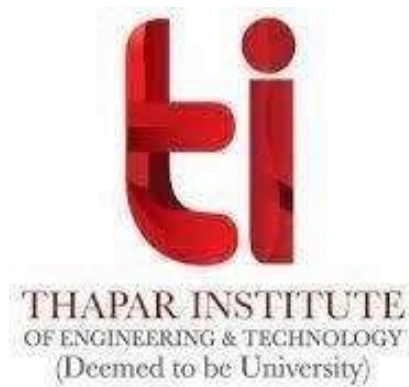# Foundations of Data Science (UCS548)

Data visualization using Tableau and R

Submitted By:

RISHAB CHAKRABARTI
102003688

Submitted To:

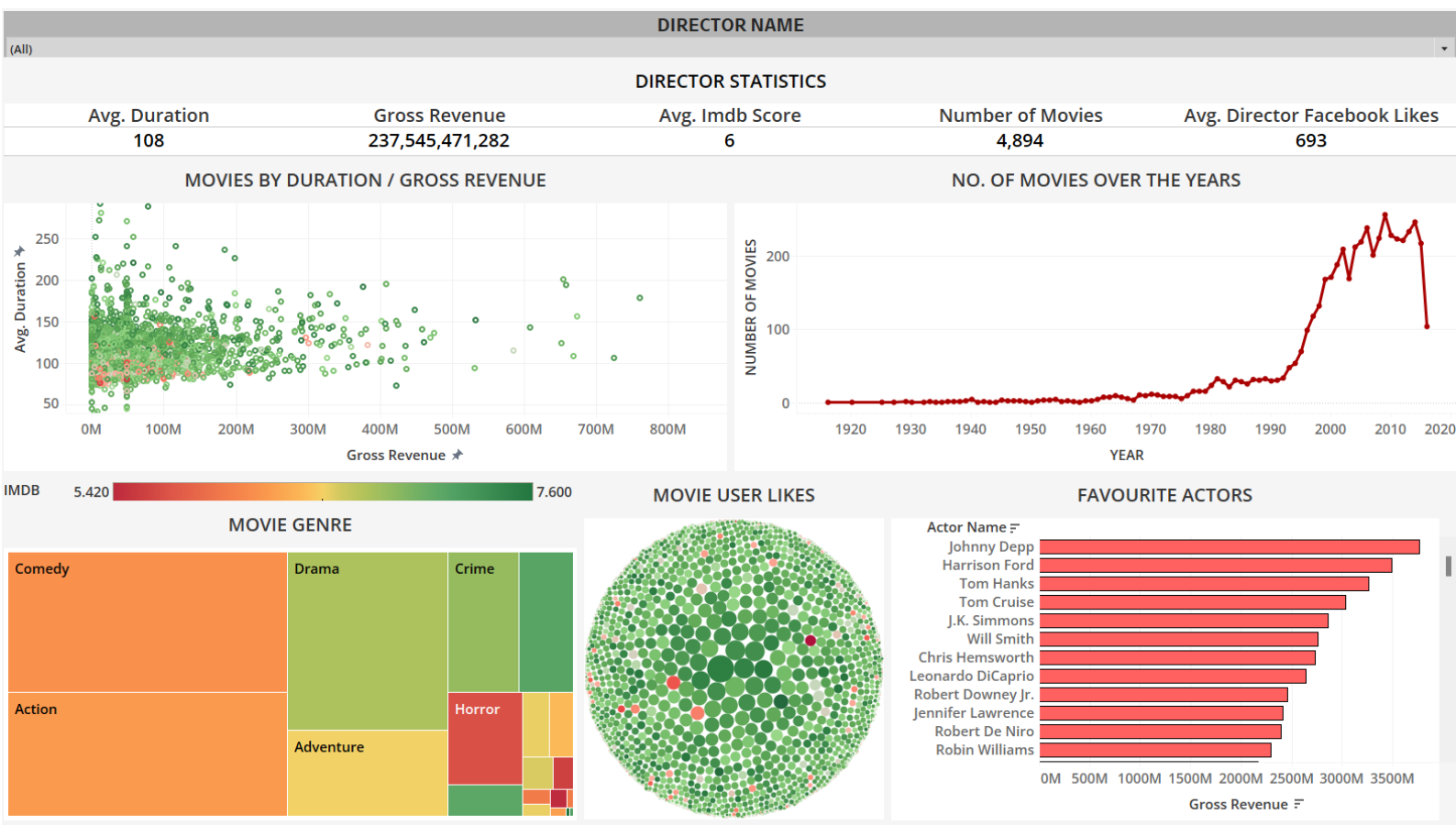Dr. Sharad Saxena

MOVIE DIRECTOR ANALYSIS

DASHBOARD

(All)

DIRECTOR STATISTICS

Avg. Duration	Gross Revenue	Avg. Imdb Score	Number of Movies	Avg. Director Facebook Likes
108	237,545,471,282	6	4,894	693

MOVIES BY DURATION / GROSS REVENUE

NO. OF MOVIES OVER THE YEARS

IMDB 5.420 — 7.600

MOVIE GENRE

Comedy

Drama

Crime

Action

Adventure

Horror

MOVIE USER LIKES

FAVOURITE ACTORS

Actor Name
Johnny Depp
Harrison Ford
Tom Hanks
Tom Cruise
J.K. Simmons
Will Smith
Chris Hemsworth
Leonardo DiCaprio
Robert Downey Jr.
Jennifer Lawrence
Robert De Niro
Robin Williams

