Psychoinformatics - Week 3 (Exercises)

by 戴含芸 (r12227120@ntu.edu.tw)

1 Analyze what videos go viral? (8 points)

Please use YouTube APIs to carry out a data-driven or hypothesis-driven microstudy about the characteristics of viral videos.

You need to present, here in this notebook, AT LEAST two **statistical** figures or tables as supporting evidence for your arguments. Each of these figures/tables deserves 4 points.

Google API

```
In [238...   DEVELOPER_KEY = "AIzaSyDvTBGEPyZPwzyUVWkWkZuWeQIX0muBUh0"
```

In [251...
```python
# Data Sorting
from googleapiclient.discovery import build
youtube = build('youtube', 'v3', developerKey = DEVELOPER_KEY)
result = youtube.videos().list(
    part = 'snippet, contentDetails',
    chart = 'mostPopular',
    regionCode = 'TW', maxResults = 50).execute()

table_data = []

for item in result['items']:
    video_dict = {
        'Channel Title': item['snippet']['channelTitle'],
        'Title': item['snippet']['title'],
        'Duration': item['contentDetails']['duration'].replace('PT', ''),
        'Thumbnails': item['snippet']['thumbnails']['high']['url']
    }
    table_data.append(video_dict)

import pandas as pd
df1 = pd.DataFrame(data = table_data)
df1

#This is a list of the most popular videos
# (with the information of the video title, channel title, video duration, and the url of the thumbnails)
```

Out[251]:

	Channel Title	Title	Duration	Thumbnails
0	愛爾達體育家族 ELTA Sports	【中華隊滑輪溜冰】這就是對勝利的渴望！男子接力隊不放棄衝線 0.01秒之差擊敗南韓摘金！	6M39S	https://i.ytimg.com/vi/GMOBUk4P_fg/hqdefault.jpg
1	東森新聞 CH51	3行人並排走被叭提醒！他神巧遇怒衝理論：在叭什麼 @newsebc #shorts	51S	https://i.ytimg.com/vi/wNLPqv5NNGo/hqdefault.jpg
2	STR Network	【#狗屎寫手】真是一段淒美的愛情故事	21S	https://i.ytimg.com/vi/4taXVRbCWGI/hqdefault.jpg
3	League of Legends	GODS ft. NewJeans (뉴진스) (Official Music Video)...	4M16S	https://i.ytimg.com/vi/C3GouGa0noM/hqdefault.jpg

