success.
- Budget Analysis:
- Explored correlation between movie budgets and gross earnings.

# Data Pre-Processing

- Removed Un Necessary Columns from the dataset
- Used python to remove all the un necessary columns
- imdb.drop(['all column names'])
- By removing the un necessary columns we can reduce the effect on the computational power.

color	actor_1_name
num_critic_for_reviews	cast_total_facebook_likes
director_facebook_likes	actor_3_name
actor_3_facebook_likes	facenumber_in_poster
actor_2_name	plot_keywords
actor_1_facebook_likes	movie_imdb_link
country	title_year
actor_2_facebook_likes	aspect_ratio
movie_facebook_likes	num_user_for_reviews
content_rating	



# Data Pre-Processing

- There is a huge bias in the column with low voted uses for maximum movies.
- This can bring our Insights totally wrong.
- To avoid this issue Here I have Takes data num\_voted\_users from 25% percentile
- imdb['num\_voted\_users'].quantile(0.25)
- 17330.5

num\_voted\_users

/////

### Task:

- A. Movie Genre Analysis: Analyze the distribution of movie genres and their impact on the IMDB score.
- **Task:** Determine the most common genres of movies in the dataset. Then, for each genre, calculate descriptive statistics (mean, median, mode, range, variance, standard deviation) of the IMDB scores.
- B. Movie Duration Analysis: Analyze the distribution of movie durations and its impact on the IMDB score.
- Task: Analyze the distribution of movie durations and identify the relationship between movie duration and IMDB score.

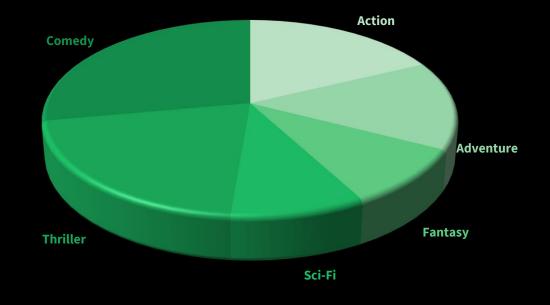
### Task:

- C. Language Analysis: Situation: Examine the distribution of movies based on their language.
- **Task:** Determine the most common languages used in movies and analyze their impact on the IMDB score using descriptive statistics.
- **D. Director Analysis:** Influence of directors on movie ratings.
- **Task:** Identify the top directors based on their average IMDB score and analyze their contribution to the success of movies using percentile calculations.
- E. Budget Analysis: Explore the relationship between movie budgets and their financial success.
- **Task:** Analyze the correlation between movie budgets and gross earnings, and identify the movies with the highest profit margin.

### A. Movie Genre Analysis: Genre Distribution

#### **Distribution** Genre Count Percentage Action 970 19.7% Adventure 16.1% 795 10.5% **Fantasy** 517 Sci-Fi 501 10.1% Thriller 1130 22.9% Comedy 1511 30.6%

#### **GENRE**





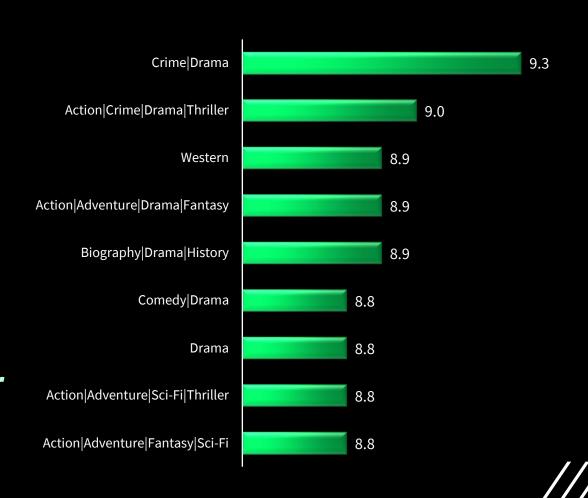
### A. Movie Genre Analysis:

### Genres impact on the IMDB score

 Here are the Top Genres with maximum IMDb Score

 Crime | Drama has the maximum IMDb Score among all other genres

• Action | Crime | Drama | Thriller | Scored 2<sup>nd</sup> in the list



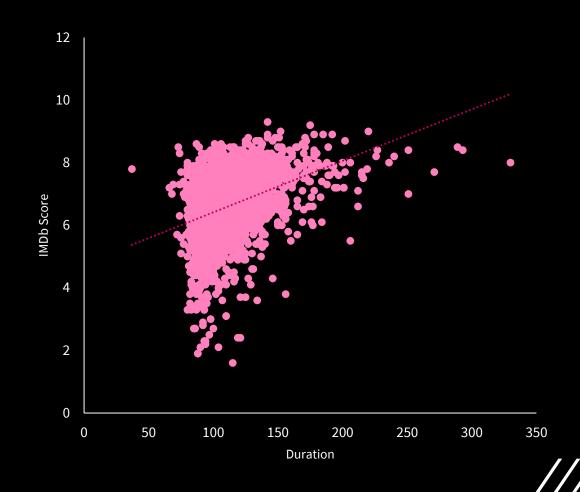
# A. Movie Genre Analysis: Descriptive statistics

