

ML Assignment 1

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```
# Print out descriptive statistics for a selection of quantitative and categorical variables
mydata <- read.csv("P2-Movie-Ratings.csv")
mydata
```

	Film	Genre
## 1	(500) Days of Summer	Comedy
## 2	10,000 B.C.	Adventure
## 3	12 Rounds	Action
## 4	127 Hours	Adventure
## 5	17 Again	Comedy
## 6	2012	Action
## 7	27 Dresses	Comedy
## 8	30 Days of Night	Horror
## 9	30 Minutes or Less	Comedy
## 10	50/50	Comedy
## 11	88 Minutes	Drama
## 12	A Dangerous Method	Drama
## 13	A Nightmare on Elm Street	Horror
## 14	A Serious Man	Drama
## 15	A Very Harold and Kumar Christmas	Comedy
## 16	Abduction	Action
## 17	Across the Universe	Romance
## 18	Adventureland	Comedy
## 19	Albert Nobbs	Drama
## 20	Alice in Wonderland	Adventure
## 21	Alien vs. Predator -- Requiem	Horror
## 22	Aliens in the Attic	Adventure
## 23	All About Steve	Comedy
## 24	All Good Things	Drama
## 25	Amelia	Adventure
## 26	American Gangster	Thriller
## 27	An Education	Drama
## 28	Anonymous	Drama
## 29	Apollo 18	Horror
## 30	Appaloosa	Action
## 31	Armored	Action
## 32	Arthur	Comedy
## 33	Australia	Adventure
## 34	Avatar	Action
## 35	Away We Go	Comedy
## 36	Baby Mama	Comedy
## 37	Babylon A.D.	Action

## 38	Bad Teacher	Comedy
## 39	Bandslam	Comedy
## 40	Bangkok Dangerous	Action
## 41	Battle: Los Angeles	Action
## 42	Be Kind, Rewind	Comedy
## 43	Beastly	Romance
## 44	Bedtime Stories	Comedy
## 45	Beginners	Comedy
## 46	Beowulf	Action
## 47	Beverly Hills Chihuahua	Adventure
## 48	Black Swan	Drama
## 49	Blades of Glory	Comedy
## 50	Body of Lies	Action
## 51	Bride Wars	Comedy
## 52	Bridesmaids	Comedy
## 53	Brooklyn's Finest	Action
## 54	Brothers	Drama
## 55	Bruno	Comedy
## 56	Buried	Drama
## 57	Burlesque	Drama
## 58	Burn After Reading	Comedy
## 59	Captain America: The First Avenger	Action
## 60	Case 39	Horror
## 61	Cats & Dogs: The Revenge of Kitty Galore	Action
## 62	Cedar Rapids	Comedy
## 63	Changeling	Drama
## 64	Cirque du Freak: The Vampire's Assistant	Action
## 65	City Island	Comedy
## 66	City of Ember	Adventure
## 67	Clash of the Titans	Action
## 68	Cloverfield	Action
## 69	College Road Trip	Adventure
## 70	Colombiana	Action
## 71	Conan the Barbarian	Action
## 72	Confessions of a Shopaholic	Comedy
## 73	Contagion	Thriller
## 74	Cop Out	Action
## 75	Country Strong	Drama
## 76	Couples Retreat	Comedy
## 77	Cowboys and Aliens	Action
## 78	Crank: High Voltage	Action
## 79	Crazy, Stupid, Love	Romance
## 80	Cyrus	Comedy
## 81	Daddy Day Camp	Comedy
## 82	Dance Flick	Action
## 83	Date Night	Comedy
## 84	Daybreakers	Action
## 85	Dear John	Drama
## 86	Death at a Funeral	Comedy
## 87	Death Race	Action
## 88	Definitely, Maybe	Comedy
## 89	Devil	Horror
## 90	Diary of a Wimpy Kid	Comedy
## 91	Diary of a Wimpy Kid 2: Rodrick Rules	Comedy

## 92	Did You Hear About the Morgans?	Comedy
## 93	Dinner for Schmucks	Comedy
## 94	Disaster Movie	Comedy
## 95	District 9	Action
## 96	Disturbia	Thriller
## 97	Dolphin Tale	Drama
## 98	Don't Be Afraid Of The Dark	Horror
## 99	Doomsday	Action
## 100	Doubt	Drama
## 101	Drag Me to Hell	Horror
## 102	Dragon Wars (aka D-War)	Action
## 103	Dragonball Evolution	Action
## 104	Dream House	Horror
## 105	Drillbit Taylor	Comedy
## 106	Drive	Thriller
## 107	Drive Angry	Action
## 108	Due Date	Comedy
## 109	Duplicity	Romance
## 110	Dylan Dog: Dead of Night	Horror
## 111	Eagle Eye	Action
## 112	Easy A	Comedy
## 113	Eat Pray Love\t	Drama
## 114	Enchanted	Comedy
## 115	Epic Movie	Comedy
## 116	Evan Almighty	Comedy
## 117	Everybody's Fine	Drama
## 118	Everything Must Go	Drama
## 119	Extract	Comedy
## 120	Extraordinary Measures\t	Drama
## 121	Extremely Loud and Incredibly Close	Drama
## 122	Fame	Comedy
## 123	Fantastic Four: Rise of the Silver Surfer	Action
## 124	Fast and Furious	Action
## 125	Fast Five	Action
## 126	Faster\t	Action
## 127	Final Destination 5	Horror
## 128	Fired Up!	