4	狈总	吃飯最討厭的人... #狈总 #shorts	1M	https://i.ytimg.com/vi/4ReGBvor75E/hqdefault.jpg
5	奎丁Zamy	來了！可以製冷的風扇！ #來了 #開箱	59S	https://i.ytimg.com/vi/7_MA307PleY/hqdefault.jpg
6	瑶瑶别追了	抖音瑶瑶别追了：当女友突然叫我全名，我哥的反应 #shorts	22S	https://i.ytimg.com/vi/YswQ1_NbeqA/hqdefault.jpg
7	Muse木棉花-TW	葬送的芙莉蓮 首播100分鐘 第01-04話｜Muse木棉花 動畫 線上看	1H42M30S	https://i.ytimg.com/vi/1H2cyhWYXrE/hqdefault.jpg
8	做我的猫	住电竞酒店不就是为了玩电脑吗？！#做我的猫#搞笑#恋爱#fyp#抖音做我的猫#吴予#情侣	58S	https://i.ytimg.com/vi/7dwwe9Ymy_M/hqdefault.jpg
9	年代向錢看	《#Linbay #林裕紘 恐嚇案翻車 #馬文君 賣國！》【2023.10.03『年代向錢...	49M52S	https://i.ytimg.com/vi/hEnCWTJILYc/hqdefault.jpg
10	三立LIVE新聞	李正皓.黃敬平火線交鋒！皓獨家揭露"那些馬文君洩露的大秘寶" 笑稱：黃征輝是馬文君案的"小...	1H40M2S	https://i.ytimg.com/vi/9XhNzvk2kIE/hqdefault.jpg
11	狈总	華爾街之狼 #狈总 #shorts	1M1S	https://i.ytimg.com/vi/ozNBlabW4j8/hqdefault.jpg
12	思达林	農村女孩拾金不昧被敲詐，董事長出現后說出事實 #shorts	58S	https://i.ytimg.com/vi/X95Vawvqlyg/hqdefault.jpg
13	這群人TGOP	這群人 TGOP |酒後失態的經典語錄 Classic Quotations for Dum...	15M20S	https://i.ytimg.com/vi/ZOI_fsLlAC8/hqdefault.jpg
14	HYBE LABELS	정국 (Jung Kook) '3D (feat. Jack Harlow)' Offici...	3M51S	https://i.ytimg.com/vi/mHNCM-YALSA/hqdefault.jpg
15	GundamInfo	Mobile Suit Gundam SEED FREEDOM 3rd Trailer	43S	https://i.ytimg.com/vi/WmOxELVTpSs/hqdefault.jpg
16	94要客訴	國親立委擋軍購69次賴清德飆國罵！馬文君封殺潛艦手法影片曝光！黃光芹爆國民黨內參民調：侯17...	57M38S	https://i.ytimg.com/vi/08D0JhUsJgw/hqdefault.jpg
17	健康2.0	譚敦慈 香蕉保存秘訣！不會變黑 可以慢慢吃【挖健康】 @tvbshealth20 #s...	59S	https://i.ytimg.com/vi/dhsHa13m38M/hqdefault.jpg
18	Onion Man	Onion Man	這兩年讓我又愛又恨的男人...	5M9S	https://i.ytimg.com/vi/4-HIZ3Ipj9Q/hqdefault.jpg
19	年代向錢看	《#郭璽 指控 #馬文君 賣國! #阿扁當年想買8艘潛艦!》【年代向錢看】2023.10.0...	49M51S	https://i.ytimg.com/vi/TSPp5XfDUtw/hqdefault.jpg

20	新聞面對面	《「好油」自導自演恐嚇被抓包？直擊藍白「大翻車」現場？》【2023.10.03『新聞面對面』】	1H37M10S	https://i.ytimg.com/vi/rMnOeFffKIY/hqdefault.jpg
21	鏡週刊	【杭州亞運】沒到終點就在嗨！競速溜冰慘遭台灣黃玉霖「絕頂左腿」大逆轉　南韓隊選手「樂極生悲」…	1M10S	https://i.ytimg.com/vi/j9TdOlo5xn0/hqdefault.jpg
22	年代向錢看	《#Linbay 鬧劇有2共犯！#馬文君 有賣台集團！》【年代向錢看】2023.10.04 …	49M52S	https://i.ytimg.com/vi/yAtfMg8gp-Y/hqdefault.jpg
23	这不科学啊	原来月饼🥮里的咸蛋黄并不都是从咸鸭蛋里抠出来的！#fyp #fyptiktok #viral…	1M	https://i.ytimg.com/vi/NnD9hbobOqQ/hqdefault.jpg
24	(G)I-DLE (여자)아이들 (Official YouTube Channel)	(여자)아이들((G)I-DLE) - 'I Want That' M/V Teaser 1	26S	https://i.ytimg.com/vi/CIxApX7r9YQ/hqdefault.jpg
25	狂人爽剧	美女總裁看不起的窮小子，竟是萬人敬仰的龍王，用絕倫的魅力征服了她！【我的極品總裁老婆】#ch…	2H32M2S	https://i.ytimg.com/vi/L9TA24X2SU8/hqdefault.jpg
26	梓俊与唐三	【鬥羅大陸】唐三偶遇美女#cos #反轉 #鬥羅大陸 #shorts	26S	https://i.ytimg.com/vi/TLW9IK3NCFc/hqdefault.jpg
27	The CHOOM (더 춤)	[스우파2] 화사 신곡 시안 미션 대중 평가 l 잼 리퍼블릭(JAM REPUBLIC)	1M55S	https://i.ytimg.com/vi/rMbehw7yO6w/hqdefault.jpg
28	阿斯asu	【三人】Minecraft 完蛋快逃！『所有生物』都追過來要殺了我們的世界生存太誇張了！	33M23S	https://i.ytimg.com/vi/QMcYmlMjerU/hqdefault.jpg
29	Blueberry TV	亚运男子3000米速滑接力赛，韩国选手提前振臂庆祝，被中国台北选手0.01秒极限反超！#杭州…	15S	https://i.ytimg.com/vi/i7JCSKvjy9Q/hqdefault.jpg
30	ABC News	Baby seals cut loose from fishing net	ABC News	1M	https://i.ytimg.com/vi/fQRl7FErNBI/hqdefault.jpg
31	94要客訴	Linbay好油自導自演恐嚇被抓包！黃國昌國民黨民眾黨瞎挺大翻車！國民黨工許哲賓「很乖」…誤…	1H3M27S	https://i.ytimg.com/vi/hc-Dih5lzYY/hqdefault.jpg
32	PuPu噗噗—官方频道	【#PuPu噗噗】猫咪的智商就像爱情,经不起测试#铲屎官的乐趣 #猫咪的迷惑行为	45S	https://i.ytimg.com/vi/I-gKG1B3D-g/hqdefault.jpg
33	Food Carving Master	Fruit And Vegetable Platter😍China's Best Knife…	55S	https://i.ytimg.com/vi/cUPIPf5zwkI/hqdefault.jpg

