

Exploatory Analysis of Trending YouTube Videos in the US

In this project, we will discover what categories affect the viewership of the most trending YouTube videos in the US. What we can gain from analyzing these categories would be that we can improve recommending different types of videos to other people based on the majority opinion of what genres of videos are perceived as worthwhile to watch.

```
In [2]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import scipy.stats as stats
#Storing the csv files of the trending youtube videos from the US as a variable
USvideos_data = pd.read_csv("USvideos.csv")
USvideos_data
```

Out[2]:

| | video_id | trending_date | title | channel_title | category_id | publi |
|----|-------------|---------------|---|-----------------------|-------------|-----------|
| 0 | 2kyS6SvSYSE | 17.14.11 | WE WANT TO TALK ABOUT OUR MARRIAGE | CaseyNeistat | 22 | 13T17:13: |
| 1 | 1ZAPwfrtAFY | 17.14.11 | The Trump Presidency: Last Week Tonight with J... | LastWeekTonight | 24 | 13T07:30: |
| 2 | 5qpjK5DgCt4 | 17.14.11 | Racist Superman Rudy Mancuso, King Bach & Le... | Rudy Mancuso | 23 | 12T19:05: |
| 3 | puqaWrEC7tY | 17.14.11 | Nickelback Lyrics: Real or Fake? | Good Mythical Morning | 24 | 13T11:00: |
| 4 | d380meD0W0M | 17.14.11 | I Dare You: GOING BALD!? | nigahiga | 24 | 12T18:01: |
| 5 | gHZ1Qz0KiKM | 17.14.11 | 2 Weeks with iPhone X | iJustine | 28 | 13T19:07: |
| 6 | 39idVpFF7NQ | 17.14.11 | Roy Moore & Jeff Sessions Cold Open - SNL | Saturday Night Live | 24 | 12T05:37: |
| 7 | nc99ccSXST0 | 17.14.11 | 5 Ice Cream Gadgets put to the Test | CrazyRussianHacker | 28 | 12T21:50: |
| 8 | jr9QtXwC9vc | 17.14.11 | The Greatest Showman Official Trailer 2 [HD]... | 20th Century Fox | 1 | 13T14:00: |
| 9 | TUmyygCMMGA | 17.14.11 | Why the rise of the robots won't mean the end ... | Vox | 25 | 13T13:45: |
| 10 | 9wRQljFNDW8 | 17.14.11 | Dion Lewis' 103-Yd Kick Return TD vs. Denver! ... | NFL | 17 | 13T02:05: |
| 11 | VifQIJit6A0 | 17.14.11 | (SPOILERS) 'Shiva Saves the Day' Talked About ... | amc | 24 | 13T03:00: |
| 12 | 5E4ZBSInqUU | 17.14.11 | Marshmello - Blocks (Official Music Video) | marshmello | 10 | 13T17:00: |
| 13 | GgVmn66oK_A | 17.14.11 | Which Countries Are About To Collapse? | NowThis World | 25 | 12T14:00: |

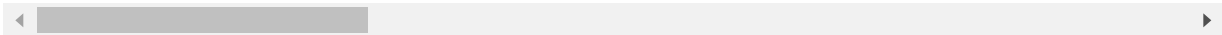
| | video_id | trending_date | title | channel_title | category_id | publi |
|----|-------------|---------------|--|--------------------------------------|-------------|-----------|
| 14 | TaTleo4cOs8 | 17.14.11 | SHOPPING FOR NEW FISH!!! | The king of DIY | 15 | 12T18:30: |
| 15 | kgaO45SyaO4 | 17.14.11 | The New SpotMini | BostonDynamics | 28 | 13T20:09: |
| 16 | ZAQs-ctOqXQ | 17.14.11 | One Change That Would Make Pacific Rim a Classic | Cracked | 23 | 12T17:00: |
| 17 | YVfyYrEmzgM | 17.14.11 | How does your body know you're full? - Hilary ... | TED-Ed | 27 | 13T16:00: |
| 18 | eNSN6qet1kE | 17.14.11 | HomeMade Electric Airplane | PeterSripol | 28 | 13T15:30: |
| 19 | B5HORANmzHw | 17.14.11 | Founding An Inbreeding-Free Space Colony | SciShow | 27 | 12T22:00: |
| 20 | vU14JY3x81A | 17.14.11 | How Can You Control Your Dreams? | Life Noggin | 27 | 13T14:00: |
| 21 | 6VhU_T463sU | 17.14.11 | The Making of Hela's Headdress from Thor: Ragn... | Tested | 28 | 12T15:00: |
| 22 | _-aDHxoblR4 | 17.14.11 | Is It Dangerous To Talk To A Camera While Driv... | Tom Scott | 27 | 13T16:00: |
| 23 | JBZTZZAcFTw | 17.14.11 | What \$4,800 Will Get You In NYC Sweet Digs H... | Refinery29 | 26 | 12T16:00: |
| 24 | IZ68j2J_GOM | 17.14.11 | Using Other People's Showers | Gus Johnson | 23 | 13T14:44: |
| 25 | dRpNZV18N_g | 17.14.11 | SPAGHETTI BURRITO VS SPAGHETTI BURRITO | HellthyJunkFood | 24 | 12T14:00: |
| 26 | fcVjitaM3LY | 17.14.11 | 78557 and Proth Primes - Numberphile | Numberphile | 28 | 13T12:13: |
| 27 | qeWvgZLz9yU | 17.14.11 | A Smart... MUG?! - Take apart a Heated Thermos! | JerryRigEverything | 26 | 13T16:00: |
| 28 | ilxy3JN3-jc | 17.14.11 | LeBron James admits he was ripping Phil Jackso... | Cleveland Cavaliers on cleveland.com | 25 | 13T15:42: |