Comedy
## 129	Fireproof	Drama
## 130	First Sunday	Comedy
## 131	Fool's Gold	Adventure
## 132	Footloose	Drama
## 133	For Colored Girls	Drama
## 134	Forgetting Sarah Marshall	Comedy
## 135	Four Christmases	Comedy
## 136	Friday the 13th	Horror
## 137	Friends With Benefits	Romance
## 138	Fright Night	Horror
## 139	From Paris with Love	Action
## 140	Funny People	Comedy
## 141	Furry Vengeance\t	Comedy
## 142	G-Force	Action
## 143	G.I. Joe: The Rise of Cobra	Action
## 144	Gamer	Action
## 145	Get Him to the Greek	Comedy

## 146	Get Smart	Action
## 147	Ghost Rider	Action
## 148	Ghost Town	Comedy
## 149	Ghosts of Girlfriends Past	Comedy
## 150	Going the Distance	Comedy
## 151	Good Luck Chuck	Comedy
## 152	Gran Torino	Drama
## 153	Green Lantern	Action
## 154	Green Zone	Action
## 155	Greenberg	Comedy
## 156	Grindhouse	Action
## 157	Grown Ups\t	Comedy
## 158	Gulliver's Travels	Comedy
## 159	Hachiko: A Dog's Story	Drama
## 160	Hall Pass	Comedy
## 161	Halloween	Horror
## 162	Halloween II	Horror
## 163	Hancock	Action
## 164	Hanna	Action
## 165	Hannah Montana: The Movie	Comedy
## 166	Harold and Kumar Escape from Guantanamo Bay	Adventure
## 167	Harry Potter and the Deathly Hallows Part 1	Adventure
## 168	Harry Potter and the Half-Blood Prince	Adventure
## 169	Harry Potter and the Order of the Phoenix	Adventure
## 170	He's Just Not That Into You	Comedy
## 171	Hellboy II: The Golden Army	Action
## 172	Hesher	Drama
## 173	High School Musical 3: Senior Year	Comedy
## 174	Hitman	Action
## 175	Horrible Bosses	Comedy
## 176	Hostel: Part II	Horror
## 177	Hot Tub Time Machine	Adventure
## 178	Hotel for Dogs	Comedy
## 179	Hugo	Adventure
## 180	I Am Legend	Thriller
## 181	I Am Number Four	Thriller
## 182	I Love You Beth Cooper	Comedy
## 183	I Love You Phillip Morris	Comedy
## 184	I Love You, Man	Comedy
## 185	I Now Pronounce You Chuck and Larry	Comedy
## 186	I'm Still Here	Comedy
## 187	Imagine That	Comedy
## 188	Immortals	Action
## 189	In the Land of Women	Comedy
## 190	In Time	Thriller
## 191	Inception	Action
## 192	Indiana Jones and the Kingdom of the Crystal Skull	Action
## 193	Inglourious Basterds	Adventure
## 194	Inkheart	Adventure
## 195	Insidious	Horror
## 196	Into the Wild	Drama
## 197	Iron Man	Action
## 198	Iron Man 2	Action
## 199	It's Complicated	Comedy

## 200	J. Edgar	Drama
## 201	Jack and Jill	Comedy
## 202	Jane Eyre	Romance
## 203	Jennifer's Body	Comedy
## 204	Johnny English Reborn	Comedy
## 205	Jonah Hex	Action
## 206	Journey to the Center of the Earth	Action
## 207	Jumper	Action
## 208	Juno	Comedy
## 209	Just Go With It	Romance
## 210	Just Wright	Comedy
## 211	Kick-Ass	Action
## 212	Killer Elite	Action
## 213	Killers	Action
## 214	Kit Kittredge: An American Girl	Drama
## 215	Knight and Day	Action
## 216	Knocked Up	Comedy
## 217	Knowing	Drama
## 218	Land of the Lost	Drama
## 219	Larry Crowne	Drama
## 220	Leap Year	Comedy
## 221	Leatherheads	Comedy
## 222	Legion	Action
## 223	Letters to Juliet	Comedy
## 224	License to Wed	Comedy
## 225	Life as We Know It	Comedy
## 226	Limitless	Thriller
## 227	Lions for Lambs	Drama
## 228	Little Fockers	Comedy
## 229	Live Free or Die Hard	Action
## 230	Love & Other Drugs	Comedy
## 231	Love Happens	Drama
## 232	MacGruber	Action
## 233	Machete	Action
## 234	Machine Gun Preacher	Action
## 235	Mad Money	Comedy
## 236	Made of Honor	Comedy
## 237	Mamma Mia!	Comedy
## 238	Margin Call	Thriller
## 239	Marley and Me	Comedy
## 240	Marmaduke	Comedy
## 241	Max Payne	Action
## 242	Meet Dave	Adventure
## 243	Meet the Spartans	Comedy
## 244	Michael Clayton	Thriller
## 245	Midnight in Paris	Romance
## 246	Miracle at St. Anna	Action
## 247	Mirrors	Horror
## 248	Miss Pettigrew Lives for a Day	Comedy
## 249	Mission Impossible 4	Action
## 250	Moneyball	Drama
## 251	Monte Carlo	Romance
## 252	Morning Glory	Comedy
## 253	Mother and Child	Drama

## 254	Mr. Brooks	Thriller
## 255	Mr. Popper's Penguins	Comedy
## 256	Music and Lyrics	Romance
## 257	My Best Friend's Girl	Comedy
## 258	My Life in Ruins	Comedy
## 259	My Sister's Keeper	Drama
## 260	My Soul to Take	Horror
## 261	My Week with Marilyn	Drama
## 262	Nancy Drew	Thriller
## 263	Nanny McPhee Returns	Comedy
## 264	National Treasure: Book of Secrets	Thriller
## 265	Never Back Down	Action
## 266	Never Let Me Go	Drama
## 267	New Year's Eve	Romance
## 268	Next	Thriller
## 269	Next Day Air	Action
## 270	Nick and Norah's Infinite Playlist	Comedy
## 271	Night at the Museum: Battle of the Smithsonian	Action
## 272	Nights in Rodanthe	Drama
## 273	Nim's Island	Adventure
## 274	Nine	Drama
## 275	Ninja Assassin	Action
## 276	No Country for Old Men	Drama
## 277	No Reservations	Comedy
## 278	No Strings Attached	Comedy
## 279	Norbit	Comedy
## 280	Not Easily Broken	Drama
## 281	Observe and Report	Comedy
## 282	Obsessed	Drama
## 283	Ocean's 13	Thriller
## 284	Old Dogs	Comedy
## 285	One Day	Romance
## 286	One Missed Call	Horror
## 287	Orphan	Horror
## 288	Our Family Wedding	Comedy
## 289	Our Idiot Brother	Comedy
## 290	Over Her Dead Body	Comedy
## 291	P.S. I Love You	Romance
## 292	Pandorum	Action
## 293	Paranormal Activity	Horror
## 