0M 500M 1000M 1500M 2000M 2500M 3000M 3500M

Gross Revenue

TABLE SPLITTING AND MERGING

1.TABLES BEFORE MERGE

TABLE 1

	A	B	C	D	E	F	G	H	I	J	K
1	color	director_n	num_critic	duration	director_f	actor_3_f	actor_2_n	actor_1_f	gross	X	
2	Color	James Can	723	178	0	855	Joel David	1000	7.61E+08	1	
3	Color	Gore Verbi	302	169	563	1000	Orlando Bl	40000	3.09E+08	2	
4	Color	Sam Mend	602	148	0	161	Rory Kinne	11000	2E+08	3	
5	Color	Christophe	813	164	22000	23000	Christian B	27000	4.48E+08	4	
6		Doug Walker			131		Rob Walke	131		5	
7	Color	Andrew St	462	132	475	530	Samantha	640	73058679	6	
8	Color	Sam Raimi	392	156	0	4000	James Frar	24000	3.37E+08	7	
9	Color	Nathan Gr	324	100	15	284	Donna Mu	799	2.01E+08	8	
10	Color	Joss Whed	635	141	0	19000	Robert Do	26000	4.59E+08	9	
11	Color	David Yate	375	153	282	10000	Daniel Rad	25000	3.02E+08	10	
12	Color	Zack Snyde	673	183	0	2000	Lauren Col	15000	3.3E+08	11	
13	Color	Bryan Sing	434	169	0	903	Marlon Bra	18000	2E+08	12	
14	Color	Marc Forst	403	106	395	393	Mathieu A	451	1.68E+08	13	
15	Color	Gore Verbi	313	151	563	1000	Orlando Bl	40000	4.23E+08	14	
16	Color	Gore Verbi	450	150	563	1000	Ruth Wilsc	40000	89289910	15	
17	Color	Zack Snyde	733	143	0	748	Christophe	15000	2.91E+08	16	
18	Color	Andrew Ac	258	150	80	201	Pierfrance	22000	1.42E+08	17	
19	Color	Joss Whed	703	173	0	19000	Robert Do	26000	6.23E+08	18	
20	Color	Rob Marsh	448	136	252	1000	Sam Claflir	40000	2.41E+08	19	
21	Color	Barry Sonr	451	106	188	718	Michael St	10000	1.79E+08	20	
22	Color	Peter Jack:	422	164	0	773	Adam Brov	5000	2.55E+08	21	
23	Color	Marc Web	599	153	464	963	Andrew Ga	15000	2.62E+08	22	
24	Color	Ridley Sco	343	156	0	738	William Hu	891	1.05E+08	23	
25	Color	Peter Jack:	509	186	0	773	Adam Brov	5000	2.58E+08	24	
26	Color	Chris Weit	251	113	129	1000	Eva Green	16000	70083519	25	

TABLE 2

genres	actor_1_name	movie_title	num_voted_use	cast_total_face	actor_3_name	facenumber_in_poster	plot_keywords	movie_imdb_link	num_user_for_	language	X	
Action|Adventur	CCH Pounder	AvatarÂ	886204	4834	Wes Studi	0	avatar|future|marine|r	http://www.imdb.cc	3054	English	1	
Action|Adventur	Johnny Depp	Pirates of the	471220	48350	Jack Davenport	0	goddess|marriage cerer	http://www.imdb.cc	1238	English	2	
Action|Adventur	Christoph Waltz	SpectreÂ	275868	11700	Stephanie Sigmar	1	bomb|espionage|seque	http://www.imdb.cc	994	English	3	
Action|Thriller	Tom Hardy	The Dark Knig	1144337	106759	Joseph Gordon-L	0	deception|imprisonmer	http://www.imdb.cc	2701	English	4	
Documentary	Doug Walker	Star Wars: Ep	8	143		0		http://www.imdb.com/title/tt5289954/?ref_=fn_			5	
Action|Adventur	Daryl Sabara	John CarterÂ	212204	1873	Polly Walker	1	alien|american civil war	http://www.imdb.cc	738	English	6	
Action|Adventur	J.K. Simmons	Spider-Man 3	383056	46055	Kirsten Dunst	0	sandman|spider man|s\	http://www.imdb.cc	1902	English	7	
Adventure|Anim	Brad Garrett	TangledÂ	294810	2036	M.C. Gainey	1	17th century|based on f	http://www.imdb.cc	387	English	8	
Action|Adventur	Chris Hemsworth	Avengers: Age	462669	92000	Scarlett Johanssc	4	artificial intelligence|ba	http://www.imdb.cc	1117	English	9	
Adventure|Famil	Alan Rickman	Harry Potter a	321795	58753	Rupert Grint	3	blood|book|love|potio	http://www.imdb.cc	973	English	10	
Action|Adventur	Henry Cavill	Batman v Sup	371639	24450	Alan D. Purwin	0	based on comic book|b	http://www.imdb.cc	3018	English	11	
Action|Adventur	Kevin Spacey	Superman Re	240396	29991	Frank Langella	0	crystal|epic|lex luthor|	http://www.imdb.cc	2367	English	12	
Action|Adventur	Giancarlo Giannini	Quantum of S	330784	2023	Rory Kinnear	1	action hero|attempted	http://www.imdb.cc	1243	English	13	
Action|Adventur	Johnny Depp	Pirates of the	522040	48486	Jack Davenport	2	box office hit|giant squi	http://www.imdb.cc	1832	English	14	
Action|Adventur	Johnny Depp	The Lone Ran	181792	45757	Tom Wilkinson	1	horse|outlaw|texas|te\	http://www.imdb.cc	711	English	15	
Action|Adventur	Henry Cavill	Man of SteelÂ	548573	20495	Harry Lennix	0	based on comic book|b	http://www.imdb.cc	2536	English	16	
Action|Adventur	Peter Dinklage	The Chronicle	149922	22697	DamiÃ¡n AlcÃ¡zar	4	brother brother relation	http://www.imdb.cc	438	English	17	
Action|Adventur	Chris Hemsworth	The Avengers	995415	87697	Scarlett Johanssc	3	alien invasion|assassin|	http://www.imdb.cc	1722	English	18	
Action|Adventur	Johnny Depp	Pirates of the	370704	54083	Stephen Graham	4	blackbeard|captain|pir\	http://www.imdb.cc	484	English	19	
Action|Adventur	Will Smith	Men in Black	268154	12572	Nicole Scherzinge	1	alien|criminal|m.i.b.|m	http://www.imdb.cc	341	English	20	
Adventure|Fanta	Aidan Turner	The Hobbit: T	354228	9152	James Nesbitt	0	army|elf|hobbit|middle	http://www.imdb.cc	802	English	21	
Action|Adventur	Emma Stone	The Amazing	451803	28489	Chris Zylka	0	lizard|outcast|spider|s\	http://www.imdb.cc	1225	English	22	
Action|Adventur	Mark Addy	Robin HoodÂ	211765	3244	Scott Grimes	0	1190s|archer|england|l	http://www.imdb.cc	546	English	23	
Adventure|Fanta	Aidan Turner	The Hobbit: T	483540	9152	James Nesbitt	6	dwarf|elf|lake town|m	http://www.imdb.cc	951	English	24	
Adventure|Famil	Christopher Lee	The Golden C	149019	24106	Kristin Scott Thor	2	children|epic|friend|gir	http://www.imdb.cc	666	English	25	
Action|Adventur	Naomi Watts	King KongÂ	316018	7123	Evan Parke	0	animal name in title|ap\	http://www.imdb.cc	2618	English	26	