請問在台灣過半有特權嗎？台灣人過馬路… you can't

34	Tristan H. 崔璀璨	unsee it #交通 #台灣...	20S	https://i.ytimg.com/vi/4LqecmNKZI0/hqdefault.jpg
35	阿星爱追剧	八年前我是他的大小姐，他是我買來的窮小子前男友，八年后他成爲了赫赫有名的總裁，我卻成了服務員...	1H23M12S	https://i.ytimg.com/vi/8LoHD31P1OM/hqdefault.jpg
36	大新聞大爆卦	【大新聞大爆卦】獨!郭正亮獻策侯友宜主動爭取韓國瑜.柯文哲才能對決賴!徐巧芯曝郭璽錄音3億試...	2H1M41S	https://i.ytimg.com/vi/ke7FWmFAyrM/hqdefault.jpg
37	阿滴英文	滴謙CP才是官配!! 大謙會喜歡我排的英倫浪漫行程嗎?	16M2S	https://i.ytimg.com/vi/sYVO25oh3yw/hqdefault.jpg
38	曼曼是老板	故意叫老闆老婆，看她什麼反應#shorts	48S	https://i.ytimg.com/vi/QDcQGFRbx8U/hqdefault.jpg
39	東森新聞 CH51	【小犬颱風】超級惡犬！蘭嶼掀17級+陣風 破百年觀測紀錄 淑麗：今周四風雨最劇 @newsebc	12M25S	https://i.ytimg.com/vi/oIw_m5ml7pA/hqdefault.jpg
40	我愛貓大	趙哥大秀英文 卻讓小S主持不下去?! 【康熙來了】@KangsiComing	59S	https://i.ytimg.com/vi/LldmE4_75xA/hqdefault.jpg
41	民視讚夯 Formosa TV Thumbs Up	揭！馬文君洩潛艦機密？證據在握？ 火爆現場！郭璽.秦慧珠正面交鋒！【台灣最前線】2023....	1H7M23S	https://i.ytimg.com/vi/OCaRw-NGpZg/hqdefault.jpg
42	台南Josh	杭州亞運 韓國 VS 台灣【看球閒聊直播】	3H26S	https://i.ytimg.com/vi/M9RihxdqHa4/hqdefault.jpg
43	无敌枪神	日本大佐砍向美女軍官，危急時刻，功夫小子赤手空拳將他擊殺⚔️#shorts #抗戰 #功夫	42S	https://i.ytimg.com/vi/kdFzKvNST74/hqdefault.jpg
44	Marusya Outdoors	NOW you know how to do it! #camping #survival ...	18S	https://i.ytimg.com/vi/_WEudznbEz4/hqdefault.jpg
45	新台灣加油	黃征輝爆馬文君把"3千檔案"給韓駐台代表處! 郭璽再嗆馬文君賣國賊 黃征輝跳船爆料 李正皓:...	1H3M57S	https://i.ytimg.com/vi/iE8xGdiiwY8/hqdefault.jpg
46	94要客訴	林北好油是民進黨臥底？國民黨工許哲賓涉假恐嚇案還有2共犯！認知戰鬥掉吳音寧+陳時中+陳吉仲......	58M51S	https://i.ytimg.com/vi/lRxIuFoSnxc/hqdefault.jpg
47	TOHO animation チャンネル	『SPY×FAMILY』Season 2 オープニング主題歌Ado「クラクラ」アニメ映像(ノ...	1M31S	https://i.ytimg.com/vi/gz--GkzpAf8/hqdefault.jpg
48	慕容壯壯	電梯裡的好心人居然是公司總裁 #短劇 #情感 #异地恋	1M	https://i.ytimg.com/vi/5S_2qYWCx20/hqdefault.jpg