294	Paranormal Activity 2	Horror
## 295	Paranormal Activity 3	Horror
## 296	Pathfinder: Legend of the Ghost Warrior	Action
## 297	Paul	Comedy
## 298	Paul Blart: Mall Cop	Action
## 299	Penelope	Comedy
## 300	Percy Jackson & the Olympians: The Lightning Thief	Action
## 301	Pineapple Express	Action
## 302	Piranha 3-D	Comedy
## 303	Pirate Radio (The Boat that Rocked, UK)	Comedy
## 304	Pirates of the Caribbean: On Stranger Tides	Action
## 305	Pirates of the Caribbean: At World's End	Action
## 306	Please Give	Comedy
## 307	Post Grad	Comedy

## 308	Predators	Action
## 309	Premonition	Drama
## 310	Priest	Action
## 311	Prince of Persia: The Sands of Time	Action
## 312	Prom Night	Horror
## 313	Punisher: War Zone	Action
## 314	Push	Action
## 315	Quantum of Solace	Action
## 316	Quarantine	Horror
## 317	Race to Witch Mountain	Action
## 318	Rachel Getting Married	Drama
## 319	Rambo	Action
## 320	Real Steel	Action
## 321	Red	Action
## 322	Red Riding Hood	Horror
## 323	Red State	Horror
## 324	Remember Me	Drama
## 325	Repo Men	Action
## 326	Resident Evil: Afterlife	Action
## 327	Rise of the Planet of the Apes	Action
## 328	Robin Hood	Action
## 329	Role Models	Comedy
## 330	Rush Hour 3	Action
## 331	Salt	Action
## 332	Sanctum	Action
## 333	Saw IV	Horror
## 334	Saw VI	Horror
## 335	Scott Pilgrim vs. the World	Action
## 336	Scream 4	Horror
## 337	Season Of The Witch	Action
## 338	Semi-Pro	Comedy
## 339	Seven Pounds	Drama
## 340	Sex and the City	Comedy
## 341	Sex and the City 2	Comedy
## 342	Sex Drive	Adventure
## 343	Shame	Drama
## 344	Shark Night 3D	Horror
## 345	She's Out of My League	Comedy
## 346	Sherlock Holmes	Action
## 347	Sherlock Holmes 2	Action
## 348	Shoot 'Em Up	Action
## 349	Shooter	Action
## 350	Shutter	Horror
## 351	Shutter Island	Drama
## 352	Skyline	Action
## 353	Smart People	Comedy
## 354	Solitary Man	Comedy
## 355	Something Borrowed	Romance
## 356	Sorority Row	Horror
## 357	Soul Men	Comedy
## 358	Soul Surfer	Drama
## 359	Source Code	Thriller
## 360	Speed Racer	Action
## 361	Spider-Man 3	Action

## 362	Spy Kids: All The Time in the World	Action
## 363	Star Trek	Action
## 364	Stardust	Adventure
## 365	Step Brothers	Comedy
## 366	Step Up 2: The Streets	Drama
## 367	Step Up 3D	Drama
## 368	Stone	Drama
## 369	Stop-Loss	Drama
## 370	Street Fighter: The Legend of Chun-Li	Action
## 371	Street Kings	Action
## 372	Sucker Punch	Action
## 373	Sunshine Cleaning	Comedy
## 374	Super 8	Horror
## 375	Superbad	Comedy
## 376	Superhero Movie	Comedy
## 377	Surrogates	Action
## 378	Swing Vote	Comedy
## 379	Take Me Home Tonight	Comedy
## 380	Take Shelter	Drama
## 381	Taken	Action
## 382	Takers	Action
## 383	Taking Woodstock	Comedy
## 384	Terminator Salvation	Action
## 385	The A-Team	Action
## 386	The Adjustment Bureau	Thriller
## 387	The Adventures of Tintin	Adventure
## 388	The Artist	Drama
## 389	The Back-up Plan	Comedy
## 390	The Bank Job	Thriller
## 391	The Beaver	Drama
## 392	The Big Year	Comedy
## 393	The Book of Eli	Action
## 394	The Bounty Hunter	Action
## 395	The Bourne Ultimatum	Thriller
## 396	The Box	Drama
## 397	The Boy in the Striped Pyjamas	Drama
## 398	The Brave One	Action
## 399	The Bucket List	Drama
## 400	The Change Up	Comedy
## 401	The Chronicles of Narnia: Prince Caspian	Action
## 402	The Chronicles of Narnia: The Voyage of the Dawn Treader	Adventure
## 403	The Company Men	Drama
## 404	The Conspirator	Drama
## 405	The Crazies	Horror
## 406	The Darjeeling Limited	Drama
## 407	The Dark Knight	Thriller
## 408	The Day the Earth Stood Still	Thriller
## 409	The Debt	Thriller
## 410	The Descendants	Drama
## 411	The Dilemma	Comedy
## 412	The Duchess	Drama
## 413	The Eagle	Action
## 414	The Expendables	Action
## 415	The Eye	Horror

## 416	The Fighter	Drama
## 417	The Final Destination	Horror
## 418	The Forbidden Kingdom	Action
## 419	The Game Plan	Comedy
## 420	The Girl With The Dragon Tattoo	Thriller
## 421	The Golden Compass	Action
## 422	The Green Hornet	Action
## 423	The Hangover	Comedy
## 424	The Hangover Part II	Comedy
## 425	The Happening	Thriller
## 426	The Haunting in Connecticut	Drama
## 427	The Haunting of Molly Hartley	Horror
## 428	The Heartbreak Kid	Comedy
## 429	The Help	Drama
## 430	The Hills Have Eyes 2	Horror
## 431	The House Bunny	Comedy
## 432	The Hurt Locker	Drama
## 433	The Ides of March	Thriller
## 434	The Incredible Hulk	Action
## 435	The Informant!	