TABLE 3

country	content_rating	budget	title_year	actor_2_faceboo	imdb_score	aspect_ratio	movie_facebook_l	X		
USA	PG-13	237000000	2009	936	7.9	1.78	33000	1		
USA	PG-13	300000000	2007	5000	7.1	2.35	0	2		
UK	PG-13	245000000	2015	393	6.8	2.35	85000	3		
USA	PG-13	250000000	2012	23000	8.5	2.35	164000	4		
				12	7.1		0	5		
USA	PG-13	263700000	2012	632	6.6	2.35	24000	6		
USA	PG-13	258000000	2007	11000	6.2	2.35	0	7		
USA	PG	260000000	2010	553	7.8	1.85	29000	8		
USA	PG-13	250000000	2015	21000	7.5	2.35	118000	9		
UK	PG	250000000	2009	11000	7.5	2.35	10000	10		
USA	PG-13	250000000	2016	4000	6.9	2.35	197000	11		
USA	PG-13	209000000	2006	10000	6.1	2.35	0	12		
UK	PG-13	200000000	2008	412	6.7	2.35	0	13		
USA	PG-13	225000000	2006	5000	7.3	2.35	5000	14		
USA	PG-13	215000000	2013	2000	6.5	2.35	48000	15		
USA	PG-13	225000000	2013	3000	7.2	2.35	118000	16		
USA	PG	225000000	2008	216	6.6	2.35	0	17		
USA	PG-13	220000000	2012	21000	8.1	1.85	123000	18		
USA	PG-13	250000000	2011	11000	6.7	2.35	58000	19		
USA	PG-13	225000000	2012	816	6.8	1.85	40000	20		
New Zeala	PG-13	250000000	2014	972	7.5	2.35	65000	21		
USA	PG-13	230000000	2012	10000	7	2.35	56000	22		
USA	PG-13	200000000	2010	882	6.7	2.35	17000	23		
USA	PG-13	225000000	2013	972	7.9	2.35	83000	24		
USA	PG-13	180000000	2007	6000	6.1	2.35	0	25		
New Zeala	PG-13	207000000	2005	919	7.2	2.35	0	26		

JOINIING THE 3 TABLES

R CODE

```r
#IMPORTING LIBRARIES
gc()
library(dplyr)
library(readr)
library(writexl)
#MERGING SPLIT FILES

df1<- read.csv("D:/Projects and Practice/DS PROJECT/CSV FILES/split1.csv")
str(df1)
df2<- read.csv("D:/Projects and Practice/DS PROJECT/CSV FILES/split2.csv")
str(df2)
df3<- read.csv("D:/Projects and Practice/DS PROJECT/CSV FILES/split3.csv")
str(df3)
df4<- merge(df1,df2,by="X")
str(df4)
df5<- merge(df4,df3,by="X")
str(df5)
write.csv(df5,"D:/Projects and Practice/DS PROJECT/sample.csv")
```

OUTPUT

	X	color	director_n	num_critic	duration	director_f	actor_3_fa	actor_2_n	actor_1_fa	gross	genres	actor_1_n	movie_titl	num_vote	cast_total	actor_3_n	facenumb	plot_keyw	movie_im	num_user	language	country	co
1	1	Color	James Can	723	178	0	855	Joel David	1000	7.61E+08	Action|Adv	CCH Poun	AvatarÂ	886204	4834	Wes Studi	0	avatar|fut	http://ww	3054	English	USA	PG
2	2	Color	Gore Verbi	302	169	563	1000	Orlando Bl	40000	3.09E+08	Action|Adv	Johnny De	Pirates of	471220	48350	Jack Daver	0	goddess|n	http://ww	1238	English	USA	PG
3	3	Color	Sam Mend	602	148	0	161	Rory Kinne	11000	2E+08	Action|Adv	Christoph	SpectreÂ	275868	11700	Stephanie	1	bomb|esp	http://ww	994	English	UK	PG
4	4	Color	Christophe	813	164	22000	23000	Christian B	27000	4.48E+08	Action|Thr	Tom Hardy	The Dark K	1144337	106759	Joseph Go	0	deception	http://ww	2701	English	USA	PG
5	5		Doug Walk	NA	NA	131	NA	Rob Walke	131	NA	Document	Doug Walk	Star Wars:	8	143		0		http://ww	NA			
6	6	Color	Andrew Sta	462	132	475	530	Samantha	640	73058679	Action|Adv	Daryl Saba	John Carte	212204	1873	Polly Walk	1	alien|ame	http://ww	738	English	USA	PG
7	7	Color	Sam Raimi	392	156	0	4000	James Fran	24000	3.37E+08	Action|Adv	J.K. Simmc	Spider-Ma	383056	46055	Kirsten Du	0	sandman|:	http://ww	1902	English	USA	PG
8	8	Color	Nathan Gr	324	100	15	284	Donna Mu	799	2.01E+08	Adventure	Brad Garre	TangledÂ	294810	2036	M.C. Gaine	1	17th centu	http://ww	387	English	USA	PG
9	9	Color	Joss Whed	635	141	0	19000	Robert Do	26000	4.59E+08	Action|Adv	Chris Hem	Avengers:	462669	92000	Scarlett Jo	4	artificial in	http://ww	1117	English	USA	PG
10	10	Color	David Yate	375	153	282	10000	Daniel Rad	25000	3.02E+08	Adventure	Alan Rickm	Harry Pott	321795	58753	Rupert Gri	3	blood|boc	http://ww	973	English	UK	PG
11	11	Color	Zack Snyde	673	183	0	2000	Lauren Col	15000	3.3E+08	Action|Adv	Henry Cavi	Batman v S	371639	24450	Alan D. Pu	0	based on c	http://ww	3018	English	USA	PG
12	12	Color	Bryan Sing	434	169	0	903	Marlon Bra	18000	2E+08	Action|Adv	Kevin Spac	Superman	240396	29991	Frank Lang	0	crystal|epi	http://ww	2367	English	USA	PG
13	13	Color	Marc Forst	403	106	395	393	Mathieu A	451	1.68E+08	Action|Adv	Giancarlo	Quantum o	330784	2023	Rory Kinne	1	action her	http://ww	1243	English	UK	PG
14	14	Color	Gore Verbi	313	151	563	1000	Orlando Bl	40000	4.23E+08	Action|Adv	Johnny De	Pirates of	522040	48486	Jack Daver	2	box office	http://ww	1832	English	USA	PG
15	15	Color	Gore Verbi	450	150	563	1000	Ruth Wilso	40000	89289910	Action|Adv	Johnny De	The Lone F	181792	45757	Tom Wilki	1	horse|outl	http://ww	711	English	USA	PG
16	16	Color	Zack Snyde	733	143	0	748	Christophe	15000	2.91E+08	Action|Adv	Henry Cavi	Man of Ste	548573	20495	Harry Lenr	0	based on c	http://ww	2536	English	USA	PG
17	17	Color	Andrew Ac	258	150	80	201	Pierfrance	22000	1.42E+08	Action|Adv	Peter Dink	The Chron	149922	22697	DamiÃ¡n A	4	brother br	http://ww	438	English	USA	PG
18	18	Color	Joss Whed	703	173	0	19000	Robert Do	26000	6.23E+08	Action|Adv	Chris Hem	The Aveng	995415	87697	Scarlett Jo	3	alien invas	http://ww	1722	English	USA	PG
19	19	Color	Rob Marsh	448	136	252	1000	Sam Claflir	40000	2.41E+08	Action|Adv	Johnny De	Pirates of	370704	54083	Stephen G	4	blackbeard	http://ww	484	English	USA	PG
20	20	Color	Barry Sonr	451	106	188	718	Michael St	10000	1.79E+08	Action|Adv	Will Smith	Men in Bla	268154	12572	Nicole Sch	1	alien|crim	http://ww	341	English	USA	PG
21	21	Color	Peter Jacks	422	164	0	773	Adam Brov	5000	2.55E+08	Adventure	Aidan Turn	The Hobbi	354228	9152	James Nes	0	army|elf|I	http://ww	802	English	New Zeala	PG
22	22	Color	Marc Web	599	153	464	963	Andrew Ga	15000	2.62E+08	Action|Adv	Emma Sto	The Amazi	451803	28489	Chris Zylka	0	lizard|outc	http://ww	1225	English	USA	PG
23	23	Color	Ridley Sco	343	156	0	738	William Hu	891	1.05E+08	Action|Adv	Mark Addy	Robin Hoo	211765	3244	Scott Grim	0	1190s|arcl	http://ww	546	English	USA	PG
24	24	Color	Peter Jacks	509	186	0	773	Adam Brov	5000	2.58E+08	Adventure	Aidan Turn	The Hobbi	483540	9152	James Nes	6	dwarf|elf|	http://ww	951	English	USA	PG
25	25	Color	Chris Weit	251	113	129	1000	Eva Green	16000	70083519	Adventure	Christophe	The Golde	149019	24106	Kristin Sco	2	children|e	http://ww	666	English	USA	PG
26	26	Color	Peter Jacks	446	201	0	84	Thomas Kr	6000	2.18E+08	Action|Adv	Naomi Wa	King KongÂ	316018	7123	Evan Parke	0	animal nar	http://ww	2618	English	New Zeala	PG