Row Labels	StdDev of imdb_score5	Var of imdb_score2	Sum of imdb_score	Count of imdb_score4	Average of imdb_score2	Max of imdb_score3	Min of imdb_score
Action	1.7	2.77	30.4		6.1	8.1	3.7
Action Adventure	1.2	1.48	61.9	g	6.9	8.5	4.8
Action Adventure Animation Comedy Crime Family Fantasy	0.0	0.00	6.2	]	6.2	6.2	6.2
Action Adventure Animation Comedy Drama Family Sci-Fi	0.1	0.00	15.9	2	8.0	8	7.9
Action Adventure Animation Comedy Family	0.3	0.11	35.8		7.2	7.6	6.7
Action Adventure Animation Comedy Family Fantasy	0.6	0.38	29.3	4	7.3	7.9	6.7
Action Adventure Animation Comedy Family Fantasy Sci-Fi	0.8	0.72	11.4		5.7	6.3	5.1
Action Adventure Animation Comedy Family Sci-Fi	0.6	0.30	17.9	3	6.0	6.5	5.4
Action Adventure Animation Drama Mystery Sci-Fi Thriller	0.0	0.00	7.1		7.1	7.1	7.1
Action Adventure Animation Family	0.0	0.00	8	1	8.0	8	8
Action Adventure Animation Family Fantasy	0.0	0.00	7	1	7.0	7	7
Action Adventure Animation Family Fantasy Sci-Fi	0.0	0.00	6.8	1	6.8	6.8	6.8
Action Adventure Animation Family Sci-Fi	0.0	0.00	6.6	1	6.6	6.6	6.6
Action Adventure Animation Fantasy	0.0	0.00	6.3	1	6.3	6.3	6.3
Action Adventure Animation Fantasy Romance Sci-Fi	0.0	0.00	6.4	1	6.4	6.4	6.4
Action Adventure Biography Drama History Romance War	0.0	0.00	5.5	1	5.5	5.5	5.5
Action Adventure Biography Drama History Thriller	0.0	0.00	7	1	7.0	7	7
Action Adventure Comedy	0.6	0.37	59.6	10	6.0	7.3	5.1
Action Adventure Comedy Crime	1.2	1.49	36.4	. (	6.1	7.6	4.4
Action Adventure Comedy Crime Family Romance Thriller	0.0	0.00	5	1	5.0	5	5
Action Adventure Comedy Crime Mystery Thriller	0.0	0.00	6.9	1	6.9	6.9	6.9
Action Adventure Comedy Crime Thriller	0.0	0.00	5.5	1	5.5	5.5	5.5
Action Adventure Comedy Drama War	0.0	0.00	7.1		7.1	7.1	7.1
Action Adventure Comedy Family Fantasy	0.0	0.00	6.4	1	6.4	6.4	6.4
Action Adventure Comedy Family Fantasy Mystery Sci-Fi	0.0	0.00	6.1		6.1	6.1	6.1
Action Adventure Comedy Family Fantasy Sci-Fi	0.8	0.69	23.5	4	5.9	6.8	4.8
Action Adventure Comedy Family Mystery	0.0	0.00	6.9	1	6.9	6.9	6.9
Action Adventure Comedy Family Romance	0.0	0.00	5.4	1	5.4	5.4	5.4
Action Adventure Comedy Family Sci-Fi	0.9	0.78	30.8	(	5.1	6.1	4.1
Action Adventure Comedy Fantasy	1.2	1.44	18.4	3	6.1	7.3	4.9
Action Adventure Comedy Fantasy Mystery	0.0	0.00	5.9	1	5.9	5.9	5.9

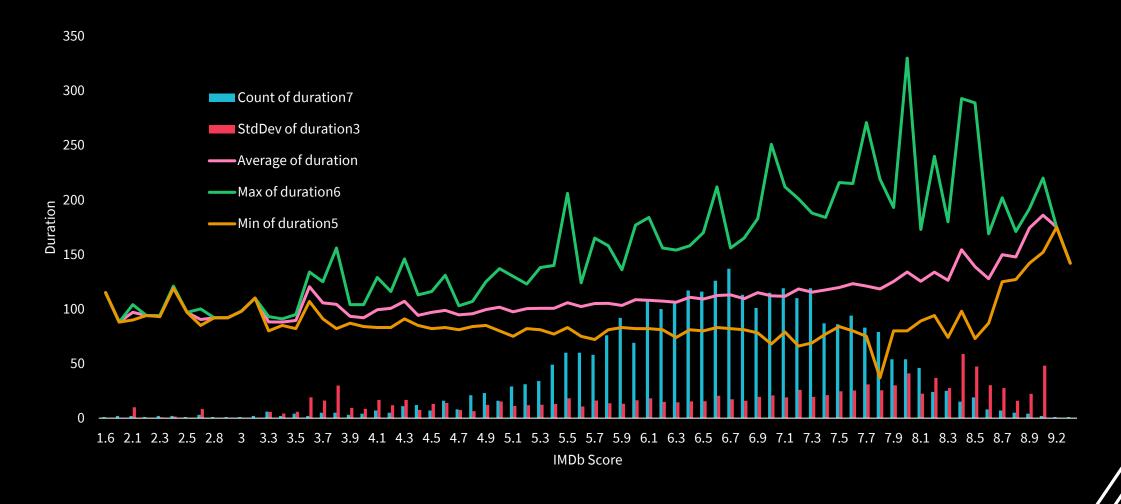
# B. Movie Duration Analysis:

### Correlation of IMDb Score and Duration

- Maximum Movies with descent IMDb score holds between 95min and 120min.
- There are some cult movies though it maintain high duration can also hit the maximum IMDb score possible
- But the standard duration should be minimum more than 70min



# B. Movie Duration Analysis: Statistical Distribution of Movies



# B. Movie Duration Analysis: Descriptive statistics

						Var of
	duration	duration7	duration6		duration3	duration2
1.6	115.0	1	115	115.0	0.0	
1.9	88.0	2	88	88.0	0.0	0.0
2.1	97.0	2	104	90.0	9.9	98.0
2.2	94.0	1	94	94.0	0.0	0.0
2.3	93.5	2	94	93.0	0.7	0.5
2.4	120.0	2	121	119.0	1.4	2.0
2.5	97.0	1	97	97.0	0.0	0.0
2.7	90.3	3	100	85.0	8.4	70.3
2.8	92.0	1	92	92.0	0.0	0.0
2.9	92.0	1	92	92.0	0.0	0.0
3	98.0	1	98	98.0	0.0	0.0
3.1	110.0	2	110	110.0	0.0	0.0
3.3	88.2	6	93	80.0	5.7	33.0
3.4	88.0	2	91	85.0	4.2	18.0
3.5	89.5	4	95	82.0	5.8	33.7
3.6	120.5	2	134	107.0	19.1	364.5
3.7	105.6	5	125	91.0	16.1	257.8
3.8	104.4	5	156	82.0	29.8	890.3
3.9	93.3	3	104	87.0	9.3	86.3
4	92.0	4	104	84.0	8.5	72.0
4.1	99.3	7	129	83.0	16.7	279.2
4.2	100.6	5	116	83.0	11.8	139.3
4.3	107.2	11	146	91.0	16.7	278.6
4.4	94.2	12	113	85.0	7.6	58.5
4.5	97.0	7	116	82.0	13.0	168.3
4.6	98.8	16	131	83.0	13.9	193.1
4.7	94.6	8	103	81.0	7.4	55.4
4.8	95.6	21	107	84.0	6.4	41.4
4.9	99.5	23	125	85.0	12.1	147.4
5	101.7	16	137	80.0	15.2	230.2
5.1	97.4	29	130	75.0	11.1	122.2

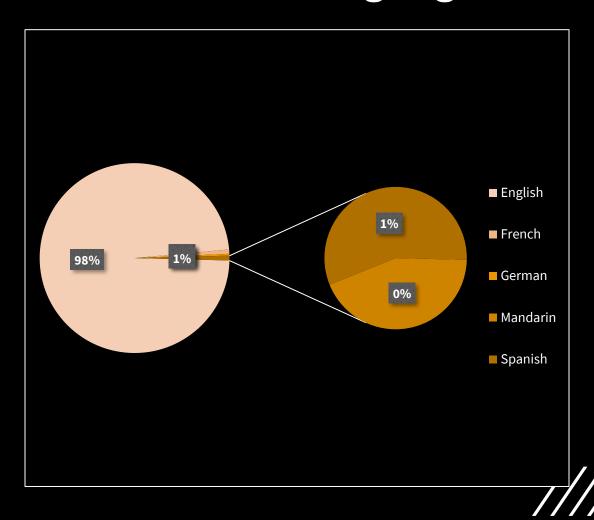
Count	3887
Mean	109.9
Stander dev	22.7
Minimum	34 min
Percentile 25%	95 min
Percentile 50%	106 min
Percentile 75%	120 min
Maximum	330 min



# C. Language Analysis: Distribution of movies based on their languages

• English Language Movies has the maximum distribution among all other Movies with 98% from Top 5 Languages.