| | video_id | trending_date | title | channel_title | category_id | publi: |
|-------|-------------|---------------|---|--|-------------|------------|
| 29 | n30k5CwLhS4 | 17.14.11 | Nick Andopolis: Drummer | FaeryInLoveInc | 1 | 29T17:03:2 |
| ... | ... | ... | ... | ... | ... | ... |
| 40919 | vDyYMcf500 | 18.14.06 | The History of Fortnite Battle Royale - Did Yo... | DidYouKnowGaming? | 20 | 24T19:00:2 |
| 40920 | 3Q2j5ApzSqs | 18.14.06 | Christina Aguilera - Fall In Line (Official Vi... | CAguileraVEVO | 10 | 23T17:00:2 |
| 40921 | GfxNGjfSKRY | 18.14.06 | James Bay - Delicate (Taylor Swift cover) in t... | BBCRadio1VEVO | 10 | 24T17:00:2 |
| 40922 | amtC28yfYCM | 18.14.06 | Mindy Kaling Is Mad She Wasn't Invited to the ... | The Tonight Show Starring Jimmy Fallon | 23 | 24T08:00:2 |
| 40923 | 9NC2saE5MbQ | 18.14.06 | Camels vs. Cactus!!! جمل | camelsandfriends | 15 | 23T13:33:2 |
| 40924 | XdNOI-q70q4 | 18.14.06 | GIANT Bowl of Lucky Charms CHALLENGE (5,000+ C... | Matt Stonie | 24 | 23T00:15:2 |
| 40925 | QgOXIEhHU1Y | 18.14.06 | Diplo, French Montana & Lil Pump ft. Zhavia - ... | Diplo | 10 | 21T14:12:2 |
| 40926 | SQsPvrev_bQ | 18.14.06 | 435 | Tyler, The Creator | 27 | 22T15:20:2 |
| 40927 | _1LdMWINYS4 | 18.14.06 | That Time It Rained for Two Million Years | PBS Eons | 28 | 22T21:00:2 |
| 40928 | AFbu21AGSho | 18.14.06 | Watch a Hercules Beetle Metamorphose Before Yo... | Nat Geo WILD | 15 | 22T12:00:2 |
| 40929 | hHaUQh6Gx-Q | 18.14.06 | Mustard, Nick Jonas - Anywhere | MustardVEVO | 10 | 22T12:00:2 |
| 40930 | wl89nVn6LHk | 18.14.06 | Maddie Poppe Wins American Idol 2018 - Finale ... | American Idol | 24 | 22T04:08:2 |
| 40931 | oLDbo545aKQ | 18.14.06 | Terrible Magicians Rudy Mancuso & Juanpa Zurita | Rudy Mancuso | 10 | 21T21:00:2 |

| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|---------------------------|-------------|----------------|
| 40932 | tiF9SzzzX_o | 18.14.06 | The Voice 2018 Brynn Cartelli - Finale: Skyfall | The Voice | 24 | 22T02:34: 2 |
| 40933 | Gs26bZTRkdU | 18.14.06 | 8 Survival Myths That Will Definitely Make Thi... | SciShow | 27 | 20T21:00: 2 |
| 40934 | Qcj15vHJTtk | 18.14.06 | Royal Wedding - SNL | Saturday Night Live | 24 | 20T04:58: 2 |
| 40935 | 2in8XqiElwc | 18.14.06 | Nicki Minaj - Chun-Li (Live on SNL / 2018) | NickiMinajAtVEVO | 10 | 20T07:53: 2 |
| 40936 | Xr2rgT9uEnA | 18.14.06 | LIE DETECTOR TEST WITH MY GIRLFRIEND! | miniminter | 20 | 20T18:00: 2 |
| 40937 | v7H_Or9Nr5I | 18.14.06 | Lucas the Spider - Giant Spider | Lucas the Spider | 1 | 19T14:52: 2 |
| 40938 | n_W54baizX8 | 18.14.06 | Daddy Yankee - Hielo (Video Oficial) | Daddy Yankee | 10 | 18T14:00: 2 |
| 40939 | pcJo0tlWybY | 18.14.06 | SZA - Garden (Say It Like Dat) (Official Video) | SZAVEVO | 10 | 18T14:00: 2 |
| 40940 | _QWZvU7VCn8 | 18.14.06 | Brad Pitt Bid \$120k For A Night With Emilia Cl... | The Graham Norton Show | 24 | 18T17:13: 2 |
| 40941 | 7UoP9ABJXGE | 18.14.06 | Dan + Shay - Speechless (Wedding Video) | Dan And Shay | 10 | 18T04:04: 2 |
| 40942 | ju_inUnrLc4 | 18.14.06 | Fifth Harmony - Don't Say You Love Me | FifthHarmonyVEVO | 10 | 18T07:00: 2 |
| 40943 | 1PhPYr_9zRY | 18.14.06 | BTS Plays With Puppies While Answering Fan Que... | BuzzFeed Celeb | 22 | 18T16:39: 2 |
| 40944 | BZt0qjTWNhw | 18.14.06 | The Cat Who Caught the Laser | AaronsAnimals | 15 | 18T13:00: 2 |
| 40945 | 1h7KV2sjUWY | 18.14.06 | True Facts : Ant Mutualism | zefrank1 | 22 | 18T01:00: 2 |