CLEANING THE DATA ON THIS COMBINED DATASET

1.READING THE FILE AND REMOVING FIRST 2 ROWS

R CODE

```
df=read.csv("D:/Projects and Practice/DS PROJECT/sample.csv")

df
colnames(df)
str(df)

#CLEANING THE DATA
#REPLACING NA VALUES
df=df[,c(-1,-2)]
str(df)
df
```

2.REPLACE THE STRING COLUMNS BY MODE OF COLUMN

R CODE

```
#REPLACING STRING DATA BY MODE

Mode <- function(x) {
  ux <- unique(x)
  ux[which.max(tabulate(match(x, ux)))]
}

df$color[is.na(df$color)] <- Mode(df$color)
df$language[is.na(df$language)] <- Mode(df$language)
df$country[is.na(df$country)] <- Mode(df$country)
df$content_rating[is.na(df$content_rating)] <- Mode(df$content_rating)

nrow(df)
```

3. AS DIRECTOR NAME IS CRUCIAL IN ANALYSIS, RECORDS HAVING NULL VALUES IN DIRECTOR NAME ARE DROPPED

R CODE

```
nrow(df)
#REMOVING DATA WHERE DIRECTOR NAME IS NULL
df=df[complete.cases(df[ , 3]),]
nrow(df)
```

4.REPLACING COLUMNS HAVING NUMERIC VALUES WITH THE MEAN OF THE RESPECTIVE COLUMN

R CODE

```
#REPLACING NUMERIC VALUES BY MEAN
df$num_critic_for_reviews[is.na(df$num_critic_for_reviews)]<-as.integer(mean(df$num_critic_for_reviews,na.rm=TRUE))
df$duration[is.na(df$duration)]<-as.integer(mean(df$duration,na.rm=TRUE))
df$director_facebook_likes[is.na(df$director_facebook_likes)]<-as.integer(mean(df$director_facebook_likes,na.rm=TRUE))
df$actor_3_facebook_likes[is.na(df$actor_3_facebook_likes)]<-as.integer(mean(df$actor_3_facebook_likes,na.rm=TRUE))
df$actor_1_facebook_likes[is.na(df$actor_1_facebook_likes)]<-as.integer(mean(df$actor_1_facebook_likes,na.rm=TRUE))
df$gross[is.na(df$gross)]<-as.integer(mean(df$gross,na.rm=TRUE))
df$num_voted_users[is.na(df$num_voted_users)]<-as.integer(mean(df$num_voted_users,na.rm=TRUE))
df$cast_total_facebook_likes[is.na(df$cast_total_facebook_likes)]<-as.integer(mean(df$cast_total_facebook_likes,na.rm=TRUE))
df$title_year[is.na(df$title_year)]<-as.integer(mean(df$title_year,na.rm=TRUE))
df$facenumber_in_poster[is.na(df$facenumber_in_poster)]<-as.integer(mean(df$facenumber_in_poster,na.rm=TRUE))
df$num_user_for_reviews[is.na(df$num_user_for_reviews)]<-as.integer(mean(df$num_user_for_reviews,na.rm=TRUE))
df$budget[is.na(df$budget)]<-as.integer(mean(df$budget,na.rm=TRUE))
df$actor_2_facebook_likes[is.na(df$actor_2_facebook_likes)]<-as.integer(mean(df$actor_2_facebook_likes,na.rm=TRUE))
df$imdb_score[is.na(df$imdb_score)]<-mean(df$imdb_score,na.rm=TRUE)
df$aspect_ratio[is.na(df$aspect_ratio)]<-mean(df$aspect_ratio,na.rm=TRUE)
df$movie_facebook_likes[is.na(df$movie_facebook_likes)]<-as.integer(mean(df$movie_facebook_likes,na.rm=TRUE))
```

5.CHECKING FOR NULL VALUES IN EACH COLUMN

R CODE

```r
#number of NA VALUES in the dataframe
for(i in colnames(df))
{
  print(i)
  print(sum(is.na(df$i)))
}
nrow(df)
```