• English Language Occupied around 96% of the Entire Movie Database.

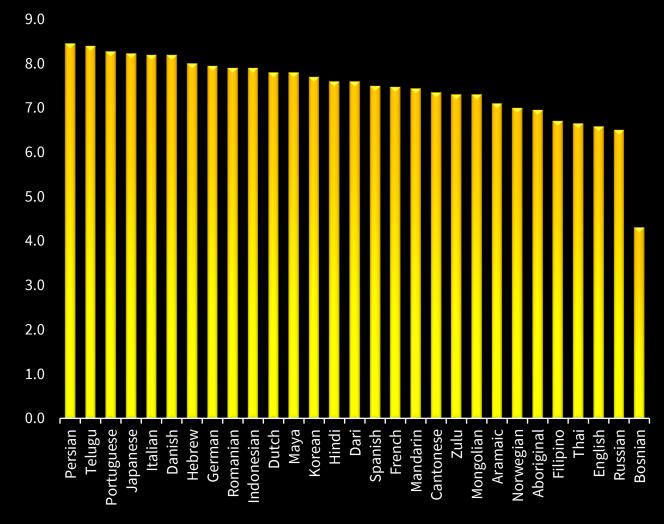


# C. Languages with AVG IMDb Score

Persian and Telugu holds the top places among the all other languages with Average IMDb Score

English, Russian and Bosnian Languages have the lowest Average IMDb score.

Hindi with 7.6 and Telugu with 8.4 took the great place in the list from Indian languages





# C. Language Analysis: Descriptive statistics

Row Labels	Var of imdb_score2	Sum of imdb_score2	StdDev of imdb_score5	Min of imdb_score3	Max of imdb_score	Count of imdb_score4	Average of imdb_score4
Aboriginal	0.6	13.9	0.8	6.4	7.5	i 2	7.0
Aramaic	0.0	7.1	0.0	7.1	7.1	. 1	7.1
Bosnian	0.0	4.3	0.0	4.3	4.3	, 1	4.3
Cantonese	0.1	44.1	0.4	6.7	7.8	6	7.4
Danish	0.0	16.4	0.1	8.1	8.3	2	8.2
Dari	0.0	7.6	0.0	7.6	7.6	, 1	7.6
Dutch	0.0	7.8	0.0	7.8	7.8	, 1	7.8
English	1.0	18475.5	1.0	1.6	9.3	2807	6.6
Filipino	0.0	6.7	0.0	6.7	6.7	1	6.7
French	0.2	157	0.5	6.6	8.4	21	7.5
German	0.2	71.5	0.4	7.3	8.5	9	7.9
Hebrew	0.0	) 8 <sup>l</sup>	0.0	8	8	1	8.0
Hindi	0.2	2 38	0.5	6.9	8	5	7.6
Indonesian	0.2	15.8	0.4	7.6	8.2	. 2	7.9
Italian	0.4	24.6	0.6	7.7	8.9	3	8.2
Japanese	0.1	57.6	0.4	7.7	8.7	7	8.2
Korean	0.3	38.5	0.6	7	8.4	, 5	7.7
Mandarin	0.2	74.4	0.5	6.5	7.9	10	7.4
Maya	0.0	7.8	0.0	7.8	7.8	, 1	7.8
Mongolian	0.0	7.3	0.0	7.3	7.3	, 1	7.3
Norwegian	0.4	21	0.6	6.4	7.6	3	7.0
Persian	0.0	16.9	0.1	8.4	8.5	, 2	8.5
Portuguese	0.1	24.8	0.4	8	8.7	3	8.3
Romanian	0.0	7.9	0.0	7.9	7.9	1	7.9
Russian	0.0	6.5	0.0	6.5	6.5	1	6.5
Spanish	0.5	97.4	0.7	5.9	8.2	13	7.5
Telugu	0.0	8.4	0.0	8.4	8.4	, 1	8.4
Thai	0.4	13.3	0.6	6.2	7.1	. 2	6.7
Zulu	0.0	7.3	0.0	7.3	7.3	1	7.3
Grand Total	1.0	19287.4	1.0	1.6	9.3	2914	6.6

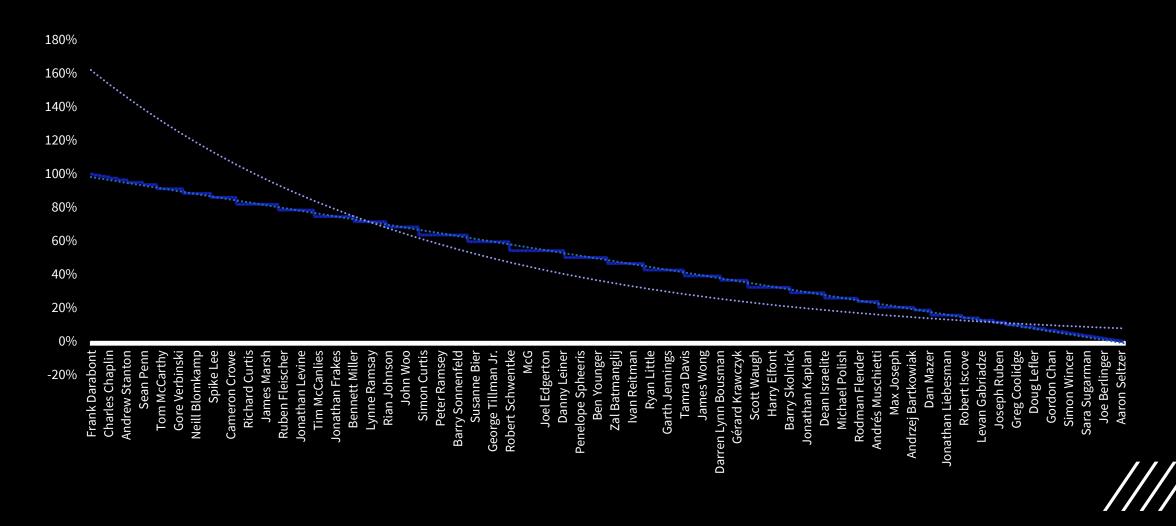
# D. Director Analysis: Influence of directors on movie ratings.

