HW#1: Data Processing (13 points)

Cloud Computing and Big Data Analytics

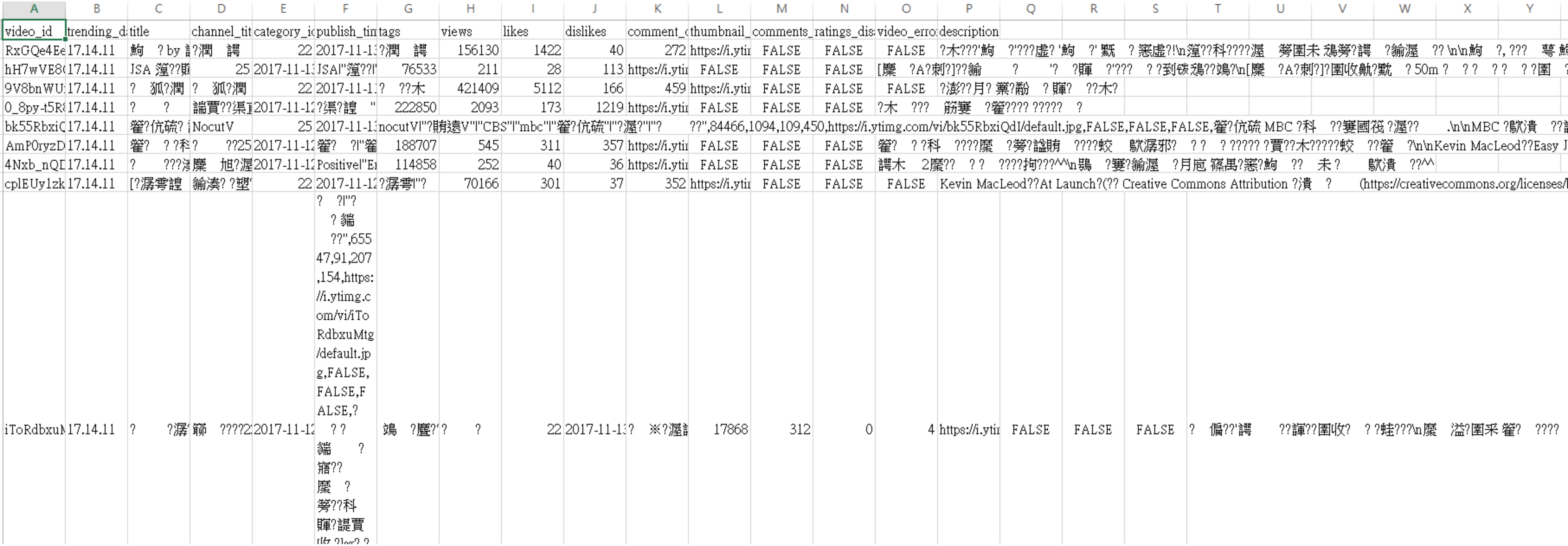
Dataset

- **Statistics for trending YouTube videos**

USvideos.csv

- video_id, trending_date, title, channel_title, category_id, publish_time, tags, views, likes, dislikes, comment_count, thumbnail_link, comments_disabled, ratings_disabled, video_error_or_removed, description

If you open with Excel, you will find a new world…



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Modules we can use…

```
import os
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

Answer the following questions

1. How many empty entries we have for each attributes (5%)?

- Hint: Google-isnull()

2. What are the average values of "likes","dislikes","views","comment_count“ in 2017? (10%)

- Hint: Google-groupby

3. Plot the boxplot of #dislikes for each month in 2017. (10%)

- Hint: Google-sns.boxplot

4. Plot the histogram of #views for each category in 2017 and 2018 in one figure. (10%)

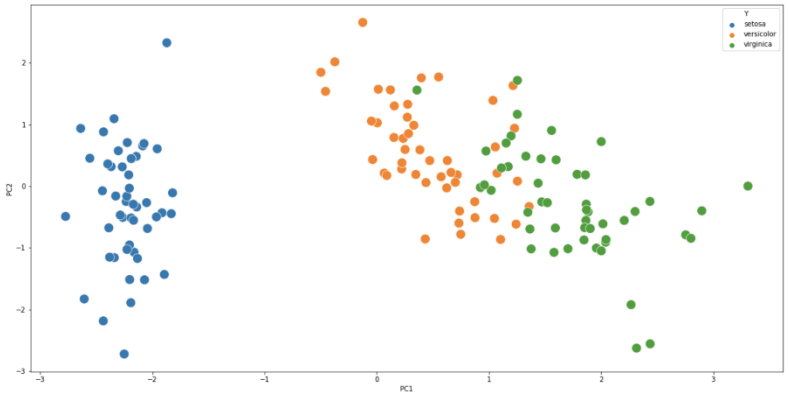
- Hint: Google-sns.barplot

5. Write a myPCA.py from scratch. (50%)

- Hint: https://towardsdatascience.com/principal-component-analysis-pca-from-scratch-in-python-7f3e2a540c51

Details

- myPCA.py is the function for PCA
  - Input: dataset path, target #dim Output: new data object
- In the main jupyter notebook,
  - select 50 samples from each category as the dataset, use “views, likes, dislikes, comment_count, comments_disabled, ratings_disabled, video_error_or_removed” as the features
  - output visualization of data points in 2-dim with color representing the category_id



6. Plot the word cloud of “title”. (15%)

Word Segmentation > Count > Cutoff > Visualization

- Hint: You can use “wordcloud”
- https://pypi.org/project/wordcloud/

Submission

- File Name: [studentID].ipynb, myPCA.py
- Deadline: 23:55. April 3rd, 2021

Lab 1: Data Cleaning

Cloud Computing and Big Data Analytics

Jupyter Notebook

- Blog
  - https://www.dataquest.io/blog/jupyter-notebook-tutorial/
- Tutorial Video
  - https://www.youtube.com/watch?v=HW29067qVWk
- Cloud Services
  - https://www.dataschool.io/cloud-services-for-jupyter-notebook/

Search in Dr

Google

My Drive

New folder

Upload files

Upload folder

Google Docs

Google Sheets

Google Slides

Google Forms

More

Google Drawings

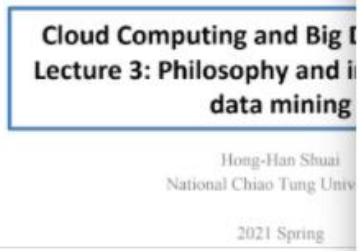
Google My Maps

Google Sites

Google Apps Script

Google Colaboratory

Google Jamboard



Lecture3.pptx

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BASIC LAB

Edited in the past month by Tam

Name

Owner

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- https://colab.research.google.com/drive/1J9NfyYvM0Ti4TEojGQtX8dmjsz_As3RR?usp=sharing