OUTPUT

```
[1] "color"
[1] 0
[1] "director_name"
[1] 0
[1] "num_critic_for_reviews"
[1] 0
[1] "duration"
[1] 0
[1] "director_facebook_likes"
[1] 0
[1] "actor_3_facebook_likes"
[1] 0
[1] "actor_2_name"
[1] 0
[1] "actor_1_facebook_likes"
[1] 0
[1] "gross"
[1] 0
[1] "genres"
[1] 0
[1] "actor_1_name"
[1] 0
[1] "movie_title"
[1] 0
[1] "num_voted_users"
[1] 0
[1] "cast_total_facebook_likes"
[1] 0
[1] "actor_3_name"
[1] 0
[1] "facenumber_in_poster"
[1] 0
[1] "plot_keywords"
[1] 0
[1] "movie_imdb_link"
[1] 0
[1] "num_user_for_reviews"
[1] 0
[1] "language"
[1] 0
```

```
> str(df)
'data.frame':   4894 obs. of  28 variables:
 $ color                    : chr  "Color" "Color" "Color" "Color" ...
 $ director_name            : chr  "James Cameron" "Gore Verbinski" "Sam Mendes" "Christopher Nolan" ...
 $ num_critic_for_reviews   : int  723 302 602 813 462 392 324 635 375 673 ...
 $ duration                 : int  178 169 148 164 132 156 100 141 153 183 ...
 $ director_facebook_likes  : int  0 563 0 22000 475 0 15 0 282 0 ...
 $ actor_3_facebook_likes   : int  855 1000 161 23000 530 4000 284 19000 10000 2000 ...
 $ actor_2_name             : chr  "Joel David Moore" "Orlando Bloom" "Rory Kinnear" "Christian Bale" ...
 $ actor_1_facebook_likes   : int  1000 40000 11000 27000 640 24000 799 26000 25000 15000 ...
 $ gross                    : num  7.61e+08 3.09e+08 2.00e+08 4.48e+08 7.31e+07 ...
 $ genres                   : chr  "Action|Adventure|Fantasy|Sci-Fi" "Action|Adventure|Fantasy" "Action|Adventure|Thriller" "Action|Thriller" ...
 $ actor_1_name             : chr  "CCH Pounder" "Johnny Depp" "Christoph Waltz" "Tom Hardy" ...
 $ movie_title              : chr  "Avatar " "Pirates of the Caribbean: At World's End " "Spectre " "The Dark Knight Rises " ...
 $ num_voted_users          : int  886204 471220 275868 1144337 212204 383056 294810 462669 321795 371639 ...
 $ cast_total_facebook_likes: int  4834 48350 11700 106759 1873 46055 2036 92000 58753 24450 ...
 $ actor_3_name             : chr  "Wes Studi" "Jack Davenport" "Stephanie Sigman" "Joseph Gordon-Levitt" ...
 $ facenumber_in_poster     : int  0 0 1 0 1 0 1 4 3 0 ...
 $ plot_keywords            : chr  "avatar|future|marine|native|paraplegic" "goddess|marriage ceremony|marriage proposal|pirate|singapore" "bomb|espionag
sequel|spy|terrorist" "deception|imprisonment|lawlessness|police officer|terrorist plot" ...
 $ movie_imdb_link          : chr  "http://www.imdb.com/title/tt0499549/?ref_=fn_tt_tt_1" "http://www.imdb.com/title/tt0449088/?ref_=fn_tt_tt_1" "http://
w.imdb.com/title/tt2379713/?ref_=fn_tt_tt_1" "http://www.imdb.com/title/tt1345836/?ref_=fn_tt_tt_1" ...
 $ num_user_for_reviews     : int  3054 1238 994 2701 738 1902 387 1117 973 3018 ...
 $ language                 : chr  "English" "English" "English" "English" ...
 $ country                  : chr  "USA" "USA" "UK" "USA" ...
 $ content_rating           : chr  "PG-13" "PG-13" "PG-13" "PG-13" ...
 $ budget                   : num  2.37e+08 3.00e+08 2.45e+08 2.50e+08 2.64e+08 ...
 $ title_year               : int  2009 2007 2015 2012 2012 2007 2010 2015 2009 2016 ...
 $ actor_2_facebook_likes   : int  936 5000 393 23000 632 11000 553 21000 11000 4000 ...
 $ imdb_score               : num  7.9 7.1 6.8 8.5 6.6 6.2 7.8 7.5 7.5 6.9 ...
 $ aspect_ratio             : num  1.78 2.35 2.35 2.35 2.35 2.35 1.85 2.35 2.35 2.35 ...
 $ movie_facebook_likes     : int  33000 0 85000 164000 24000 0 29000 118000 10000 197000 ...
```