- Rating shows the impact of the directors of their movies to score IMDb rating.
- Akira Kurosawa, The Japanese Film Maker, Scored Highest IMDb score of the Average of all his movies and placed top of the list.
- **S.S. Rajamouli** from India took 11<sup>th</sup> place in the list of top Directors Across the world.



### D. Director Analysis:

### Percentile Distribution of Directors



### D. Director Analysis:

### Directors and Their Percentile Score

director_name	Max of imdb_score	Percentile
Frank Darabont	9.3	100%
Grand Total	9.3	100%
Francis Ford Coppola	9.2	100%
Christopher Nolan	9	100%
Steven Spielberg	8.9	99%
Sergio Leone	8.9	99%
Quentin Tarantino	8.9	99%
Peter Jackson	8.9	99%
Robert Zemeckis	8.8	99%
Irvin Kershner	8.8	99%
David Fincher	8.8	99%
Martin Scorsese	8.7	99%
Milos Forman	8.7	99%
Lana Wachowski	8.7	99%
Fernando Meirelles	8.7	99%
George Lucas	8.7	99%
Akira Kurosawa	8.7	99%
Tony Kaye	8.6	98%
Hayao Miyazaki	8.6	98%
Jonathan Demme	8.6	98%
Charles Chaplin	8.6	98%
Bryan Singer	8.6	98%
Ridley Scott	8.5	97%
Roger Allers	8.5	97%
Roman Polanski	8.5	97%
Ron Fricke	8.5	97%
Majid Majidi	8.5	97%
James Cameron	8.5	97%
Florian Henckel von Donnersmarck	8.5	97%
Alfred Hitchcock	8.5	97%
Damien Chazelle	8.5	97%
S.S. Rajamouli	8.4	97%
Sam Mendes	8.4	97%