49	曉涵哥來了	詹姆斯韋伯望遠鏡，最新照片發現宇宙Bug，宇宙大爆炸理論似乎存在問題「曉涵哥來了」	18M22S	https://i.ytimg.com/vi/E7L1mBlPu3s/hqdefault.jpg

Hypothesis-driven microstudy

Hypothesis: 大部分的YouTube發燒影片都是短影片

Data analysis of the video durations of the 50 most popular videos in Taiwan

In [250...
```python
import re
import pandas as pd

time_str = df['Duration']
df.plot.hist(bins = 50)

def time_str_to_seconds(time_str):
    hours = 0
    minutes = 0
    seconds = 0

    time_parts = re.findall(r'(\d+H)?(\d+M)?(\d+S)?', time_str)

    for part in time_parts[0]:
        if 'H' in part:
            hours = int(part.rstrip('H'))
        elif 'M' in part:
            minutes = int(part.rstrip('M'))
        elif 'S' in part:
            seconds = int(part.rstrip('S'))

    total_seconds = (hours * 3600) + (minutes * 60) + seconds
    return total_seconds

df['duration_seconds'] = df['Duration'].apply(time_str_to_seconds)

mean_duration_seconds = df['duration_seconds'].mean()
```
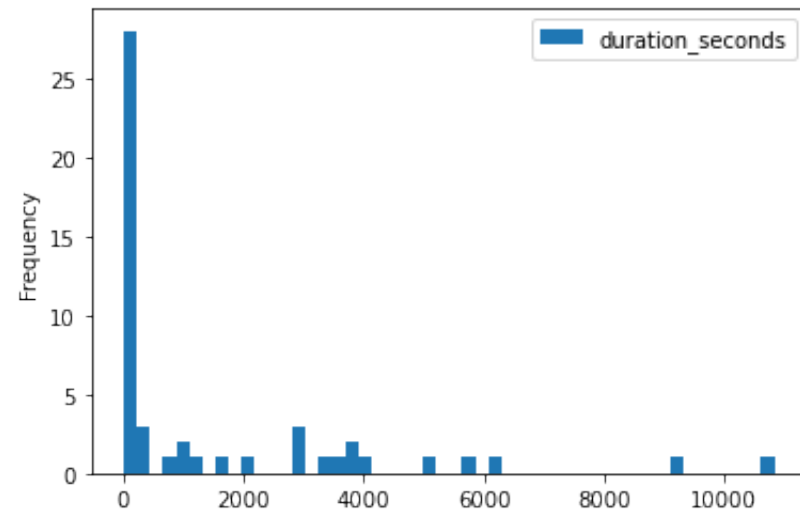
```python
print(f'Mean duration: {mean_duration_seconds}', 'sec.',
      '(', int(mean_duration_seconds) // 60, 'min.', int(mean_duration_seconds) % 60, 'sec.', ')')

median_duration_seconds = df['duration_seconds'].median()
print(f'Median duration: {median_duration_seconds}', 'sec.',
      '(', int(median_duration_seconds) // 60, 'min.', int(median_duration_seconds) % 60, 'sec.', ')')

std_duration_seconds = df['duration_seconds'].std()
print(f'Standard deviation of duration: {int(std_duration_seconds)}', 'sec.',
      '(', int(std_duration_seconds) // 60, 'min.', int(std_duration_seconds) % 60, 'sec.', ')')

# Following is a histogram of the distribution of the durations of the 50 most popular YouTube videos in Taiwan.
```

```
Mean duration: 1488.7 sec. ( 24 min. 48 sec. )
Median duration: 80.5 sec. ( 1 min. 20 sec. )
Standard deviation of duration: 2448 sec. ( 40 min. 48 sec. )
```