6. EXPORTING FINAL DATA

R CODE

```
write_xlsx(df,"D:/Projects and Practice/DS PROJECT/final.xlsx")
```

OUTPUT

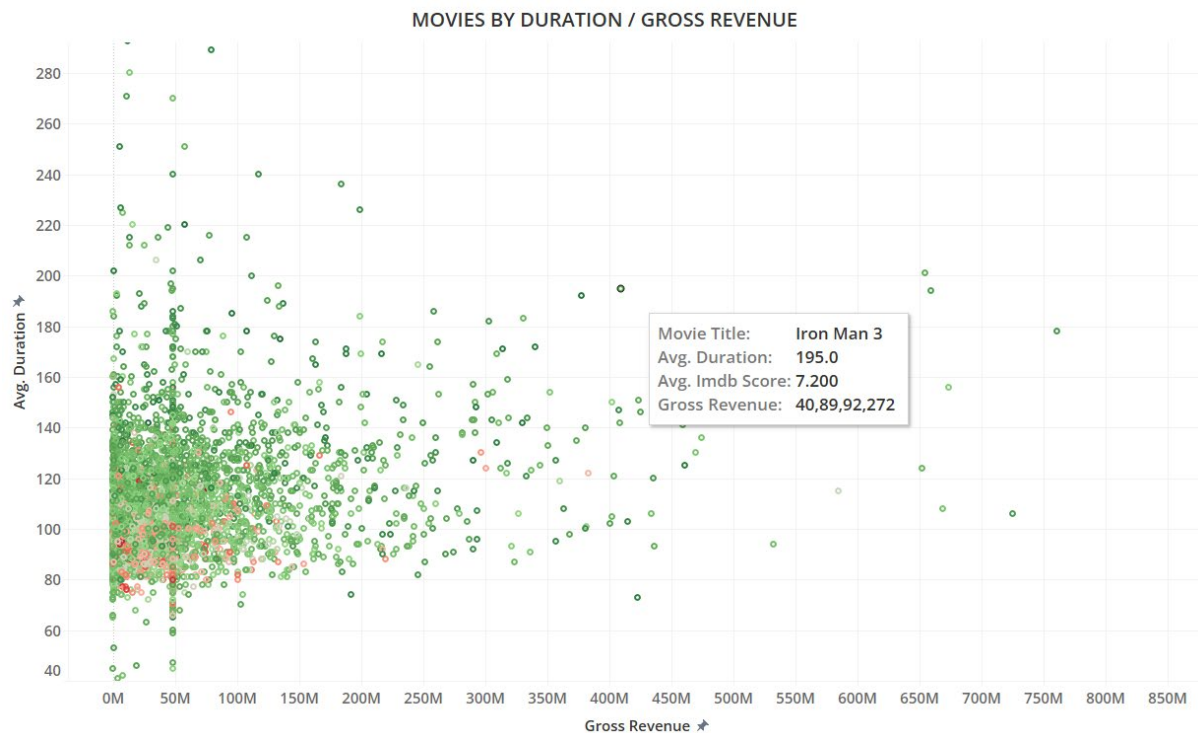| color	rector_nam	ritic_for_r	duration	r_faceboo	3_faceboo	tor_2_nan	1_faceboo	gross	genres	tor_1_nam	movie_title	_voted_u	tal_facebo	tor_3_nan	mber_in_ot	keywor	vie_imdb_	user_for_r	language	country	ntent_rati	budget	tit
Color	James Can	723	178	0	855	Joel David	1000	7.61E+08	Action|Ad	CCH Poun	Avatar	886204	4834	Wes Studi	0	avatar|fut	http://ww	3054	English	USA	PG-13	2.37E+08	
Color	Gore Verbi	302	169	563	1000	Orlando Bl	40000	3.09E+08	Action|Ad	Johnny De	Pirates of	471220	48350	Jack Daver	0	goddess|n	http://ww	1238	English	USA	PG-13	3E+08	
Color	Sam Mend	602	148	0	161	Rory Kinne	11000	2E+08	Action|Ad	Christoph	Spectre	275868	11700	Stephanie	1	bomb|esp	http://ww	994	English	UK	PG-13	2.45E+08	
Color	Christophe	813	164	22000	23000	Christian B	27000	4.48E+08	Action|Thi	Tom Hard	The Dark K	1144337	106759	Joseph Go	0	deception	http://ww	2701	English	USA	PG-13	2.5E+08	
Color	Andrew St	462	132	475	530	Samantha	640	73058679	Action|Ad	Daryl Saba	John Carte	212204	1873	Polly Walk	1	alien|ame	http://ww	738	English	USA	PG-13	2.64E+08	
Color	Sam Raimi	392	156	0	4000	James Fran	24000	3.37E+08	Action|Ad	J.K. Simmo	Spider-Ma	383056	46055	Kirsten Du	0	sandman|	http://ww	1902	English	USA	PG-13	2.58E+08	
Color	Nathan Gr	324	100	15	284	Donna Mu	799	2.01E+08	Adventure	Brad Garre	Tangled	294810	2036	M.C. Gaine	1	17th centu	http://ww	387	English	USA	PG	2.6E+08	
Color	Joss Whed	635	141	0	19000	Robert Do	26000	4.59E+08	Action|Ad	Chris Hem	Avengers:	462669	92000	Scarlett Jo	4	artificial in	http://ww	1117	English	USA	PG-13	2.5E+08	
Color	David Yate	375	153	282	10000	Daniel Rad	25000	3.02E+08	Adventure	Alan Rickn	Harry Pott	321795	58753	Rupert Gri	3	blood|boc	http://ww	973	English	UK	PG	2.5E+08	
Color	Zack Snyde	673	183	0	2000	Lauren Col	15000	3.3E+08	Action|Ad	Henry Cav	Batman v S	371639	24450	Alan D. Pu	0	based on c	http://ww	3018	English	USA	PG-13	2.5E+08	
Color	Bryan Sing	434	169	0	903	Marlon Bra	18000	2E+08	Action|Ad	Kevin Spac	Superman	240396	29991	Frank Lang	0	crystal|ep	http://ww	2367	English	USA	PG-13	2.09E+08	
Color	Marc Forst	403	106	395	393	Mathieu A	451	1.68E+08	Action|Ad	Giancarlo	Quantum c	330784	2023	Rory Kinne	1	action her	http://ww	1243	English	UK	PG-13	2E+08	
Color	Gore Verbi	313	151	563	1000	Orlando Bl	40000	4.23E+08	Action|Ad	Johnny De	Pirates of	522040	48486	Jack Daver	2	box office	http://ww	1832	English	USA	PG-13	2.25E+08	
Color	Gore Verbi	450	150	563	1000	Ruth Wilsc	40000	89289910	Action|Ad	Johnny De	The Lone F	181792	45757	Tom Wilkii	1	horse|out	http://ww	711	English	USA	PG-13	2.15E+08	
Color	Zack Snyde	733	143	0	748	Christophe	15000	2.91E+08	Action|Ad	Henry Cav	Man of Ste	548573	20495	Harry Lenr	0	based on c	http://ww	2536	English	USA	PG-13	2.25E+08	
Color	Andrew Ac	258	150	80	201	Pierfrance	22000	1.42E+08	Action|Ad	Peter Dink	The Chron	149922	22697	Damián Al	4	brother br	http://ww	438	English	USA	PG	2.25E+08	
Color	Joss Whed	703	173	0	19000	Robert Do	26000	6.23E+08	Action|Ad	Chris Hem	The Aveng	995415	87697	Scarlett Jo	3	alien invas	http://ww	1722	English	USA	PG-13	2.2E+08	
Color	Rob Marsh	448	136	252	1000	Sam Claflir	40000	2.41E+08	Action|Ad	Johnny De	Pirates of	370704	54083	Stephen G	4	blackbeard	http://ww	484	English	USA	PG-13	2.5E+08	
Color	Barry Sonr	451	106	188	718	Michael St	10000	1.79E+08	Action|Ad	Will Smith	Men in Bla	268154	12572	Nicole Sch	1	alien|crim	http://ww	341	English	USA	PG-13	2.25E+08	
Color	Peter Jack:	422	164	0	773	Adam Brov	5000	2.55E+08	Adventure	Aidan Turr	The Hobbi	354228	9152	James Nes	0	army|elf|l	http://ww	802	English	New Zeala	PG-13	2.5E+08	
Color	Marc Web	599	153	464	963	Andrew Ga	15000	2.62E+08	Action|Ad	Emma Sto	The Amazi	451803	28489	Chris Zylka	0	lizard|outc	http://ww	1225	English	USA	PG-13	2.3E+08	
Color	Ridley Sco	343	156	0	738	William Hu	891	1.05E+08	Action|Ad	Mark Addy	Robin Hoo	211765	3244	Scott Grim	0	1190s|arc	http://ww	546	English	USA	PG-13	2E+08	
Color	Peter Jack:	509	186	0	773	Adam Brov	5000	2.58E+08	Adventure	Aidan Turr	The Hobbi	483540	9152	James Nes	6	dwarf|elf|	http://ww	951	English	USA	PG-13	2.25E+08	
Color	Chris Weit	251	113	129	1000	Eva Green	16000	70083519	Adventure	Christophe	The Golde	149019	24106	Kristin Sco	2	children|e	http://ww	666	English	USA	PG-13	1.8E+08	
Color	Peter Jack:	446	201	0	84	Thomas Kr	6000	2.18E+08	Action|Ad	Naomi Wa	King Kong	316018	7123	Evan Parke	0	animal nar	http://ww	2618	English	New Zeala	PG-13	2.07E+08	
Color	James Can	315	194	0	794	Kate Winsl	29000	6.59E+08	Drama|Ro	Leonardo	Titanic	793059	45223	Gloria Stua	0	artist|love	http://ww	2528	English	USA	PG-13	2E+08	