Wolfgang Petersen	Richard Marguand	8.4	97%
Mel Gibson			97%
Jean-Pierro Jeunet			97%
Chan-wook Park         8.4         9:           Darren Aronofsky         8.4         9:           Andrew Stanton         8.4         9:           David Lean         8.4         9:           David Lean         8.4         9:           Terry Gilliam         8.3         9:           Terry Gilliam         8.3         9:           Stanley Kubrick         8.3         9:           Thomas Vinterberg         8.3         9:           Steve James         8.3         9:           Pete Docter         8.3         9:           Lenny Abrahamson         8.3         9:           Michel Gondry         8.3         9:           Uilver Hirschbiegel         8.3         9:           Lee Unkrich         8.3         9:           George Roy Hill         8.3         9:           George Roy Hill         8.3         9:           John Lasseter         8.3         9:           Guy Ritchie         8.3         9:           Gurris Hanson         8.3         9:           Brian De Palma         8.3         9:           Brian De Palma         8.3         9:           Brian De			97%
Darren Aronofsky       8.4       93         Asghar Farhadi       8.4       93         Andrew Stanton       8.4       93         David Lean       8.4       93         Erry Gillam       8.3       99         Stanley Kubrick       8.3       99         Thomas Vinterberg       8.3       99         Steve James       8.3       99         Pete Dotter       8.3       99         Lenny Abrahamson       8.3       99         Michel Gondry       8.3       99         Oliver Hirschbiegel       8.3       99         Gus Van Sant       8.3       99         George Roy Hill       8.3       99         Fritz Lang       8.3       99         John Lasseter       8.3       99         Guy Ritchie       8.3       99         Clint Eastwood       8.3       99         Curtis Hanson       8.3       99         Brian De Palma       8.3       99         Brian De Palma       8.3       99         Brian De Palma       8.2       99         Juan José Campanella       8.2       99         John Carpenter       8.2			97%
Asphar Farhadi       8.4       9:         Andrew Stanton       8.4       9:         David Lean       8.4       9:         Terry Gilliam       8.3       9:         Stanley Kubrick       8.3       9:         Thomas Vinterberg       8.3       9:         Steve James       8.3       9:         Steve James       8.3       9:         Lenny Abrahamson       8.3       9:         Lenny Abrahamson       8.3       9:         Michel Gondry       8.3       9:         Oliver Hirschbiegel       8.3       9:         Lee Unkrich       8.3       9:         George Roy Hill       8.3       9:         Friz Lang       8.3       9:         John Lasseter       8.3       9:         Guy, Ritchie       8.3       9:         Curtis Hanson       8.3       9:         Sillity Wilder       8.3       9:         Sean Penn       8.2       9:         Mich Pirchieming       8.2       9:         Sound Dopenheimer       8.2       9:         John Carpenter       8.2       9:         Gavin O'Connor       8.2 <t< td=""><td></td><td></td><td>97%</td></t<>			97%
Andrew Stanton       8.4       97         David Lean       8.4       97         Erry Gilliam       8.3       99         Stanley Kubrick       8.3       99         Thomas Vinterberg       8.3       99         Steve James       8.3       99         Pete Dotter       8.3       99         Lenny Abrahamson       8.3       99         Michel Gondry       8.3       99         Oliver Hirschbiegel       8.3       99         Lee Unkrich       8.3       99         Gus Van Sant       8.3       99         Gus Van Sant       8.3       99         Gur Van Sant       8.3       99         Clint Eastwood       8.3       99         Clint Eastwood       8.3       99         Clint Eastwood       8.3       99     <			97%
David Lean         8.4         9:           Erry Gillam         8.3         9!           Stanley Kubrick         8.3         9!           Thomas Vinterberg         8.3         9!           Steve James         8.3         9!           Pete Docter         8.3         9!           Lenny Abrahamson         8.3         9!           Michel Gondry         8.3         9!           Oliver Hirschbiegel         8.3         9!           Lee Unkrich         8.3         9!           Seen Pein Hill         8.3         9!           Fitz Lang         8.3         9!           John Lasseter         8.3         9!           Guy Ritchie         8.3         9!           Guy Ritchie         8.3         9!           Curtis Hanson         8.3 <td></td> <td></td> <td>97%</td>			97%
Terry Gilliam         8.3         95           Stanley Kubrick         8.3         95           Thomas Vinterberg         8.3         95           Steve James         8.3         95           Pete Docter         8.3         95           Lenny Abrahamson         8.3         95           Michel Gondry         8.3         95           Lee Unkrich         8.3         95           Lee Unkrich         8.3         95           Lee Unkrich         8.3         95           Gus Van Sant         8.3         95           George Roy Hill         8.3         95           Fritz Lang         8.3         95           John Lasseter         8.3         95           Guy Ritchie         8.3         95           Clint Eastwood         8.3         95           Rill Eastwood			97%
Stanley Kubrick         8.3         99           Thomas Vinterberg         8.3         99           Steve James         8.3         99           Pete Doter         8.3         99           Lenny Abrahamson         8.3         99           Michel Gondry         8.3         99           Oliver Hirschbiegel         8.3         99           Lee Unkrich         8.3         99           Gus Van Sant         8.3         99           George Roy Hill         8.3         99           Fitz Lang         8.3         99           John Lasseter         8.3         99           Guy Ritchie         8.3         99           Curtis Hanson         8.3         99           Gurtis Hanson         8.3         99           Sinan De Palma         8.3         99           Billy Wilder         8.3         99           Sean Penn         8.2         99           Yictor Fleming         8.2         99           Ron Howard         8.2         99           John Howard         8.2         99           John Howard         8.2         99           John Corpenter			95%
Thomas Vinterberg  8.3 99: Pete Docter 8.3 99: Michel Gondry 8.3 99: Michel Gondry 8.3 99: Lee Unkrich 8.3			95%
Steve James			95%
Pete Docter         8.3         9!           Lenny Abrahamson         8.3         9!           Michel Gondry         8.3         9!           Oliver Hirschbiegel         8.3         9!           Geu Jukrich         8.3         9!           Gus Van Sant         8.3         9!           George Roy Hill         8.3         9!           Fitz Lang         8.3         9!           John Lasseter         8.3         9!           Guy Ritchie         8.3         9!           Gurits Hanson         8.3         9!           Strian De Palma         8.3         9!           Billy Wilder         8.3         9!           Sean Penn         8.2         9.9           Victor Fleming         8.2         9.9           Ron Howard         8.2         9.9           Joshua Oppenheimer         8.2         9.9           John Garpenter         8.2         9.9           John Cornor			95%
Lenny Abrahamson       8.3       95         Michel Gondry       8.3       95         Diliver Hirschbiegel       8.3       95         Lee Unkrich       8.3       95         Gus Van Sant       8.3       95         George Roy Hill       8.3       95         Fritz Lang       8.3       95         John Lasseter       8.3       95         Loy Ritchie       8.3       95         Cinte Eastwood       8.3       95         Cint Eastwood       8.3       95         Brian De Palma       8.3       95         Brian De Palma       8.3       95         Billy Wilder       8.3       95         Sean Penn       8.2       94         Victor Fleming       8.2       94         York Or Fleming       8.2       94         York Or Fleming       8.2       94         You Howard       8.2       94      <			95%
Michel Gondry       8.3       99         Oliver Hirschbiegel       8.3       99         Gus Van Sant       8.3       99         Gus Van Sant       8.3       99         Fritz Lang       8.3       99         Fritz Lang       8.3       99         John Lasseter       8.3       99         Guy Ritchie       8.3       99         Curtis Hanson       8.3       99         Curtis Hanson       8.3       99         Billy Wilder       8.3       99         Sean Penn       8.2       94         Victor Fleming       8.2       94         Non Howard       8.2       94         Joshua Oppenheimer       8.2       94         Joshua Oppenheimer       8.2       94         Joel Coen       8.2       94         Joel Coen       8.2       94         John Carpenter       8.2       94         John Corpor       8.2       94         James McTeigue       8.2       94         James McTeigue       8.2       94         Panny Boyle       8.2       94         Denis Villeneuve       8.2       94			95%
Diver Hirschbiegel       8.3       99         Lee Unkrich       8.3       99         Gus Van Sant       8.3       99         George Roy Hill       8.3       99         Firz Lang       8.3       99         John Lasseter       8.3       99         Guy Ritchie       8.3       99         Curtis Hanson       8.3       99         Brian De Palma       8.3       99         Brian De Palma       8.3       99         Brilly Wilder       8.3       99         Sean Penn       8.2       99         Victor Fleming       8.2       99         Ron Howard       8.2       99         Joshua Oppenheimer       8.2       99         Joulan José Campanella       8.2       99         Jole Coen       8.2       99         Guillermodel Toro       8.2       99         John Carpenter       8.2       99         Gavin O'Connor       8.2       99         James MCTeigue       8.2       99         James MCTeigue       8.2       99         Denn Y Boyle       8.2       99         Denn DeBlois       8.2       99			95%
Lee Unkrich       8.3       95         Gus Van Sant       8.3       95         George Roy Hill       8.3       95         Fritz Lang       8.3       95         John Lasseter       8.3       95         Guy Ritchie       8.3       95         Clint Eastwood       8.3       95         Curtis Hanson       8.3       95         Brian De Palma       8.3       95         Brian De Palma       8.3       95         Billy Wilder       8.3       95         Sean Penn       8.2       96         Victor Fleming       8.2       96         Wictor Fleming       8.2       99         Joshua Oppenheimer       8.2       99         Jushua José Campanella       8.2       99         Juan José Campanella       8.2       99         Joel Coen       8.2       99         John Carpenter       8.2       99         John McTiernan       8.2       99         James McTeigue       8.2       99         James McTeigue       8.2       99         Panny Boyle       8.2       99         Pann DeBlois       8.2			95%