Comedy
## 436	The International	Action
## 437	The Invention of Lying	Comedy
## 438	The Iron Lady	Drama
## 439	The Joneses	Comedy
## 440	The Karate Kid	Action
## 441	The Kids Are All Right	Comedy
## 442	The Kingdom	Action
## 443	The Kite Runner	Drama
## 444	The Last Airbender	Action
## 445	The Last Exorcism	Drama
## 446	The Last Song	Drama
## 447	The Lincoln Lawyer	Drama
## 448	The Longshots	Comedy
## 449	The Losers	Action
## 450	The Love Guru	Comedy
## 451	The Lovely Bones	Drama
## 452	The Mechanic	Action
## 453	The Men Who Stare at Goats	Comedy
## 454	The Mist	Horror
## 455	The Mummy: Tomb of the Dragon Emperor	Action
## 456	The Muppets	Comedy
## 457	The Nanny Diaries	Comedy
## 458	The Other Boleyn Girl	Drama
## 459	The Other Guys	Action
## 460	The Pink Panther 2	Adventure
## 461	The Proposal	Comedy
## 462	The Reaping	Horror
## 463	The Rite	Horror
## 464	The Road	Adventure
## 465	The Roommate	Horror
## 466	The Ruins	Horror
## 467	The Rum Diary	Drama
## 468	The Secret Life of Bees	Drama
## 469	The Simpsons Movie	Comedy

## 470	The Sitter	Comedy
## 471	The Soloist	Drama
## 472	The Son Of No One	Thriller
## 473	The Sorcerer's Apprentice	Action
## 474	The Spirit	Action
## 475	The Spy Next Door	Action
## 476	The Strangers	Horror
## 477	The Switch	Comedy
## 478	The Taking of Pelham 1 2 3	Action
## 479	The Thing	Horror
## 480	The Three Musketeers	Action
## 481	The Time Traveler's Wife	Drama
## 482	The Tourist	Thriller
## 483	The Tree Of Life	Drama
## 484	The Twilight Saga: Eclipse\t	Drama
## 485	The Twilight Saga: New Moon	Drama
## 486	The Ugly Truth	Comedy
## 487	The Unborn	Horror
## 488	The Uninvited	Drama
## 489	The Visitor	Drama
## 490	The Wolfman	Drama
## 491	The Women	Drama
## 492	The X-Files: I Want to Believe	Thriller
## 493	There Will Be Blood	Drama
## 494	Thor	Action
## 495	Tinker Tailor Soldier Spy	Thriller
## 496	TMNT	Action
## 497	Tooth Fairy	Comedy
## 498	Tower Heist	Comedy
## 499	Traitor	Thriller
## 500	Transformers	Action
## 501	Transformers: Dark of the Moon	Action
## 502	Transformers: Revenge of the Fallen	Action
## 503	Transporter 3	Action
## 504	Trespass	Thriller
## 505	Tron: Legacy	Action
## 506	Tropic Thunder	Comedy
## 507	True Grit	Adventure
## 508	Twilight	Romance
## 509	Twilight: Breaking Dawn	Romance
## 510	Tyler Perry's Meet the Browns	Drama
## 511	Tyler Perry's The Family That Preys	Drama
## 512	Tyler Perry's Why Did I get Married	Romance
## 513	Under the Same Moon	Drama
## 514	Underworld: Rise of the Lycans	Action
## 515	Unknown	Thriller
## 516	Unstoppable	Action
## 517	Untraceable	Thriller
## 518	Up in the Air	Drama
## 519	Vacancy	Comedy
## 520	Valentine's Day	Comedy
## 521	Valkyrie	Thriller
## 522	Vampires Suck	Comedy
## 523	Vanishing on 7th Street	Horror

## 524	Vantage Point	Thriller
## 525	Vicky Cristina Barcelona	Romance
## 526	W.	Drama
## 527	Waiting For Forever	Romance
## 528	Waitress	Romance
## 529	Walk Hard: The Dewey Cox Story	Comedy
## 530	Wall Street: Money Never Sleeps	Drama
## 531	Wanted	Action
## 532	War Horse	Drama
## 533	Warrior	Action
## 534	Watchmen	Action
## 535	Water For Elephants	Drama
## 536	We Bought a Zoo	Comedy
## 537	We Own the Night	Drama
## 538	Welcome Home, Roscoe Jenkins	Comedy
## 539	What Happens in Vegas	Comedy
## 540	What's Your Number	Comedy
## 541	Whatever Works	Comedy
## 542	When in Rome	Comedy
## 543	Where the Wild Things Are	Adventure
## 544	Whip It	Drama
## 545	Whiteout	Action
## 546	Why Did I Get Married Too?	Comedy
## 547	Wild Hogs	Comedy
## 548	Winter's Bone	Drama
## 549	X-Men Origins: Wolverine	Action
## 550	X-Men: First Class	Action
## 551	Year One	Adventure
## 552	Yes Man	Comedy
## 553	Yogi Bear	Comedy
## 554	You Again	Comedy
## 555	You Don't Mess with the Zohan	Comedy
## 556	You Will Meet a Tall Dark Stranger	Comedy
## 557	Your Highness	Comedy
## 558	Youth in Revolt	Comedy
## 559	Zack and Miri Make a Porno	Romance
## 560	Zodiac	Thriller
## 561	Zombieland	Action
## 562	Zookeeper	Comedy

##	Rotten.Tomatoes.Ratings..	Audience.Ratings..	Budget..million...