FINAL.XLSX

TABLEAU QUERIES

ALL QUERIES HAVE BEEN FILTERED ACCORDING TO DIRECTOR WISE

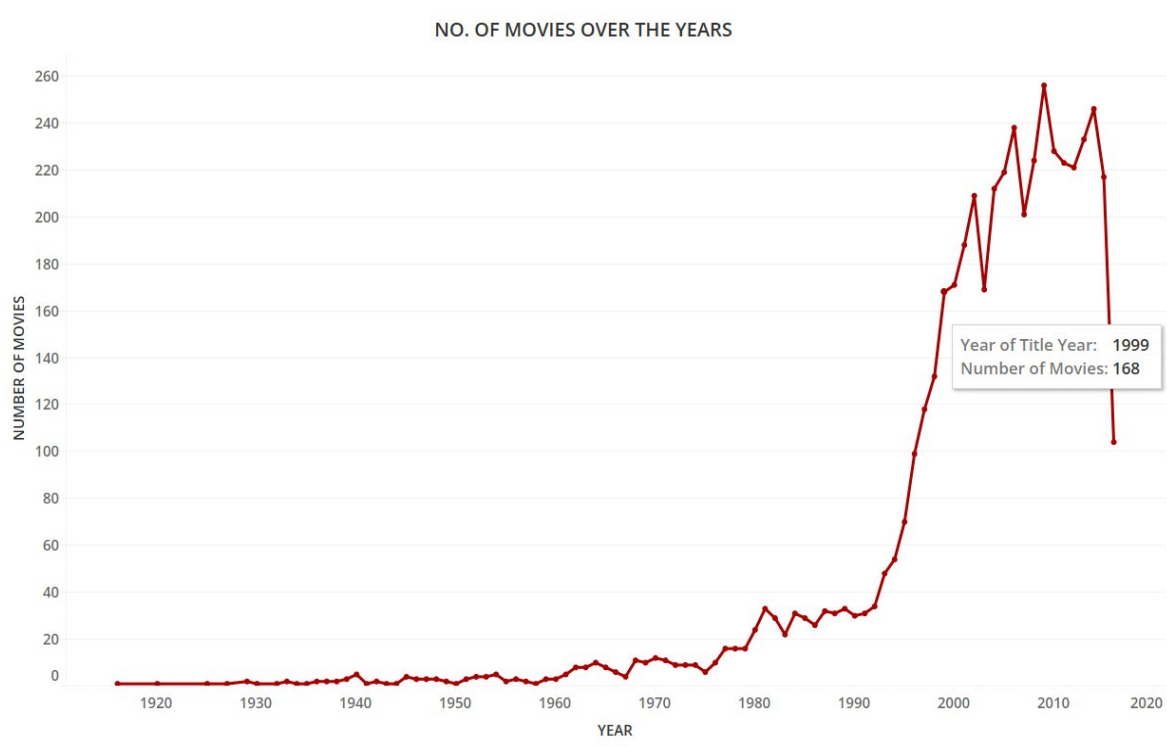1. WHAT IS THE STATISTICS OF THE DIRECTOR IN TERMS OF DURATION OF MOVIE, AVG IMDB SCORE , GROSS REVENUE, NUMBER OF MOVIES AND PEOPLE LIKELINESS

DIRECTOR STATISTICS

Avg. Duration	Gross Revenue	Avg. Imdb Score	Number of Movies	Avg. Director Facebook Likes
108	237,545,471,282	6	4,894	693

2. DOES THE GROSS REVENUE DEPEND ON THE DURATION OF THE MOVIE AND THE IMDB SCORE ATTAINED BY THE MOVIE IN THE BOX OFFICE

MOVIES BY DURATION / GROSS REVENUE

Movie Title:	Iron Man 3
Avg. Duration:	195.0
Avg. Imdb Score:	7.200
Gross Revenue:	40,89,92,272

Avg. Duration ✈

Gross Revenue ✈

3.HOW HAS THE NUMBER OF MOVIES PRODUCED CHANGED OVER THE YEARS

NO. OF MOVIES OVER THE YEARS

| Year of Title Year: | 1999 |
| Number of Movies: | 168 |

NUMBER OF MOVIES

YEAR

4.WHAT GENRE DOES THE DIRECTOR FOCUS MORE UPON AND DOES THE IMDB SCORE GOVERN THIS ?