Gus Van Sant     8.3     99       George Roy Hill     8.3     99       Fritz Lang     8.3     99       John Lasseter     8.3     99       Guy Ritchie     8.3     99       Curtis Hasson     8.3     99       Gurtis Hanson     8.3     99       Frian De Palma     8.3     99       Billy Wilder     8.3     99       Sean Penn     8.2     94       Victor Fleming     8.2     94       Ron Howard     8.2     94       Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Jolin Carpenter     8.2     94       John McTienran     8.2     94       James McTeigue     8.2     94       Janny Boyle     8.2     94       Penis Villeneuve     8.2     94       Pean DeBlois     8.2     94       Anthony Russo     8.2     94       Anthony Russo     8.2     94       Anthony Russo     8.2     94			95%
George Roy Hill         8.3         95           Fritz Lang         8.3         95           John Lasseter         8.3         95           Guy Ritchie         8.3         95           Curtis Hanson         8.3         95           Grand De Palma         8.3         95           Brian De Palma         8.3         95           Sean Penn         8.2         94           Victor Fleming         8.2         94           Ron Howard         8.2         94           Joshua Oppenheimer         8.2         94           Juan José Campanella         8.2         94           John Carpenter         8.2         94           Guillemodel Toro         8.2         94           John Corpenter         8.2         94           Gavin O'Connor         8.2         94           Jahns MCTeigne         8.2         94           James MCTeigue         8.2         94           Janny Boyle         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94			95%
Fritz Lang         8.3         99           John Lasseter         8.3         99           Guy Ritchie         8.3         99           Clint Eastwood         8.3         99           Curtis Hanson         8.3         99           Brian De Palma         8.3         99           Billy Wilder         8.3         99           Sean Penn         8.2         99           Victor Fleming         8.2         99           Ron Howard         8.2         99           Joshua Oppenheimer         8.2         99           Juan José Campanella         8.2         99           Joel Coen         8.2         99           John Carpenter         8.2         99           John Carpenter         8.2         99           John McTiernan         8.2         99           James McTeigue         8.2         99           Janny Boyle         8.2         99           Penis Villeneuve         8.2         99           Penis Delbois         8.2         99           Anthony Russo         8.2         99			95%
John Lasseter   8.3   9!			95%
Guy Ritchie     8.3     9!       Clint Eastwood     8.3     9!       Curtis Hanson     8.3     9!       Brian De Palma     8.3     9!       Billy Wilder     8.3     9!       Sean Penn     8.2     94       Victor Fleming     8.2     94       Ron Howard     8.2     94       Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermodel Toro     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John McTiernan     8.2     94       Elia Kazan     8.2     94       James McTeigue     8.2     94       Panny Boyle     8.2     94       Penis Villeneuve     8.2     94       Penan DeBlois     8.2     94       Anthony Russo     8.2     94       Anthony Russo     8.2     94       Anthony Russo     8.2     94			95%
Clint Eastwood       8.3       99         Curtis Hanson       8.3       99         Brian De Palma       8.3       99         Billy Wilder       8.3       99         Sean Penn       8.2       94         Victor Fleming       8.2       94         Ron Howard       8.2       99         Jushua Oppenheimer       8.2       99         Jushua José Campanella       8.2       99         Joel Coen       8.2       99         Guillermo del Toro       8.2       99         John Carpenter       8.2       99         John McTiernan       8.2       99         Elia Kazan       8.2       99         James McTeigue       8.2       99         Panny Boyle       8.2       99         Penis Villeneuve       8.2       99         Penan DeBlois       8.2       99         Anthony Russo       8.2       99		8.3	95%
Curtis Hanson     8.3     95       Brian De Palma     8.3     95       Brian De Palma     8.3     95       Sean Penn     8.2     94       Victor Fleming     8.2     94       Ron Howard     8.2     94       Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermo del Toro     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John MCTiernan     8.2     94       Elia Kazan     8.2     94       James MCTeigue     8.2     94       Panny Boyle     8.2     94       Denis Villeneuve     8.2     99       Dean DeBlois     8.2     94       Anthony Russo     8.2     94			95%
Billy Wilder     8.3     95       Sean Penn     8.2     94       Victor Fleming     8.2     94       Ron Howard     8.2     94       Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermo del Toro     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John McTiernan     8.2     94       Elia Kazan     8.2     94       James McTeigue     8.2     94       Danny Boyle     8.2     94       Denis Villeneuve     8.2     99       Dean DeBlois     8.2     99       Anthony Russo     8.2     94			95%
BillyWilder     8.3     99       Sean Penn     8.2     99       Wictor Fleming     8.2     99       Ron Howard     8.2     99       Joshua Oppenheimer     8.2     99       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermodel Toro     8.2     99       John Carpenter     8.2     99       Gavin O'Connor     8.2     99       John McTiernan     8.2     99       Lia Kazan     8.2     99       James McTeigue     8.2     99       Danny Boyle     8.2     99       Denis Villeneuve     8.2     99       Den DeBlois     8.2     99       Anthony Russo     8.2     99	Brian De Palma	8.3	95%
Sean Penn     8.2     94       Victor Fleming     8.2     94       Non Howard     8.2     94       Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John McTiernan     8.2     94       Ella Kazan     8.2     94       James McTeigue     8.2     94       Janny Boyle     8.2     94       Penis Villeneuve     8.2     99       Dean DeBlois     8.2     99       Anthony Russo     8.2     99       Anthony Russo     8.2     99	Billy Wilder	8.3	95%
Victor Fleming         8.2         94           Ron Howard         8.2         94           Joshua Oppenheimer         8.2         94           Juan José Campanella         8.2         94           Joel Coen         8.2         94           Guillermo del Toro         8.2         94           John Carpenter         8.2         94           Gavin O'Connor         8.2         94           John McTiernan         8.2         94           Elia Kazan         8.2         94           James McTeigue         8.2         94           Janny Boyle         8.2         94           Denis Villeneuve         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94			94%
Joshua Oppenheimer     8.2     94       Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermo del Toro     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John McTiernan     8.2     94       Elia Kazan     8.2     94       James McTeigue     8.2     94       Danny Boyle     8.2     94       Denis Villeneuve     8.2     94       Dean DeBlois     8.2     94       Anthony Russo     8.2     94       Anthony Russo     8.2     94	Victor Fleming	8.2	94%
Juan José Campanella     8.2     94       Joel Coen     8.2     94       Guillermo del Toro     8.2     94       John Carpenter     8.2     94       Gavin O'Connor     8.2     94       John McTierman     8.2     94       Elia Kazan     8.2     94       James McTeigue     8.2     94       Danny Boyle     8.2     94       Denis Villeneuve     8.2     94       Dean DeBlois     8.2     94       Anthony Russo     8.2     94	Ron Howard	8.2	94%
Joel Coen   8.2   94     Suillerm del Toro   8.2   94     John Carpenter   8.2   94     John Connor   8.2   94     John McTiernan   8.2   94     John McTiernan   8.2   94     James McTeigue   8.2   94     James McTeigue   8.2   94     James McTeigue   8.2   94     Deniny Boyle   94     Deniny Bo	Joshua Oppenheimer	8.2	94%
Joel Coen   8.2   94     Suillerm del Toro   8.2   94     John Carpenter   8.2   94     John Connor   8.2   94     John McTiernan   8.2   94     John McTiernan   8.2   94     James McTeigue   8.2   94     James McTeigue   8.2   94     James McTeigue   8.2   94     Deniny Boyle   94     Deniny Bo	Juan José Campanella	8.2	94%
John Carpenter         8.2         94           Gavin O'Connor         8.2         94           John McTierran         8.2         94           Elia Kazan         8.2         99           James McTeigue         8.2         94           Danny Boyle         8.2         99           Denis Villeneuve         8.2         99           Dean DeBlois         8.2         99           Anthony Russo         8.2         99           Anthony Russo         8.2         99		8.2	94%
Gavin O'Connor         8.2         94           John McTiernan         8.2         94           Lia Kazan         8.2         94           James McTeigue         8.2         94           Danny Boyle         8.2         94           Denis Villeneuve         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94	Guillermo del Toro	8.2	94%
John McTiernan         8.2         94           Elia Kazan         8.2         94           James McTeigue         8.2         94           Danny Boyle         8.2         94           Denis Villeneuve         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94           Anthony Russo         8.2         94	John Carpenter	8.2	94%
Elia Kazan     8.2     99       James McTeigue     8.2     94       Danny Boyle     8.2     94       Denis Villeneuve     8.2     99       Dean DeBlois     8.2     94       Anthony Russo     8.2     94	Gavin O'Connor	8.2	94%
James McTeigue         8.2         94           Danny Boyle         8.2         94           Denis Villeneuve         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94	John McTiernan	8.2	94%
Danny Boyle         8.2         94           Denis Villeneuve         8.2         94           Dean DeBlois         8.2         94           Anthony Russo         8.2         94	Elia Kazan	8.2	94%
Denis Villeneuve         8.2         9-           Dean DeBlois         8.2         9-           Anthony Russo         8.2         9-	James McTeigue	8.2	94%
Denis Villeneuve         8.2         9-           Dean DeBlois         8.2         9-           Anthony Russo         8.2         9-	Danny Boyle	8.2	94%
Anthony Russo 8.2 94		8.2	94%
Anthony Russo 8.2 94	Dean DeBlois	8.2	94%
Dichard Linklator	Anthony Russo	8.2	94%
Michael 8.1 9.	Richard Linklater	8.1	91%
Tim Miller 8.1 99	Tim Miller	8.1	91%
Tate Taylor 8.1 99	Tate Taylor	8.1	91%
Terry George 8.1 99	Terry George	8.1	91%
Tom McCarthy 8.1 99	Tom McCarthy	8.1	91%
			91%
Steve McQueen 8.1 99	Steve McQueen	8.1	91%
		8.1	91%
		8.1	91%