Results:

From the distribution plot of the video durations, we can know the video durations have a right skewed distribution (There are extreme outliers). Thus, if we want to know the most common length of the most popular videos, we cannot look at the mean. Instead, we should look at the median of the durations, which is 1 min. 20 sec. Therefore, we know the duration of most of the most popular YouTube videos is about 1 min.

Conclusion: One of the characteristics of viral videos is that they are YouTube Shorts (短影片).

Azure

In [252…

```python
# Setting
from azure.cognitiveservices.vision.computervision import ComputerVisionClient
from azure.cognitiveservices.vision.computervision.models import VisualFeatureTypes
from azure.cognitiveservices.vision.computervision.models import OperationStatusCodes
from msrest.authentication import CognitiveServicesCredentials

import os
region = 'japanwest'
key1 = '81a8ebc956624f2e8728229bb1338085'
key2 = 'c0202f771fc74c2ea1854153d19fc107'

credentials = CognitiveServicesCredentials(key1)
client = ComputerVisionClient(
    endpoint="https://class-demo.cognitiveservices.azure.com/",
    credentials=credentials
)
```

Data-driven microstudy

Image analysis of the thumbnails of the 50 most popular videos in Taiwan

In [253…
```python
cnt = {}
for i in range(50):
    url = result['items'][i]['snippet']['thumbnails']['high']['url']
    analysis = client.analyze_image(url,visual_features=[VisualFeatureTypes.tags, VisualFeatureTypes.description]
    for caption in analysis.description.captions:
        print(caption.text, caption.confidence)
    print('\n')
    for tag in analysis.tags:
        cnt[tag.name] = cnt.get(tag.name, 0) + 1
        print(tag)
    print('\n')
cnt = sorted([(key, cnt[key]) for key in cnt], key=lambda x: x[1], reverse=True)

#Following are the tags and description of the thumbnails of the most popular videos
```

text 0.8145661950111389

{'additional_properties': {}, 'name': 'sport', 'confidence': 0.9986856579780579, 'hint': None}
{'additional_properties': {}, 'name': 'athletic game', 'confidence': 0.9927344918251038, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.9681891798973083, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9519217610359192, 'hint': None}
{'additional_properties': {}, 'name': 'sports equipment', 'confidence': 0.8979803323745728, 'hint': None}
{'additional_properties': {}, 'name': 'sportswear', 'confidence': 0.8803451061248779, 'hint': None}
{'additional_properties': {}, 'name': 'sports uniform', 'confidence': 0.8759868741035461, 'hint': None}
{'additional_properties': {}, 'name': 'tennis', 'confidence': 0.8689157366752625, 'hint': None}
{'additional_properties': {}, 'name': 'player', 'confidence': 0.835662305355072, 'hint': None}
{'additional_properties': {}, 'name': 'court', 'confidence': 0.8304990530014038, 'hint': None}
{'additional_properties': {}, 'name': 'basketball', 'confidence': 0.7330825328826904, 'hint': None}