| | video_id | trending_date | title | channel_title | category_id | publi: |
|-------|-------------|---------------|---|-----------------------------|-------------|------------------------|
| 40946 | D6Oy4LfoqsU | 18.14.06 | I GAVE SAFIYA NYGAARD A PERFECT HAIR MAKEOVER ... | Brad Mondo | 24 | 18T17:34: ² |
| 40947 | oV0zkMe1K8s | 18.14.06 | How Black Panther Should Have Ended | How It Should Have Ended | 1 | 17T17:00: ² |
| 40948 | ooyjaVdt-jA | 18.14.06 | Official Call of Duty®: Black Ops 4 — Multipla... | Call of Duty | 20 | 17T17:09: ² |

40949 rows × 16 columns



```
In [3]: Videos_In_US = USvideos_data.drop_duplicates(subset = "title", keep = "first")
```

```
In [4]: #Organizing the most trending US Videos by views  
Videos_In_US.sort_values(by = "views", ascending = False)
```


Out[4]:

| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|-----------------------------|-------------|----------|
| 23824 | #NAME? | 18.15.03 | Maluma - El Préstamo (Official Video) | MalumaVEVO | 10 | 09T11:00 |
| 35550 | 7C2z4GqqS5E | 18.19.05 | BTS (방탄소년단) 'FAKE LOVE' Official MV | ibighit | 10 | 18T09:00 |
| 28605 | i0p1bmr0EmE | 18.14.04 | TWICE What is Love? M/V | jypentertainment | 10 | 09T08:59 |
| 3200 | 6ZfuNTqbHE8 | 17.30.11 | Marvel Studios' Avengers: Infinity War Official... | Marvel Entertainment | 24 | 29T13:26 |
| 70 | 2Vv-BfVoq4g | 17.14.11 | Ed Sheeran - Perfect (Official Music Video) | Ed Sheeran | 10 | 09T11:04 |
| 33351 | VYOjWnS4cMY | 18.08.05 | Childish Gambino - This Is America (Official V... | ChildishGambinoVEVO | 10 | 06T04:00 |
| 30750 | u9Mv98Gr5pY | 18.25.04 | VENOM - Official Trailer (HD) | Sony Pictures Entertainment | 24 | 24T03:45 |
| 4600 | FlsCjmMhFmw | 17.07.12 | YouTube Rewind: The Shape of 2017 #YouTubeRe... | YouTube Spotlight | 24 | 06T17:58 |
| 28624 | U9BwWKXjVal | 18.14.04 | Drake - Nice For What | DrakeVEVO | 10 | 07T02:46 |
| 38161 | 1J76wN0TPI4 | 18.01.06 | Sanju Official Trailer Ranbir Kapoor Raj... | FoxStarHindi | 24 | 30T07:51 |
| 40340 | MAjY8mCTXWk | 18.11.06 | 周杰倫 Jay Chou 【不愛我就拉倒】 If You Don't Love Me, It's... | 杰威爾音樂 JVR Music | 10 | 14T15:59 |
| 16181 | BhIEIO0vaBE | 18.05.02 | To Our Daughter | Kylie Jenner | 22 | 04T20:27 |
| 6145 | 9v_rtaye2yY | 17.14.12 | Migos, Nicki Minaj, Cardi B - MotorSport (Offi... | MigosVEVO | 10 | 08T02:12 |
| 24156 | QwievZ1Tx-8 | 18.17.03 | Marvel Studios' Avengers: Infinity War - Offic... | Marvel Entertainment | 24 | 16T13:02 |

