1. How many videos are published across United States between 2006-2018? Which category of the videos are published the most?

Summary: There were 4.448 videos published on YouTube from 2006 to 2018. Until 2017, most of the videos were published in a few states, such as CA, TX, or NV. In 2017 and 2018, more and more states published videos. Video publishing increased dramatically in 2017 and 2018. Among these videos, the category entertainment had the most videos published.

Design: I used the map to show the number of videos that were published in each state over time. We can clearly see the change from 2006 to 2018. Depending on the number of videos that have been published, each state's colour intensity is visualized. The second column chart shows the number of videos published in each category each year. We can see how the videos are distributed across different categories.

2. What is the number of views for different categories over years? And what categories are the most liked and disliked?

Summary: The top chart shows the views for each category. Over years, music has been the top category with the most views (over 860 billion). The second most viewed category is entertainment (over 800 billion views). Music and entertainment continue to be the most popular categories of videos liked and disliked. However, it is the music that got the most likes and the entertainment that got the most dislikes.

Design: In the top chart, I used a histogram to show the number of views for each category. It is very easy and straightforward for audiences to determine which category of videos are viewed most and least. Next, the butterfly column graph can help audiences clearly see the likes and dislikes for each category at the same time.

3. How many tags for each category over years? And how does tag change for entertainments category?

Summary: the left line chart shows the number of tags that belongs to each category of videos. Prior to 2016, each video category had less than 30 tags. In 2017 and 2018, the number of tags increased dramatically for the majority of the categories. It has the most tags in the entertainment category in particular (4,236 tags in 2017 and 4,722 in 2018). Howto&Style category had more tags than music category in 2018, even it did not have large amount of views compared to music. Audience were getting more interests in Howto&Style category. I checked the tag changes for entertainment category in 2017 and 2018. It showed the videos with tags such as "rewind" are viewed the most in 2017. However, in 2018, more videos with tags "Comedy" and "trailer" are viewed the most.

Design: I created a line graph to display the number of tags for different category of videos over time. Different categories are represent by different coloured lines. Next the word cloud were used to show the tag trend in 2017 and 2018. The different font size of the tags represents the frequency of videos with these tags were viewed.