graphical user interface, website 0.9979671835899353

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9996216297149658, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9488331079483032, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8162879943847656, 'hint': None}

text 0.4699532389640808

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.999610424041748, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9979101419448853, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9944297075271606, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9321560263633728, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.6826791167259216, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.597166895866394, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.5284674763679504, 'hint': None}

graphical user interface, website 0.9792607426643372

{'additional_properties': {}, 'name': 'anime', 'confidence': 0.9972169399261475, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9280222058296204, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.918429970741272, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.9089674949645996, 'hint': None}
{'additional_properties': {}, 'name': 'fiction', 'confidence': 0.9047513008117676, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.8981349468231201, 'hint': None}
{'additional_properties': {}, 'name': 'cg artwork', 'confidence': 0.8939129114151001, 'hint': None}
{'additional_properties': {}, 'name': 'graphic design', 'confidence': 0.8843657970428467, 'hint': None}
{'additional_properties': {}, 'name': 'graphics', 'confidence': 0.8707614541053772, 'hint': None}
{'additional_properties': {}, 'name': 'animation', 'confidence': 0.8526637554168701, 'hint': None}

a woman sitting at a table 0.6326422095298767

{'additional_properties': {}, 'name': 'person', 'confidence': 0.9986951351165771, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.996621310710907, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.992821216583252, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9173109531402588, 'hint': None}
{'additional_properties': {}, 'name': 'table', 'confidence': 0.8787213563919067, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.8760084509849548, 'hint': None}

{'additional_properties': {}, 'name': 'wall', 'confidence': 0.8724358081817627, 'hint': None}
{'additional_properties': {}, 'name': 'purple', 'confidence': 0.8578754663467407, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8301178216934204, 'hint': None}
{'additional_properties': {}, 'name': 'pink', 'confidence': 0.7943583726882935, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.4009559154510498, 'hint': None}

a woman holding a trophy 0.5172412991523743

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9986447691917419, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9975280165672302, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9944140911102295, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9340800642967224, 'hint': None}
{'additional_properties': {}, 'name': 'microphone', 'confidence': 0.8861417770385742, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.830303430557251, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.7471645474433899, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.625751256942749, 'hint': None}

a man wearing glasses 0.5321102142333984

{'additional_properties': {}, 'name': 'person', 'confidence': 0.9855959415435791, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9827294945716858, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9564259052276611, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.9436901807785034, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9239050149917603, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.8416686058044434, 'hint': None}

diagram 0.72170090675354

{'additional_properties': {}, 'name': 'anime', 'confidence': 0.9971269965171814, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.9472832679748535, 'hint': None}
{'additional_properties': {}, 'name': 'manga', 'confidence': 0.9284831285476685, 'hint': None}
{'additional_properties': {}, 'name': 'animation', 'confidence': 0.9146013259887695, 'hint': None}

{'additional_properties': {}, 'name': 'illustration', 'confidence': 0.9125293493270874, 'hint': None}
{'additional_properties': {}, 'name': 'animated cartoon', 'confidence': 0.905097484588623, 'hint': None}
{'additional_properties': {}, 'name': 'fiction', 'confidence': 0.8745951652526855, 'hint': None}
{'additional_properties': {}, 'name': 'cg artwork', 'confidence': 0.8736734390258789, 'hint': None}
{'additional_properties': {}, 'name': 'fictional character', 'confidence': 0.8580191135406494, 'hint': None}