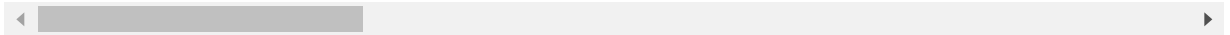
| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|---------------------------|-------------|----------|
| 30752 | rRr1qiJR5Xk | 18.25.04 | Sanju Official Teaser Ranbir Kapoor Rajk... | FoxStarHindi | 24 | 24T07:58 |
| 5832 | rRzxEiBLQCA | 17.13.12 | TWICE Heart Shaker M/V | jypentertainment | 10 | 11T08:59 |
| 5001 | vn9mMeWcgoM | 17.09.12 | Jurassic World: Fallen Kingdom - Official Trai... | Universal Pictures | 24 | 08T01:44 |
| 32 | n1WpP7iowLc | 17.14.11 | Eminem - Walk On Water (Audio) ft. Beyoncé | EminemVEVO | 10 | 10T17:00 |
| 39149 | J2HytHu5VBI | 18.06.06 | we broke up | David Dobrik | 22 | 05T04:54 |
| 29951 | ffxKSjUwKdU | 18.21.04 | Ariana Grande - No Tears Left To Cry | ArianaGrandeVevo | 10 | 20T04:00 |
| 35349 | yDiXQI7grPQ | 18.18.05 | Do You Hear Yanny or Laurel? (SOLVED with SCIE... | AsapSCIENCE | 28 | 16T18:16 |
| 23362 | tCXGJQYZ9JA | 18.13.03 | Taylor Swift - Delicate | TaylorSwiftVEVO | 10 | 12T01:15 |
| 23797 | sS0LCjOilhc | 18.15.03 | GOT7 Look M/V | jypentertainment | 10 | 12T09:00 |
| 19376 | V5cOvyDpWfM | 18.21.02 | Fergie Performs The U.S. National Anthem / 201... | MLG Highlights | 17 | 19T01:37 |
| 11600 | dfnCAmr569k | 18.13.01 | Taylor Swift - End Game ft. Ed Sheeran, Future | TaylorSwiftVEVO | 10 | 12T05:00 |
| 2201 | kTlv5_Bs8aw | 17.25.11 | BTS (방탄소년단) 'MIC Drop (Steve Aoki Remix)' Offi... | ibighit | 10 | 24T09:00 |
| 16825 | _5d-sQ7Fh5M | 18.08.02 | LOGAN PAUL IS BACK! | Logan Paul Vlogs | 24 | 04T22:02 |
| 10000 | QwZT7T-TXT0 | 18.03.01 | So Sorry. | Logan Paul Vlogs | 24 | 02T16:42 |
| 31297 | JqfuKsoEEms | 18.27.04 | Hotel Artemis Official Trailer [HD] Global... | Global Road Entertainment | 24 | 16T12:59 |
| 28598 | hYirFqEc8Tg | 18.14.04 | Crossbow Trick Shots Dude Perfect | Dude Perfect | 17 | 09T21:55 |
| ... | ... | ... | ... | ... | ... | ... |

| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|----------------------------|-------------|----------|
| 5490 | r3d2alzgjKc | 17.11.12 | exixe clock in action | dekuNukem | 28 | 04T14:43 |
| 6493 | P4VipvC54W4 | 17.16.12 | coin cell challenge | Michael Rigsby | 22 | 06T00:56 |
| 6587 | OmM425PFd3Y | 17.16.12 | How Noah Galvin Makes Evan Hansen His Own | BUILD Series | 24 | 12T22:51 |
| 935 | 7xhxjcejONk | 17.18.11 | Star Wars & littleBits Droid Inventor Kit: Mov... | littleBits Electronics | 28 | 15T16:18 |
| 6822 | plnzNgtvvJo | 17.18.12 | You'll Shoot Your Eye Out Performance A CHRI... | FOX | 24 | 18T04:03 |
| 3354 | 0devsSCkYRY | 17.30.11 | The Algorithm That Will Keep You Buying On Cyb... | NBC News | 25 | 27T14:39 |
| 536 | KLZI_sxSN_g | 17.16.11 | WWSB Channel 7: Sarasota Police stepping up ... | Sarasota Police Department | 25 | 08T19:23 |
| 3929 | BGtsTNCMrQI | 17.03.12 | Test footage of my raspberry pi camera in the ... | Facelesstech | 20 | 25T19:26 |
| 4718 | I_puTos3yVs | 17.07.12 | After the Show Show: National Cookie Day | Fox News | 25 | 04T15:59 |
| 15886 | 3rhw4KgcvFM | 18.03.02 | First Responders Arrive To The Collapsed Floor... | 9-1-1 on FOX | 24 | 01T02:00 |
| 14735 | mWaY32HWjKE | 18.28.01 | QB Luke Falk: Need to show you're a fearless p... | Cleveland Browns | 17 | 24T18:00 |
| 18843 | ICT0OaVqIQE | 18.18.02 | Jeffrey Tambor Fired From 'Transparent' Follow... | CBS Los Angeles | 25 | 16T02:26 |
| 541 | QKwgif8OW1w | 17.16.11 | Vostok Brompton Beach Ride | Vostok.bike | 19 | 21T15:12 |
| 4933 | GF_0i9WxA_s | 17.08.12 | Obama Answers Akkai Padmashali (Transgender Ac... | taalk com | 26 | 04T10:46 |

| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|---|-------------|----------|
| 1917 | 2a52cBN9qOA | 17.23.11 | Additional Remains Of Miami Gardens Soldier Re... | CBS Miami | 25 | 21T17:26 |
| 6344 | B7B6x2bHcUs | 17.15.12 | Get to know Doug Jones, Alabama's newest Senator | Newsy | 25 | 13T03:58 |
| 10704 | Wwyaow1wWg | 18.06.01 | Inventing The Wheel | J Gasser | 24 | 08T22:27 |
| 13145 | jiP82WVx6mM | 18.20.01 | The author of the 5:2 diet explains why eating... | Business Insider UK | 28 | 17T14:23 |
| 42 | NZFhMSgbKKM | 17.14.11 | Dennis Smith Jr. and LeBron James go back and ... | Ben Rohrbach | 17 | 13T15:11 |
| 10902 | s_FAjI51LPU | 18.07.01 | Gas Mask Scene Kong: Skull Island (2017) | Adam Whitley | 1 | 14T20:33 |
| 1114 | g3VgrgV3kFk | 17.19.11 | John Thrasher: Jimbo's here forever | Single Shot | 17 | 16T22:50 |
| 11710 | TKMXw1YI5S4 | 18.13.01 | UR EEOC Complainants Press Conference (5pm Jan... | University of Rochester EEOC Complainants | 22 | 11T22:55 |
| 12961 | tKX8nUCSBjM | 18.19.01 | Bannon Arrives to Testify on Capitol Hill | Associated Press | 25 | 16T15:16 |
| 14816 | S_HixQBivH0 | 18.29.01 | John Legend And Tony Bennett Sing 'New York, N... | CBS | 24 | 29T02:33 |
| 11103 | JNv4w6DFoYs | 18.08.01 | OjO Commuter Scooter®- Light Electric Vehicle ... | OjO Commuter Scooter by OjO Electric | 19 | 10T19:18 |
| 160 | qg0GdM60syl | 17.14.11 | Huffy Metaloid Bicycle Commercial 1997 | 90s Commercials | 27 | 31T21:46 |
| 12716 | zeQaJGkFyqQ | 18.18.01 | Raw: 3 South Carolina Deputies, 1 Officer Shot | Associated Press | 25 | 16T12:16 |

| | video_id | trending_date | title | channel_title | category_id | publi |
|-------|-------------|---------------|---|------------------|-------------|----------|
| 546 | #NAME? | 17.16.11 | Coach Taggart Monday Presser Ahead of Arizona | GoDucksdotcom | 17 | 13T20:41 |
| 14531 | dQMZLXaa1L8 | 18.27.01 | Artwork Forge | Palo Alto Online | 17 | 10T23:53 |
| 14335 | y6KYFcta4SE | 18.26.01 | 1 dead, others injured after Ky. school shooting | Newsy | 25 | 23T15:30 |

6455 rows × 16 columns



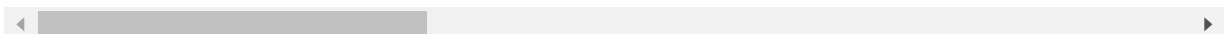
We are now going to analyze the top 10 most viewed YouTube Videos in the US and we're going to see what common group(s) of genres have put these videos in a very high percentile in terms of viewership.

```
In [5]: #Top 10 Most Watched Videos from the 2017-2018 Period
Videos_In_US_Top_10 = Videos_In_US.nlargest(10, "views")
```