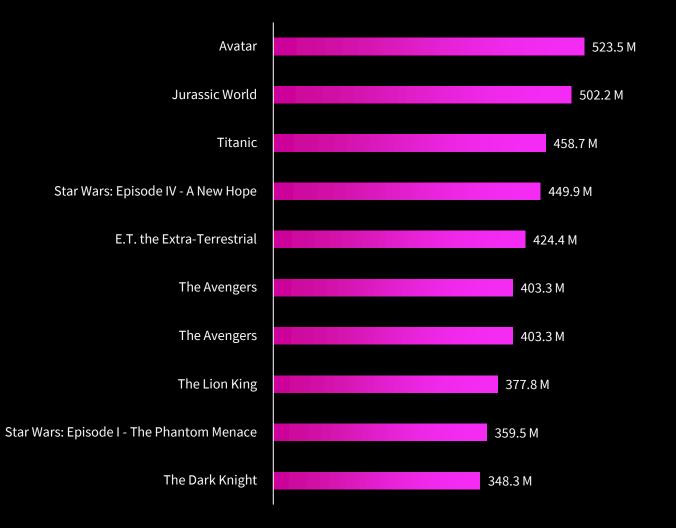


# **E. Budget Analysis:** Top Highest Gross Movies

Avatar took the 1<sup>st</sup> place among all the movies with \$ 523.5 Million

Most of the movies are with Low and Medium budget and got Low and Medium Gross

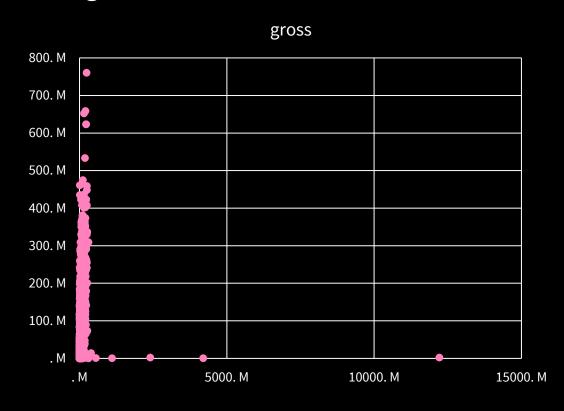
Risk is high as the budget is getting high



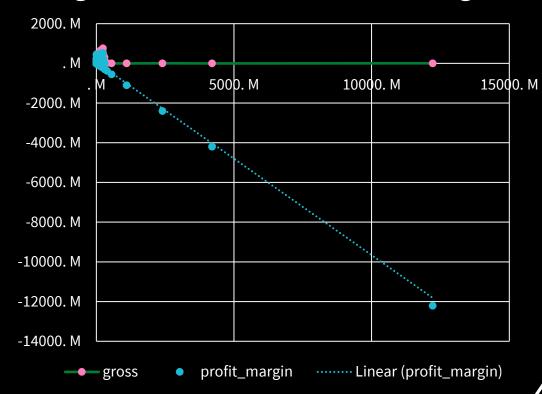


### E. Budget Analysis: Relation of Budget and Gross

#### **Budget and Gross**



### **Budget and Gross with Profit Margin**



### E. Budget Analysis:

### Correlation and Profit margin of the movies

movie_title	budget	gross	correlation	profit_margin
Avatar	237. M	760.5 M	0.09	523.5 M
Jurassic World	150. M	652.2 M	0.09	502.2 M
Titanic	200. M	658.7 M	0.09	458.7 M
Star Wars: Episode IV - A New Hope	11. M	460.9 M	0.09	449.9 M
E.T. the Extra-Terrestrial	10.5 M	434.9 M	0.09	424.4 N
The Avengers	220. M	623.3 M	0.09	403.3 N
The Avengers	220. M	623.3 M	0.09	403.3 N
The Lion King	45. M	422.8 M	0.09	377.8 M
Star Wars: Episode I - The Phantom Menace	115. M	474.5 M	0.09	359.5 M
The Dark Knight	185. M	533.3 M	0.09	348.3 M
The Hunger Games	78. M	408. M	0.09	330. M
Deadpool	58. M	363. M	0.09	305. M
The Hunger Games: Catching Fire	130. M	424.6 M	0.09	294.6 M
Jurassic Park	63. M	356.8 M	0.09	293.8 M
Despicable Me 2	76. M	368. M	0.09	292. M
American Sniper	58.8 M	350.1 M	0.09	291.3 M
Finding Nemo	94. M	380.8 M	0.09	286.8 M
Shrek 2	150. M	436.5 M	0.09	286.5 M
The Lord of the Rings: The Return of the King	94. M	377. M	0.09	283. M
Star Wars: Episode VI - Return of the Jedi	32.5 M	309.1 M	0.09	276.6 M
Forrest Gump	55. M	329.7 M	0.09	274.7 M
Star Wars: Episode V - The Empire Strikes				
Back	18. M	290.2 M	0.09	272.2 N
Home Alone	18. M	285.8 M	0.09	267.8 M
Star Wars: Episode III - Revenge of the Sith	113. M	380.3 M	0.09	267.3 M
Spider-Man	139. M	403.7 M	0.09	264.7 M
Minions	74. M	336. M	0.09	262. M
The Sixth Sense	40. M	293.5 M	0.09	253.5 M
Jaws	8. M	260. M	0.09	252. N
Frozen	150. M	400.7 M	0.09	250.7 M
The Secret Life of Pets	75. M	323.5 M	0.09	248.5 M
The Twilight Saga: New Moon	50. M	296.6 M	0.09	246.6 M
The Lord of the Rings: The Two Towers	94. M	340.5 M	0.09	246.5 M