## 1	87	81	8
## 2	9	44	105
## 3	30	52	20
## 4	93	84	18
## 5	55	70	20
## 6	39	63	200
## 7	40	71	30
## 8	50	57	32
## 9	43	48	28
## 10	93	93	8
## 11	5	51	30
## 12	79	89	20
## 13	13	40	35
## 14	89	64	7

## 15	72	71	19
## 16	4	46	35
## 17	54	84	45
## 18	89	56	10
## 19	53	43	8
## 20	52	72	200
## 21	14	37	40
## 22	30	46	45
## 23	6	35	15
## 24	33	64	20
## 25	21	35	40
## 26	79	87	100
## 27	94	78	8
## 28	46	66	30
## 29	23	31	5
## 30	77	55	20
## 31	40	34	20
## 32	26	49	40
## 33	55	69	78
## 34	83	92	237
## 35	67	74	21
## 36	63	59	70
## 37	7	32	45
## 38	44	38	20
## 39	79	60	20
## 40	9	33	45
## 41	35	50	70
## 42	65	57	20
## 43	19	50	17
## 44	25	63	80
## 45	84	80	4
## 46	71	52	150
## 47	41	56	20
## 48	88	86	13
## 49	69	66	61
## 50	53	65	68
## 51	11	56	30
## 52	90	77	33
## 53	42	47	17
## 54	61	62	26
## 55	68	48	42
## 56	86	63	2
## 57	36	66	55
## 58	78	64	37
## 59	78	75	140
## 60	23	42	26
## 61	13	43	85
## 62	86	61	10
## 63	62	84	55
## 64	38	50	40
## 65	81	77	6
## 66	52	48	38
## 67	28	48	125
## 68	77	67	25

## 69	13	56	140
## 70	28	55	40
## 71	22	34	90
## 72	24	53	70
## 73	84	63	60
## 74	19	45	30
## 75	20	56	15
## 76	12	47	60
## 77	44	50	163
## 78	62	54	13
## 79	78	81	50
## 80	80	51	7
## 81	1	63	6
## 82	17	35	25
## 83	66	58	55
## 84	67	50	20
## 85	29	66	25
## 86	40	48	21
## 87	42	69	45
## 88	71	72	7
## 89	52	45	10
## 90	53	49	15
## 91	47	63	21
## 92	12	31	58
## 93	43	47	69
## 94	2	28	20
## 95	91	81	30
## 96	67	75	20
## 97	84	81	37
## 98	59	37	25
## 99	48	47	33
## 100	78	75	25
## 101	92	61	30
## 102	27	44	75
## 103	15	28	30
## 104	7	38	50
## 105	26	49	40
## 106	93	79	15
## 107	45	38	45
## 108	40	56	50
## 109	64	38	60
## 110	6	28	20
## 111	27	72	80
## 112	85	75	8
## 113	36	46	60
## 114	93	80	85
## 115	2	38	20
## 116	23	56	175
## 117	46	55	21
## 118	74	53	5
## 119	62	37	8
## 120	27	55	31
## 121	47	62	40
## 122	25	43	18

## 123	35	55	130
## 124	28	76	85
## 125	78	83	125
## 126	41	50	24
## 127	61	56	40
## 128	22	52	20
## 129	40	51	1
## 130	13	59	13
## 131	11	53	73
## 132	71	71	24
## 133	33	73	21
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## 149	27	47	50
## 150	53	56	32
## 151	3	61	25
## 152	80	90	33
## 153	27	48	200
## 154	53	60	100
## 155	75	40	0
## 156	82	86	53
## 157	10	59	80
## 158	21	31	112
## 159	58	85	16
## 160	35	44	36
## 161	26	64	20
## 162	20	45	15
## 163	40	67	150
## 164	71	67	30
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## 166	54	65	12
## 167	79	87	125
## 168	83	75	250
## 169	78	82	150
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## 174	15	61	18
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## 177	64	57	36
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## 179	93	84	150
## 180	69	69	150
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## 183	71	57	15
## 184	83	72	40
## 185	13	73	85
## 186	52	38	0
## 187	38	44	55
## 188	36	59	75
## 189	43	72	10
## 190	38	55	40
## 191	86	93	160
## 192	77	59	185
## 193	88	87	70
## 194	39	51	60
## 195	67	65	2
## 196	82	90	15
## 197	94	91	186
## 198	74	80	200
## 199	56	63	85
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## 207	16	50	83
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## 210	45	58	12
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## 352	16	19	10
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## 414	40	58	82
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## 532      2011
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## 555      2008
## 556      2010
## 557      2011
## 558      2009
## 559      2008
## 560      2007
## 561      2009
## 562      2011
```

```
summary(mydata)
```

```
##      Film      Genre  Rotten.Tomatoes.Ratings..
## Length:562    Length:562    Min.   : 0.0
## Class :character Class :character 1st Qu.:25.0
## Mode  :character Mode  :character Median :46.0
##                                     Mean  :47.4
##                                     3rd Qu.:70.0
##                                     Max.   :97.0
## Audience.Ratings.. Budget..million... Year.of.release
## Min.   : 0.00    Min.   : 0.0    Min.   :2007
## 1st Qu.:47.00    1st Qu.: 20.0    1st Qu.:2008
## Median :58.00    Median : 35.0    Median :2009
## Mean   :58.83    Mean   : 50.1    Mean   :2009
## 3rd Qu.:72.00    3rd Qu.: 65.0    3rd Qu.:2010
## Max.   :96.00    Max.   :300.0    Max.   :2011
```

```
mean(mydata$Budget)
```

```
## [1] 50.10498
```



```
sd(mydata$Budget)
```

```
## [1] 48.63848
```

```
library(pastecs)
stat.desc(mydata)
```

```