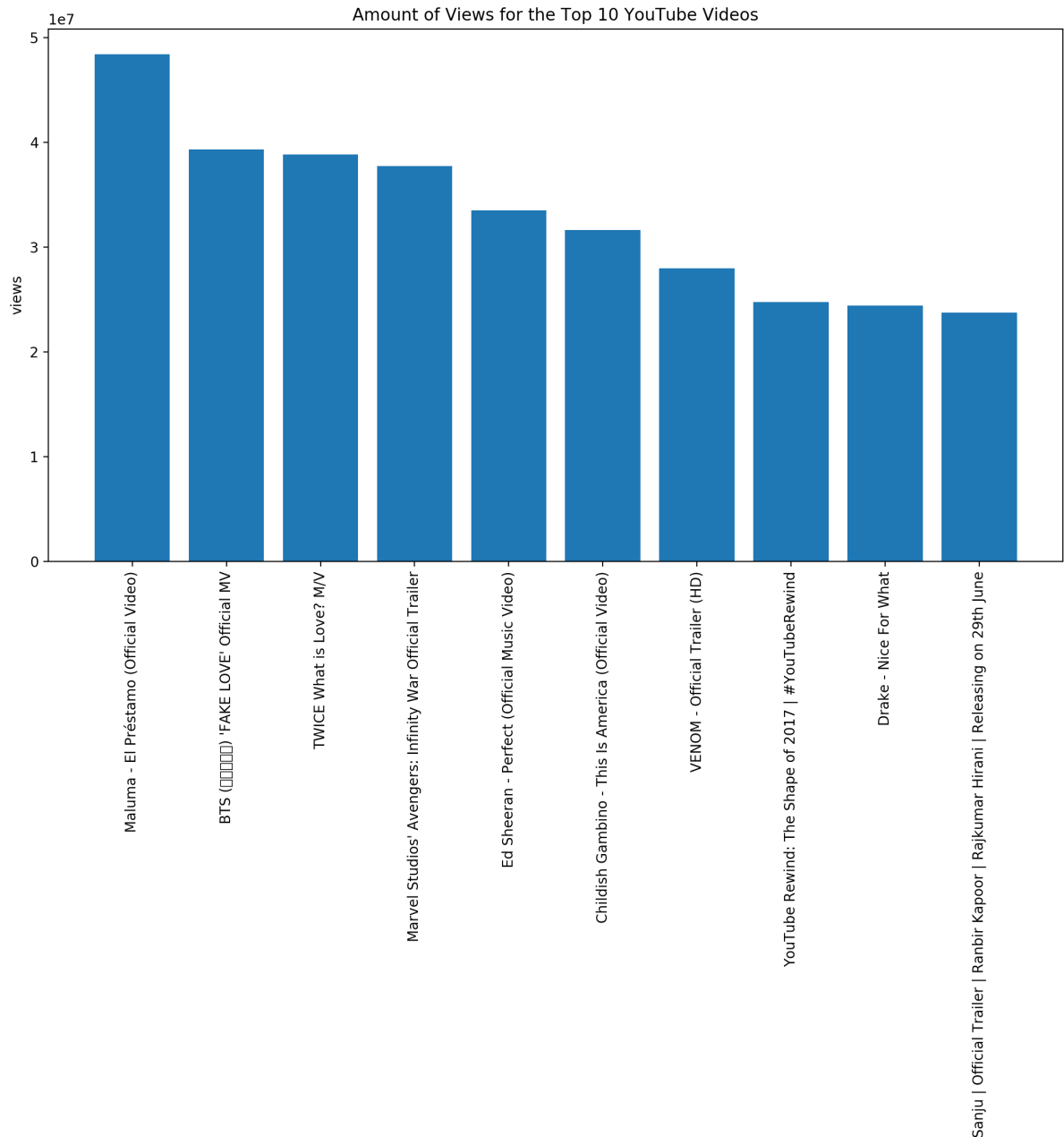
```
In [6]: Videos_In_US_Top_10.head()
```

```
Out[6]:
```

| | video_id | trending_date | title | channel_title | category_id | publish_time |
|-------|-------------|---------------|--|-------------------------|-------------|------------------------------|
| 23824 | #NAME? | 18.15.03 | Maluma - EI Préstamo (Official Video) | MalumaVEVO | 10 | 2018-03- 09T11:00:01.000Z |
| 35550 | 7C2z4GqqS5E | 18.19.05 | BTS (방 탄소년단) 'FAKE LOVE' Official MV | ibighit | 10 | 2018-05- 18T09:00:02.000Z |
| 28605 | i0p1bmr0EmE | 18.14.04 | TWICE What is Love? M/V | jypentertainment | 10 | 2018-04- 09T08:59:51.000Z |
| 3200 | 6ZfuNTqbHE8 | 17.30.11 | Marvel Studios' Avengers: Infinity War Officia... | Marvel Entertainment | 24 | 2017-11- 29T13:26:24.000Z |
| 70 | 2Vv-BfVoq4g | 17.14.11 | Ed Sheeran - Perfect (Official Music Video) | Ed Sheeran | 10 | 2017-11- 09T11:04:14.000Z |