graphical user interface, website 0.9998617172241211

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9995579719543457, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9832329750061035, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9763268232345581, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.9643830060958862, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9458321928977966, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9064083099365234, 'hint': None}
{'additional_properties': {}, 'name': 'wall', 'confidence': 0.9029738903045654, 'hint': None}
{'additional_properties': {}, 'name': 'bed', 'confidence': 0.8765904903411865, 'hint': None}
{'additional_properties': {}, 'name': 'bedclothes', 'confidence': 0.7895115613937378, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.7797274589538574, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.5398647785186768, 'hint': None}
{'additional_properties': {}, 'name': 'room', 'confidence': 0.5266790390014648, 'hint': None}
{'additional_properties': {}, 'name': 'art', 'confidence': 0.45385488867759705, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.4419997036457062, 'hint': None}

a group of people 0.42479407787323

{'additional_properties': {}, 'name': 'text', 'confidence': 0.999451220035553, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9986546039581299, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.9948868751525879, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9600968360900879, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9481452703475952, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9305983781814575, 'hint': None}
{'additional_properties': {}, 'name': 'eyewear', 'confidence': 0.9108259677886963, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9056261777877808, 'hint': None}
{'additional_properties': {}, 'name': 'vision care', 'confidence': 0.8664766550064087, 'hint': None}

{'additional_properties': {}, 'name': 'forehead', 'confidence': 0.8564214706420898, 'hint': None}

website 0.8192678093910217

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9998023509979248, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.994114875793457, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.985136866569519, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9825986623764038, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9702110886573792, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.923858642578125, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9134448170661926, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.9050753116607666, 'hint': None}
{'additional_properties': {}, 'name': 'media', 'confidence': 0.8918678760528564, 'hint': None}
{'additional_properties': {}, 'name': 'television program', 'confidence': 0.8598895072937012, 'hint': None}

a man in a suit and tie 0.4940919876098633

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9980804920196533, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9974490404129028, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9892221093177795, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9854599237442017, 'hint': None}
{'additional_properties': {}, 'name': 'tie', 'confidence': 0.9728462100028992, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9661157727241516, 'hint': None}
{'additional_properties': {}, 'name': 'businessperson', 'confidence': 0.9439476728439331, 'hint': None}
{'additional_properties': {}, 'name': 'white-collar worker', 'confidence': 0.9355969429016113, 'hint': None}
{'additional_properties': {}, 'name': 'formal wear', 'confidence': 0.8834980726242065, 'hint': None}
{'additional_properties': {}, 'name': 'blazer', 'confidence': 0.8804502487182617, 'hint': None}
{'additional_properties': {}, 'name': 'management', 'confidence': 0.8793023824691772, 'hint': None}
{'additional_properties': {}, 'name': 'speech', 'confidence': 0.8763662576675415, 'hint': None}
{'additional_properties': {}, 'name': 'official', 'confidence': 0.8675994873046875, 'hint': None}
{'additional_properties': {}, 'name': 'orator', 'confidence': 0.8652125000953674, 'hint': None}
{'additional_properties': {}, 'name': 'spokesperson', 'confidence': 0.8641047477722168, 'hint': None}
{'additional_properties': {}, 'name': 'job', 'confidence': 0.8637874126434326, 'hint': None}
{'additional_properties': {}, 'name': 'public speaking', 'confidence': 0.8601516485214233, 'hint': None}

{'additional_properties': {}, 'name': 'lectern', 'confidence': 0.8439267873764038, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.8092164993286133, 'hint': None}
{'additional_properties': {}, 'name': 'business', 'confidence': 0.6815434098243713, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.5965606570243835, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.5528805255889893, 'hint': None}