##      Film Genre Rotten.Tomatoes.Ratings.. Audience.Ratings..
## nbr.val      NA      NA      5.620000e+02      5.620000e+02
## nbr.null      NA      NA      3.000000e+00      2.000000e+00
## nbr.na        NA      NA      0.000000e+00      0.000000e+00
## min           NA      NA      0.000000e+00      0.000000e+00
## max           NA      NA      9.700000e+01      9.600000e+01
## range         NA      NA      9.700000e+01      9.600000e+01
## sum           NA      NA      2.664100e+04      3.306300e+04
## median        NA      NA      4.600000e+01      5.800000e+01
## mean          NA      NA      4.740391e+01      5.883096e+01
## SE.mean       NA      NA      1.113296e+00      7.098376e-01
## CI.mean       NA      NA      2.186738e+00      1.394264e+00
## var           NA      NA      6.965585e+02      2.831746e+02
## std.dev       NA      NA      2.639239e+01      1.682779e+01
## coef.var      NA      NA      5.567556e-01      2.860363e-01
##      Budget..million... Year.of.release
## nbr.val      5.620000e+02 5.620000e+02
## nbr.null      8.000000e+00 0.000000e+00
## nbr.na        0.000000e+00 0.000000e+00
## min           0.000000e+00 2.007000e+03
## max           3.000000e+02 2.011000e+03
## range         3.000000e+02 4.000000e+00
## sum           2.815900e+04 1.129140e+06
## median        3.500000e+01 2.009000e+03
## mean          5.010498e+01 2.009146e+03
## SE.mean       2.051691e+00 5.743472e-02
## CI.mean       4.029934e+00 1.128134e-01
## var           2.365702e+03 1.853896e+00
## std.dev       4.863848e+01 1.361578e+00
## coef.var      9.707315e-01 6.776902e-04
```

```
# Transform at least one variable
log_Budget <- log10(mydata$Budget)
log_Budget
```

```
## [1] 0.9030900 2.0211893 1.3010300 1.2552725 1.3010300 2.3010300 1.4771213
## [8] 1.5051500 1.4471580 0.9030900 1.4771213 1.3010300 1.5440680 0.8450980
## [15] 1.2787536 1.5440680 1.6532125 1.0000000 0.9030900 2.3010300 1.6020600
## [22] 1.6532125 1.1760913 1.3010300 1.6020600 2.0000000 0.9030900 1.4771213
## [29] 0.6989700 1.3010300 1.3010300 1.6020600 1.8920946 2.3747483 1.3222193
## [36] 1.8450980 1.6532125 1.3010300 1.3010300 1.6532125 1.8450980 1.3010300
## [43] 1.2304489 1.9030900 0.6020600 2.1760913 1.3010300 1.1139434 1.7853298
## [50] 1.8325089 1.4771213 1.5185139 1.2304489 1.4149733 1.6232493 0.3010300
## [57] 1.7403627 1.5682017 2.1461280 1.4149733 1.9294189 1.0000000 1.7403627
## [64] 1.6020600 0.7781513 1.5797836 2.0969100 1.3979400 2.1461280 1.6020600
```

```

## [71] 1.9542425 1.8450980 1.7781513 1.4771213 1.1760913 1.7781513 2.2121876
## [78] 1.1139434 1.6989700 0.8450980 0.7781513 1.3979400 1.7403627 1.3010300
## [85] 1.3979400 1.3222193 1.6532125 0.8450980 1.0000000 1.1760913 1.3222193
## [92] 1.7634280 1.8388491 1.3010300 1.4771213 1.3010300 1.5682017 1.3979400
## [99] 1.5185139 1.3979400 1.4771213 1.8750613 1.4771213 1.6989700 1.6020600
## [106] 1.1760913 1.6532125 1.6989700 1.7781513 1.3010300 1.9030900 0.9030900
## [113] 1.7781513 1.9294189 1.3010300 2.2430380 1.3222193 0.6989700 0.9030900
## [120] 1.4913617 1.6020600 1.2552725 2.1139434 1.9294189 2.0969100 1.3802112
## [127] 1.6020600 1.3010300 0.0000000 1.1139434 1.8633229 1.3802112 1.3222193
## [134] 1.4771213 1.9030900 1.2787536 1.5440680 1.4771213 1.7160033 1.8750613
## [141] 1.5440680 2.1760913 2.2430380 1.1139434 1.6020600 1.9030900 2.0413927
## [148] 1.3010300 1.6989700 1.5051500 1.3979400 1.5185139 2.3010300 2.0000000
## [155]      -Inf 1.7242759 1.9030900 2.0492180 1.2041200 1.5563025 1.3010300
## [162] 1.1760913 2.1760913 1.4771213 1.5440680 1.0791812 2.0969100 2.3979400
## [169] 2.1760913 1.3979400 1.9190781 0.8450980 1.0413927 1.2552725 1.5440680
## [176] 1.0000000 1.5563025 1.5440680 2.1760913 2.1760913 1.7781513 1.2552725
## [183] 1.1760913 1.6020600 1.9294189      -Inf 1.7403627 1.8750613 1.0000000
## [190] 1.6020600 2.2041200 2.2671717 1.8450980 1.7781513 0.3010300 1.1760913
## [197] 2.2695129 2.3010300 1.9294189 1.5440680 1.8976271      -Inf 1.2041200
## [204] 1.6532125 1.6720979 1.6532125 1.9190781 0.9030900 1.9030900 1.0791812
## [211] 1.4771213 1.8450980 1.8750613 1.0000000 2.0681859 1.5185139 1.6989700
## [218] 2.0000000 1.4771213 1.2787536 1.7634280 1.4149733 1.4771213 1.5440680
## [225] 1.5797836 1.4313638 1.5440680 2.0000000 2.0413927 1.4771213 1.2552725
## [232] 1.0000000 1.3010300 1.4771213 1.3424227 1.6020600 1.8195439 0.6020600
## [239] 1.7403627 1.6989700 1.5440680 1.7781513 1.4771213 1.3979400 1.2304489
## [246] 1.6532125 1.5440680 1.7781513 2.1613680 1.6989700 1.3010300 1.6020600
## [253] 0.8450980 1.3010300 1.7403627 1.6020600 1.3010300 1.2304489 1.4471580
## [260] 1.3979400 1.0000000 1.3010300 1.5440680 2.1139434 1.3222193 1.1760913
## [267] 1.7481880 1.8450980 0.4771213 1.0000000 2.1760913 1.4771213 1.5682017
## [274] 1.9030900 1.6989700 1.3979400 1.4471580 1.3979400 1.7781513 0.6989700
## [281] 1.2552725 1.3010300 1.9294189 1.5440680 1.1760913 1.3010300 1.4771213
## [288]      -Inf 0.6989700 1.0000000 1.4771213 1.6020600 0.0000000 0.4771213
## [295] 0.6989700 1.4149733 1.6020600 1.4149733 1.1760913 1.9777236 1.4149733
## [302] 