The Hansover	35. M	277.3 M	0.0	242.3
My Big Fat Greek Wedding	53. N		0.0	236.4
The Twilight Saga: Eclipse	68. N	300.5 M	0.09	232.5
ndependence Day	75. N	306.1 M	0.0	231.1
The Blind Side	29. N	256. M	0.0	227. 224.4
Raiders of the Lost Ark	18. N	242.4 M	0.0	224.41
The Lord of the Rings: The Fellowship of the Ring	93. M	313.8 M	0.0	220.8
Beverly Hills Cop	14. N	234.8 M	0.0	220.8
Batman	35, M		0.09	216.2
Toy Story 3	200. N 125. N	415. M 337.1 M	0.0	215.
The Hunser Games: Mockinsiay - Part 1 ron Man 3	125, N 200, N	337.1 M 409. M	0.0	212.1 209.
Avengers Age of Ultron	250. M	459, M	0.0	209.
Shrek	60. N	267.7 M	0.0	207.7
Transformers: Revenge of the Fallen	200, M	402.1 M	0.0	202.1
Meet the Fockers	80. N	279.2 M	0.09	199.2 198.1
The Dark Knight Rises Pirates of the Caribbean: Dead Man's Chest	250, N 225, N	448.1 M 423. M	0.0	198.1
The Lego Movie	60. N		0.0	197.8
The Exorcist	8. M	204.6 M	0.09	196.6
Star Wars: Episode II - Attack of the Clones	115. M	310.7 M	0.0	195.7
Shost	22. N	217.6 M	0.0	195.6
Gone with the Wind Mrs. Doubtfire	4. N 25. N	198.7 M 219.2 M	0.0	194.7 194.2
Mrs. Doubthre Harry Potter and the Sorcerer's Stone	25, N	219.2 M	0.0	194.2 192.6
Back to the Future	19. M	210.6 M	0.0	191.6
Aladdin	28. N	217.4 M	0.0	189.4
The Jungle Book	175. N	362.6 M	0.0	187.6
The Jungle Book	175. M		0.0	187.6
Snow White and the Seven Dwarfs Despicable Me	2. M 69. M	184.9 M 251.5 M	0.0	182.9 182.5
nside Out	175. M	251.5 M	0.0	181.5
ron Man	140. M	318.3 M	0.0	178.3
Grease	6. N	181.4 M	0.0	175.4
Monsters, Inc.	115. N	289.9 M	0.09	174.9
The Hansover Part II	80, M	254.5 M	0.0	174.5 174.1
Spider-Man 2	100, M 200, M	274.1 M 373.4 M	0.0	173.4
Austin Powers: The Spy Who Shagged Me	33 M	205.4 M	0.0	172.4
The Twilight Saga: Breaking Dawn - Part 2	120. M	292.3 M	0.0	172.3
The Twilight Saga: Breaking Dawn - Part 2	120. M	292.3 M	0.09	172.3
The Incredibles Transformers	92. M 150. M	261.4 M 318.8 M	0.0	169.4 168.8
Transformers Ted	150. N 50. M	318.8 M 218.6 M	0.0	168.8 168.6
Crocodile Dundee	8.8 M	174.6 M	0.0	165.8
Pirates of the Caribbean: The Curse of the Black Pearl	140. M	305.4 M	0.0	165.4
Pretty Woman Guardians of the Galaxy	14. M 170. M	178.4 M 333.1 M	0.0	164.4 163.1
Dances with Wolves	22. N	333.1 M	0.0	162.2
Harry Potter and the Chamber of Secrets	100. M	262. M	0.0	162
Toy Story	30. N	191.8 M	0.09	161.8
Top Gun	15. M	176.8 M	0.0	161.8
Bruce Almighty Shrek the Third	81. M 160. M	242.6 M 320.7 M	0.0	161.6 160.7
enrek the i nird Ven in Black	160. N	320.7 M	0.0	160.7
Furious 7	90. N 190. N	250.1 M	0.09	160.
Transformers: Dark of the Moon	195. M	352.4 M	0.0	157.4
Alvin and the Chipmunks	60. N	217.3 M	0.0	157.3
Captain America: Civil War 8 Men and a Baby	250. N 11. N	407.2 M 167.8 M	0.0	157.2 156.8
B Men and a Baby The Lost World: Jurassic Park	11. N	167.8 M 229.1 M	0.0	156.8 156.1
Ine Lost World: Jurassic Park Signs	73. N	229.1 M	0.0	156.1
Toy Story 2	90. N	245.8 M	0.09	156. 155.8
Home Alone 2: Lost in New York	18. N	173.6 M	0.0	155.6
Tootsie	22. N	177.2 M	0.0	155.2
The Sound of Music Twilight	8.2 M 37. N	163.2 M 191.4 M	0.0	155. 154.4
Twilight	37. N	191.4 M	0.0	154.4
Pitch Perfect 2	29. N	183.4 M	0.0	154.4
The Sting	5.5 N	159.6 M	0.0	154.1
There's Something About Mary	23. N	176.5 M	0.0	153.5
ndiana Jones and the Temple of Doom Austin Powers in Goldmember	28. M 63. M	179.9 M 213.1 M	0.0	151.9 150.1
Rustin Powers in Goldmember Twister	63. N 92 M	213.1 M	0.0	150.1
ndiana Jones and the Last Crusade	48. N		0.0	149.2
Rain Man	25. N	172.8 M	0.09	147.8
Saving Private Rvan	70. N	216.1 M	0.0	146.1
	65. N	210.6 M	0.0	145.6
500 The Help	20.11	169.7 M	0.0	144.7



### E. Budget Analysis: Descriptive statistics

### Budget

Describe	Amount \$
count	3,887
mean	45.2 M
std	222.5 M
Min	218
percentile 25%	10. M
percentile 50%	24. M
percentile 75%	50. M
Max	12215.5 M

#### Gross

Describe	Amount \$
Count	3,887
Mean	51.1 M
Std	69.8 M
Minimum	162
Percentile 25%	6.9 M
Percentile 50%	28. M
Percentile 75%	65.5 M
Maximum	760.5 M



# Result: IMDb Movie Analysis

• Successfully unraveled factors influencing movie success on IMDB.

 Combined Python's preprocessing with Excel's analytical tools for comprehensive understanding.

• Provided actionable insights for stakeholders in the movie industry.

 Empowered decision-making for improved ratings, audience engagement, and financial success in future projects.

# THANK YOU

E mail: rohithsomella@gmail.com

Connect me on: LInkedIn/rohithsomella

### **Project Files:**

Project Folder: Google drive IMDb Movie Analysis

co Colab File: <u>Data Pre-Processing</u>

Excel File: <a href="MDb Movie Analysis">IMDb Movie Analysis</a>

**Loom Video:** <u>Video Presentation</u>