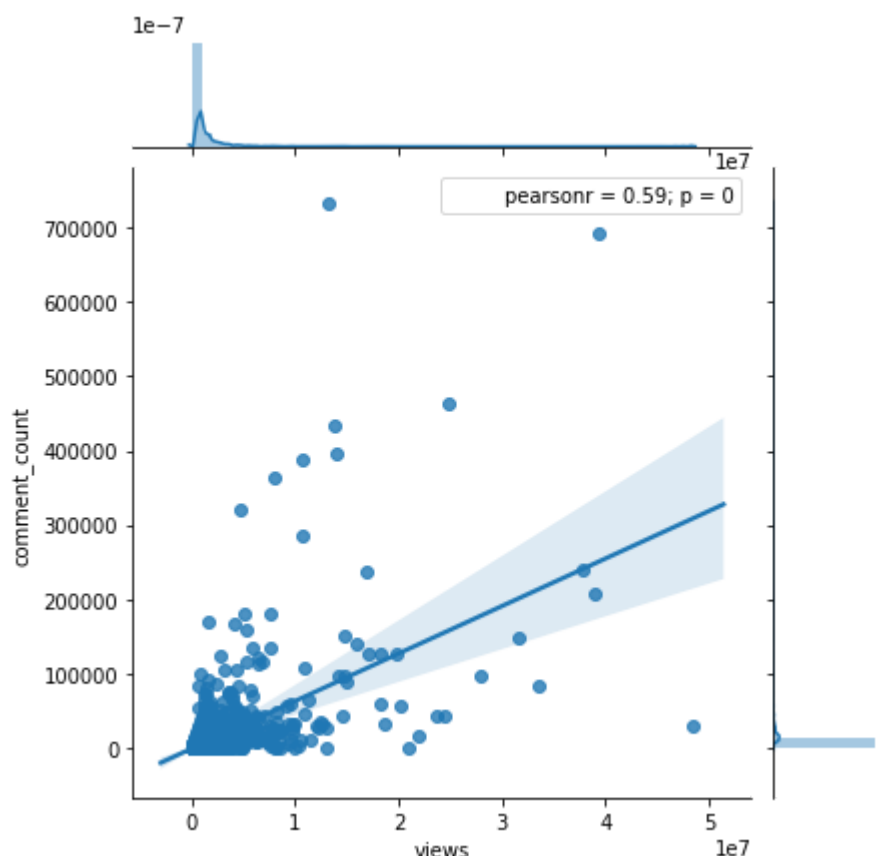
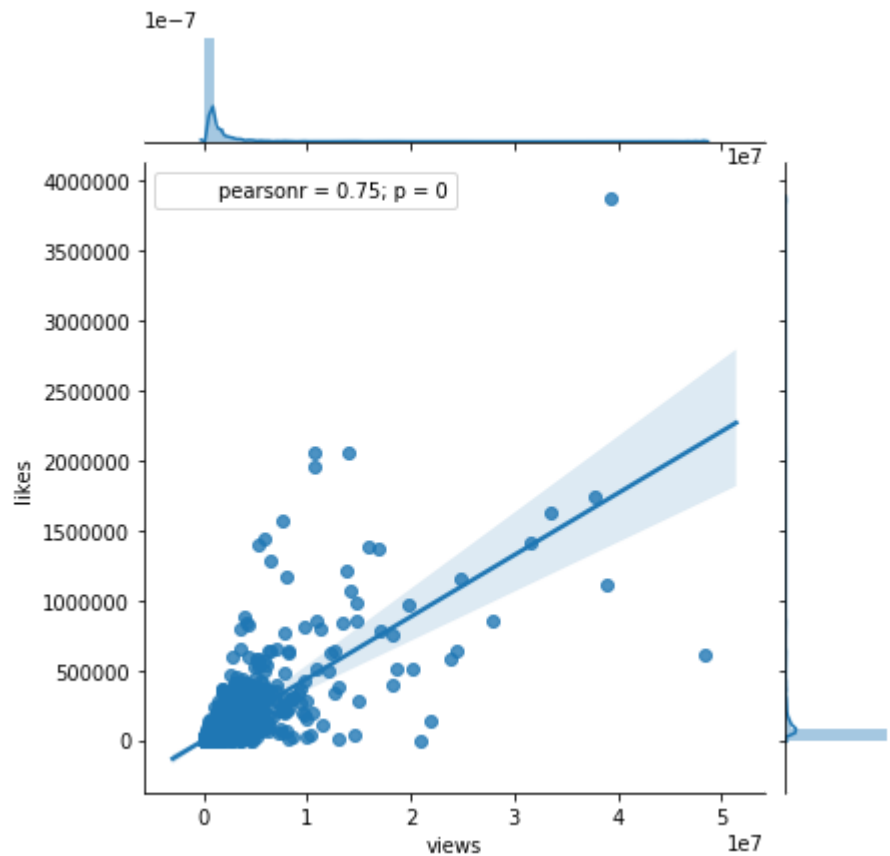
```
In [12]: #Plot of the Number of Views from the Top 10 Most Watched Videos from the 2017
-2018 Period
plt.figure(figsize=(13, 7), dpi=200)
plt.bar(Videos_In_US_Top_10["title"],Videos_In_US_Top_10["views"])
plt.xticks(rotation=90)
plt.ylabel("views")
plt.title("Amount of Views for the Top 10 YouTube Videos")
plt.show()
```