1.3802112 1.6989700 2.3979400 2.4771213 0.4771213 1.1760913 1.6020600
## [309] 1.3010300 1.7781513 2.3010300 1.2552725 1.5440680 1.5797836 2.3617278
## [316] 1.0791812 1.6989700 1.0791812 1.6812412 2.0413927 1.7634280 1.6232493
## [323] 0.6020600 1.2041200 1.5051500 1.7781513 1.9684829 2.3010300 1.4471580
## [330] 2.1461280 2.0413927 1.4771213 1.0000000 1.0413927 1.7781513 1.6020600
## [337] 1.6020600 0.4771213 1.7403627 1.7634280 2.0000000 1.2787536 0.8450980
## [344] 1.3979400 1.3010300 1.9542425 2.0969100 1.5910646 1.7853298 0.9030900
## [351] 1.9030900 1.0000000 0.8450980 1.1760913 1.5440680 1.1139434      -Inf
## [358] 1.2552725 1.5051500 2.0791812 2.4116197 1.4313638 2.1461280 1.8450980
## [365] 1.8129134 1.2552725 1.4771213 1.3424227 1.3979400 1.6989700 1.3010300
## [372] 1.9138139 0.6989700 1.6989700 1.3010300 1.8129134 1.9030900 1.3010300
## [379] 1.3979400 0.6989700 1.3979400 1.5051500 1.4623980 2.3010300 2.0000000
## [386] 1.7075702 2.1139434 1.2041200 1.5440680 1.3010300 1.3222193 1.6127839
## [393] 1.9030900 1.6020600 2.0413927 1.4771213 1.1139434 1.8450980 1.6532125
## [400] 1.7160033 2.3010300 2.1903317 1.1760913 1.3979400 1.3010300 1.2552725
## [407] 2.2671717 2.0000000 1.3010300 1.3010300 1.8450980 1.1461280 1.3979400
## [414] 1.9138139 1.0791812 1.3979400 1.6020600 1.7403627 1.3424227 1.9542425
## [421] 2.2552725 2.0791812 1.5440680 1.9030900 1.6812412 1.4771213 0.6989700
## [428] 1.7781513 1.3979400 1.1760913 1.3979400 1.1760913 1.1139434 2.1398791
## [435] 1.3424227 1.6989700 1.2787536 1.1139434 1.0000000 1.6020600 0.6020600
## [442] 1.9030900 1.3010300 2.1760913 0.3010300 1.3010300 1.6020600 1.4771213

```

```
## [449] 1.3979400 1.7923917 1.8129134 1.6020600 1.3979400 1.2552725 2.1613680
## [456] 1.6532125 1.3010300 1.6020600 2.0000000 1.7708520 1.6020600 1.6020600
## [463] 1.5682017 1.3979400 1.2041200 1.3979400 1.6532125 1.0413927 1.8750613
## [470] 1.3979400 1.7781513 1.1760913 2.1760913 0.7781513 -Inf 0.9542425
## [477] 1.2787536 2.0000000 1.5797836 1.8750613 1.5910646 2.0000000 1.5051500
## [484] 1.8325089 1.6989700 1.5797836 1.2041200 -Inf 0.6020600 2.1760913
## [491] 1.2041200 1.5440680 1.3979400 2.1760913 1.3222193 1.5440680 1.6812412
## [498] 1.8750613 1.3424227 2.1760913 2.2900346 2.3222193 1.4771213 1.5440680
## [505] 2.2304489 1.9542425 1.5797836 1.5682017 2.0413927 1.3010300 1.0000000
## [512] 1.1760913 0.3010300 1.5440680 1.4771213 1.9777236 1.5440680 1.3979400
## [519] 1.2787536 1.7160033 1.8750613 1.3010300 1.0000000 1.6020600 1.2041200
## [526] 1.4149733 0.6989700 0.3010300 1.5440680 1.8450980 1.8750613 1.8195439
## [533] 1.3979400 2.1139434 1.5797836 1.6989700 1.3222193 1.5440680 1.5440680
## [540] 1.3010300 1.1760913 -Inf 2.0000000 1.1760913 1.5440680 1.3010300
## [547] 1.9542425 0.3010300 2.1760913 2.2041200 1.7781513 1.8450980 1.9030900
## [554] 1.3010300 1.9030900 1.3424227 1.6989700 1.2552725 1.3802112 1.8129134
## [561] 1.3802112 1.9030900
```

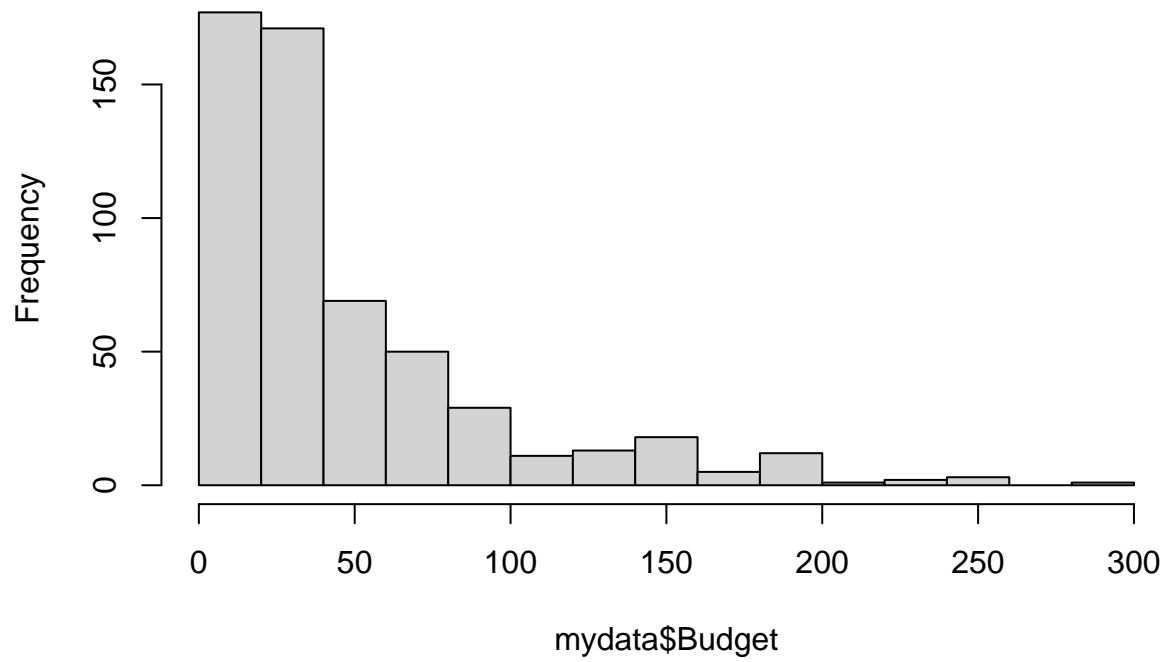
```
log_Budget <- log10(mydata$Audience.Ratings)
log_Budget
```

```
## [1] 1.908485 1.643453 1.716003 1.924279 1.845098 1.799341 1.851258 1.755875
## [9] 1.681241 1.968483 1.707570 1.949390 1.602060 1.806180 1.851258 1.662758
## [17] 1.924279 1.748188 1.633468 1.857332 1.568202 1.662758 1.544068 1.806180
## [25] 1.544068 1.939519 1.892095 1.819544 1.491362 1.740363 1.531479 1.690196
## [33] 1.838849 1.963788 1.869232 1.770852 1.505150 1.579784 1.778151 1.518514
## [41] 1.698970 1.755875 1.698970 1.799341 1.903090 1.716003 1.748188 1.934498
## [49] 1.819544 1.812913 1.748188 1.886491 1.672098 1.792392 1.681241 1.799341
## [57] 1.819544 1.806180 1.875061 1.623249 1.633468 1.785330 1.924279 1.698970
## [65] 1.886491 1.681241 1.681241 1.826075 1.748188 1.740363 1.531479 1.724276
## [73] 1.799341 1.653213 1.748188 1.672098 1.698970 1.732394 1.908485 1.707570
## [81] 1.799341 1.544068 1.763428 1.698970 1.819544 1.681241 1.838849 1.857332
## [89] 1.653213 1.690196 1.799341 1.491362 1.672098 1.447158 1.908485 1.875061
## [97] 1.908485 1.568202 1.672098 1.875061 1.785330 1.643453 1.447158 1.579784
## [105] 1.690196 1.897627 1.579784 1.748188 1.579784 1.447158 1.857332 1.875061
## [113] 1.662758 1.903090 1.579784 1.748188 1.740363 1.724276 1.568202 1.740363
## [121] 1.792392 1.633468 1.740363 1.880814 1.919078 1.698970 1.748188 1.716003
## [129] 1.707570 1.770852 1.724276 1.851258 1.863323 1.875061 1.716003 1.716003
## [137] 1.832509 1.832509 1.755875 1.763428 1.556303 