IMDB   5.420 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 7.600

MOVIE GENRE

Comedy

Action

Drama

Adventure

Crime

Horror

Biography

Animation

Fantasy

Thriller

Genres - Split 1:   Action
Number of Movies: 1,130
Avg. Imdb Score: 6.220
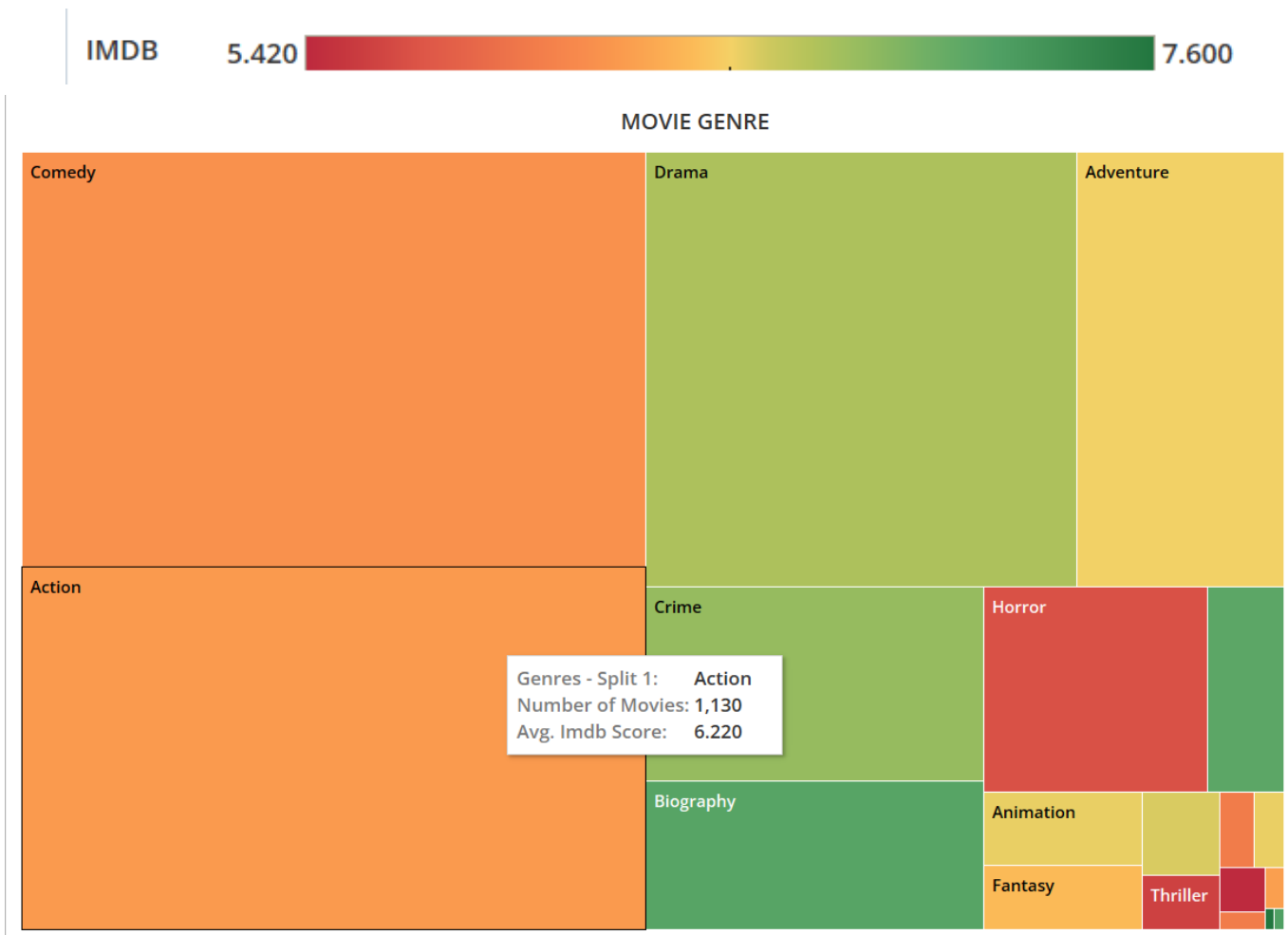
5.DOES THE IMDB SCORE PLAY A ROLE IN THE MOVIE LIKENESS AMONGST THE PUBLIC

MOVIE USER LIKES

Movie Title: Jurassic World
Avg. Imdb Score: 7.000
Avg. Movie Facebook Likes: 150,000
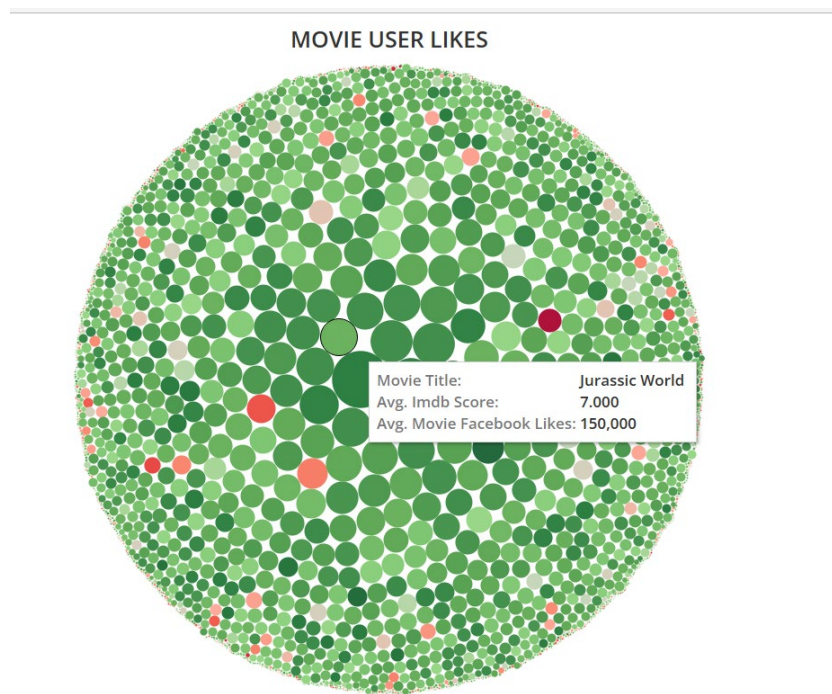
6. WHAT IS THE DISTRIBUTION OF THE MOST CASTED ACTORS BY THE DIRECTORS ACCORDING TO THE GROSS REVENUE OF THE MOVIE

FAVOURITE ACTORS

Bar chart titled "FAVOURITE ACTORS" showing Actor Name (y-axis) versus Gross Revenue (x-axis, 0M to 4000M). Actors listed top to bottom: Johnny Depp, Harrison Ford, Tom Hanks, Tom Cruise, J.K. Simmons, Will Smith, Chris Hemsworth, Leonardo DiCaprio, Robert Downey Jr., Jennifer Lawrence, Robert De Niro, Robin Williams, Steve Buscemi, Bruce Willis, Morgan Freeman, Denzel Washington, Matt Damon, Robert Pattinson, Liam Neeson, Hugh Jackman, Scarlett Johansson, Bradley Cooper, Natalie Portman, Christian Bale, Nicolas Cage, Dwayne Johnson, Bill Murray, Gerard Butler, Channing Tatum, Sylvester Stallone, Julia Roberts.