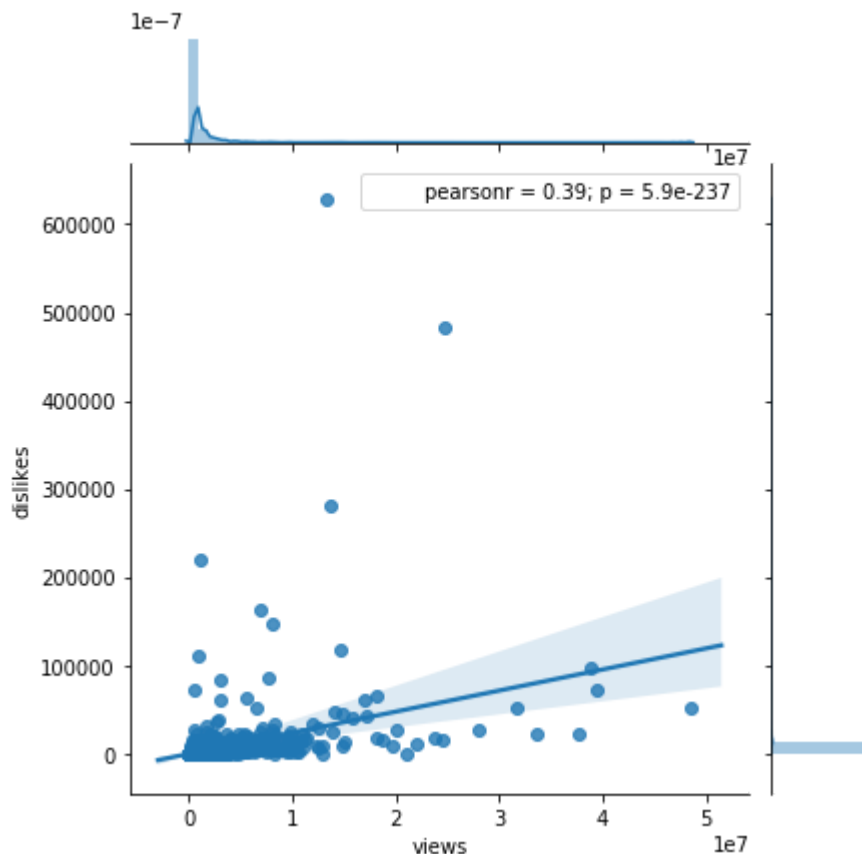


From the bar graph from above, we can see that the top 10 most viewed videos in the US tend to be in the genres of music videos and superhero films (for example, "Marvel Studios' Avengers: Infinity War Official Trailer" and "VENOM - Official Trailer(HD)"). The only videos that seem to be the exception of the rule in this trend would be "YouTube Rewind: The Shape of 2017|#YouTubeRewind" and "Sanju|Official|Trailer|Ranbir Kapoor|Rajkumar Hirani|Releasing on 29th June" since Youtube's 2017 Rewind is simply a compilation of popular YouTube channels/videos from that year and the Sanju film is a biographical film about the actor Sanjay Dutt.

```
In [9]: #Observing the differences of the number of Likes, dislikes, and comments of t  
rending videos in the US  
number_of_likes = sns.jointplot(x = "views", y = "likes", data = Videos_In_US,  
kind = "reg")  
number_of_likes.annotate(stats.pearsonr)  
number_of_comments = sns.jointplot(x = "views", y = "comment_count", data = Vi  
deos_In_US, kind = "reg")  
number_of_comments.annotate(stats.pearsonr)  
number_of_dislikes = sns.jointplot(x = "views", y = "dislikes", data = Videos_  
In_US, kind = "reg")  
number_of_dislikes.annotate(stats.pearsonr)  
plt.figure(figsize = (16, 9), dpi = 200)  
plt.show()
```

```
c:\users\ugoch\appdata\local\programs\python\python37-32\lib\site-packages\seaborn\axisgrid.py:1847: UserWarning: JointGrid annotation is deprecated and will be removed in a future release.  
warnings.warn(UserWarning(msg))
```





<Figure size 3200x1800 with 0 Axes>

For the three graphs, we can see that the one thing that they have in common is that they all have fairly weak positive linear relationships since a fair amount of points tend to be scattered away from the line of best fit, but a large portion of the points are very close to the line of best fit. However, the differences that I have seen in each graph would be that the graph that focuses on the number of likes in each trending video shows a trend in which as the videos increase in the amount of views that they have, there's an increase in the amount of likes that it will have (we really start to see this consistent level of growth around 5,000,000 views, reaches it's peak at 40,000,000 views with 4,000,000 likes, and then declines right after that); the graph with the number of comments has a similar style of growth as the graph with the number of likes, but the difference between the two is that the graph with the number of comments has a much larger dispersion of data points from the best line of fit at around 2,000,000 views and reaches it's max comment count at 15,000,000 views with around 720,000 comments; the graph with the number of dislikes is the most different out of the three graphs in which it reaches it's maximum peak on its perspective y axis very early at 15,000,000 views with 600,000 dislikes and after that point, there's a consistent increase in dislikes as the views increase, but the majority of those dislikes are under 100,000 dislikes. Based on these observations, we can safely conclude that as the more popular a video gets in viewership, the more likes and commentary that the video will receive; and as the least popular a video gets in viewership, the more dislikes that the video will receive.