1.698970 1.792392 1.633468
## [145] 1.799341 1.863323 1.748188 1.778151 1.672098 1.748188 1.785330 1.954243
## [153] 1.681241 1.778151 1.602060 1.934498 1.770852 1.491362 1.929419 1.643453
## [161] 1.806180 1.653213 1.826075 1.826075 1.819544 1.812913 1.939519 1.875061
## [169] 1.913814 1.778151 1.845098 1.832509 1.880814 1.785330 1.857332 1.653213
## [177] 1.755875 1.755875 1.924279 1.838849 1.755875 1.579784 1.755875 1.857332
## [185] 1.863323 1.579784 1.643453 1.770852 1.857332 1.740363 1.968483 1.770852
## [193] 1.939519 1.707570 1.812913 1.954243 1.959041 1.903090 1.799341 1.924279
## [201] 1.770852 1.886491 1.568202 1.740363 1.380211 1.740363 1.698970 1.949390
## [209] 1.799341 1.763428 1.919078 1.681241 1.653213 1.414973 1.716003 1.919078
## [217] 1.698970 1.579784 1.662758 1.690196 1.612784 1.556303 1.792392 1.740363
## [225] 1.792392 1.863323 1.681241 1.602060 1.934498 1.740363 1.602060 1.518514
## [233] 1.819544 1.851258 1.707570 1.785330 1.880814 1.863323 1.886491 1.662758
## [241] 1.556303 1.623249 1.491362 1.857332 1.924279 1.832509 1.690196 1.845098
## [249] 1.934498 1.949390 1.698970 1.732394 1.785330 1.875061 1.732394 1.845098
## [257] 1.707570 1.633468 1.863323 1.462398 1.924279 1.785330 1.732394 1.857332
```

```
## [265] 1.568202 1.845098 1.681241 1.770852 1.431364 1.826075 1.778151 1.748188
## [273] 1.698970 1.602060 1.755875 1.924279 1.806180 1.755875 1.748188 1.819544
## [281] 1.602060 1.698970 1.869232 1.690196 1.732394 1.556303 1.812913 1.690196
## [289] 1.897627 1.672098 1.913814 1.690196 1.748188 -Inf 1.763428 1.612784
## [297] 1.845098 1.698970 1.869232 1.755875 1.869232 1.653213 1.857332 1.785330
## [305] 1.869232 1.792392 1.491362 1.716003 1.740363 1.568202 1.851258 1.662758
## [313] 1.672098 1.672098 1.792392 1.662758 1.698970 1.785330 1.845098 1.908485
## [321] 1.857332 1.612784 1.770852 1.845098 1.633468 1.724276 1.939519 1.770852
## [329] 1.875061 1.832509 1.792392 1.591065 1.845098 1.826075 1.919078 1.755875
## [337] 1.505150 1.612784 1.886491 1.908485 1.690196 1.785330 1.903090 1.397940
## [345] 1.778151 1.908485 1.897627 1.819544 1.913814 1.602060 1.863323 1.278754
## [353] 1.612784 1.672098 -Inf 1.579784 1.623249 1.897627 1.908485 1.785330
## [361] 1.732394 1.602060 1.959041 1.934498 1.832509 1.908485 1.826075 1.301030
## [369] 1.431364 1.447158 1.792392 1.681241 1.770852 1.892095 1.939519 1.556303
## [377] 1.623249 1.643453 1.662758 1.929419 1.919078 1.755875 1.681241 1.806180
## [385] 1.851258 1.826075 1.892095 1.959041 1.672098 1.869232 1.755875 1.792392
## [393] 1.832509 1.612784 1.959041 1.431364 1.924279 1.812913 1.908485 1.724276
## [401] 1.892095 1.799341 1.740363 1.812913 1.732394 1.897627 1.982271 1.531479
## [409] 1.845098 1.944483 1.491362 1.832509 1.633468 1.763428 1.707570 1.944483
## [417] 1.716003 1.812913 1.875061 1.949390 1.740363 1.672098 1.939519 1.763428
## [425] 1.462398 1.707570 1.342423 1.612784 1.959041 1.698970 1.732394 1.919078
## [433] 1.880814 1.875061 1.623249 1.591065 1.672098 1.732394 1.672098 1.875061
## [441] 1.857332 1.892095 1.929419 1.623249 1.505150 1.819544 1.913814 1.591065
## [449] 1.740363 1.579784 1.755875 1.716003 1.633468 1.806180 1.602060 1.939519
## [457] 1.716003 1.812913 1.755875 1.672098 1.869232 1.724276 1.633468 1.812913
## [465] 1.462398 1.505150 1.681241 1.892095 1.892095 1.633468 1.770852 1.785330
## [473] 1.755875 1.462398 1.662758 1.681241 1.643453 1.778151 1.716003 1.681241
## [481] 1.812913 1.643453 1.785330 1.869232 1.892095 1.832509 1.591065 1.716003
## [489] 1.919078 1.579784 1.612784 1.531479 1.924279 1.903090 1.832509 1.799341
## [497] 1.662758 1.785330 1.819544 1.949390 1.826075 1.880814 1.763428 1.380211
## [505] 1.826075 1.838849 1.934498 1.913814 1.832509 1.556303 1.556303 1.672098
## [513] 1.568202 1.832509 1.755875 1.863323 1.748188 1.880814 1.662758 1.732394
## [521] 1.819544 1.505150 1.792392 1.785330 1.863323 1.623249 1.724276 1.826075
## [529] 1.740363 1.633468 1.857332 1.863323 1.968483 1.832509 1.857332 1.897627
## [537] 1.799341 1.806180 1.857332 1.698970 1.799341 1.643453 1.770852 1.863323
## [545] 1.447158 1.826075 1.857332 1.863323 1.857332 1.944483 1.491362 1.857332
## [553] 1.556303 1.653213 1.698970 1.544068 1.556303 1.716003 1.845098 1.863323
## [561] 1.939519 1.623249
```

```
# Plot at least one quantitative variable, and one scatterplot
hist(mydata$Budget)
```

Histogram of mydata\$Budget



```
plot(mydata$Rotten.Tomatoes.Ratings, mydata$Audience.Ratings)
```