a person in a pink dress 0.3849394619464874

{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9992468357086182, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9898010492324829, 'hint': None}
{'additional_properties': {}, 'name': 'fashion accessory', 'confidence': 0.9708184003829956, 'hint': None}
{'additional_properties': {}, 'name': 'sleeve', 'confidence': 0.9231569766998291, 'hint': None}
{'additional_properties': {}, 'name': 'street fashion', 'confidence': 0.9015684723854065, 'hint': None}
{'additional_properties': {}, 'name': 'fashion design', 'confidence': 0.8977679014205933, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.8955599069595337, 'hint': None}
{'additional_properties': {}, 'name': 'building', 'confidence': 0.8796056509017944, 'hint': None}
{'additional_properties': {}, 'name': 'shirt', 'confidence': 0.8759894371032715, 'hint': None}
{'additional_properties': {}, 'name': 'pattern (fashion design)', 'confidence': 0.8757337331771851, 'hint': None}
{'additional_properties': {}, 'name': 'collar', 'confidence': 0.8692533373832703, 'hint': None}
{'additional_properties': {}, 'name': 'fashion', 'confidence': 0.8654437065124512, 'hint': None}
{'additional_properties': {}, 'name': 'outerwear', 'confidence': 0.8639087080955505, 'hint': None}
{'additional_properties': {}, 'name': 'casual dress', 'confidence': 0.858523964881897, 'hint': None}
{'additional_properties': {}, 'name': 'hat', 'confidence': 0.8466853499412537, 'hint': None}
{'additional_properties': {}, 'name': 'wearing', 'confidence': 0.830608606338501, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.8281042575836182, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.7250247597694397, 'hint': None}

a group of people 0.4825838804244995

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9952100515365601, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.9729403257369995, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9150044918060303, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9069697856903076, 'hint': None}

{'additional_properties': {}, 'name': 'girl', 'confidence': 0.8857972621917725, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8674492835998535, 'hint': None}
{'additional_properties': {}, 'name': 'collage', 'confidence': 0.8562860488891602, 'hint': None}
{'additional_properties': {}, 'name': 'violet', 'confidence': 0.8411873579025269, 'hint': None}

a person standing on a ledge 0.39934346079826355

{'additional_properties': {}, 'name': 'sky', 'confidence': 0.9678053855895996, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9627498388290405, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.8526678085327148, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.5998506546020508, 'hint': None}

application 0.3496348261833191

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9931434988975525, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9820398092269897, 'hint': None}
{'additional_properties': {}, 'name': 'graphic design', 'confidence': 0.9488213062286377, 'hint': None}
{'additional_properties': {}, 'name': 'graphics', 'confidence': 0.8996856808662415, 'hint': None}
{'additional_properties': {}, 'name': 'brand', 'confidence': 0.8930566310882568, 'hint': None}
{'additional_properties': {}, 'name': 'anime', 'confidence': 0.7723961472511292, 'hint': None}

a screen shot of a television 0.40374910831451416

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9998959898948669, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9957619309425354, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9637919664382935, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.946620523929596, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.926322340965271, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.8800677061080933, 'hint': None}
{'additional_properties': {}, 'name': 'advertising', 'confidence': 0.880060613155365, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.7496851682662964, 'hint': None}

qr code 0.1595025509595871

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9999622106552124, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9823445677757263, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9677119851112366, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.8718493580818176, 'hint': None}

a group of cartoon faces 0.3254506289958954

{'additional_properties': {}, 'name': 'halloween', 'confidence': 0.9596689939498901, 'hint': None}
{'additional_properties': {}, 'name': 'animated cartoon', 'confidence': 0.8803949952125549, 'hint': None}
{'additional_properties': {}, 'name': 'pumpkin', 'confidence': 0.814306914806366, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.5214840173721313, 'hint': None}

graphical user interface, website 0.9869436025619507

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9997190237045288, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9976481199264526, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.952865481376648, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9265425205230713, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9054446220397949, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8970423936843872, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.8943690061569214, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.8760437965393066, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.8720276355743408, 'hint': None}
{'additional_properties': {}, 'name': 'forehead', 'confidence': 0.8662315607070923, 'hint': None}

a person in a suit 0.46384525299072266

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9999749660491943, 'hint': None}

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.983628511428833, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9816519021987915, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.9765759706497192, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9453266859054565, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9384061694145203, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.9201152324676514, 'hint': None}
{'additional_properties': {}, 'name': 'media', 'confidence': 0.8949180245399475, 'hint': None}
{'additional_properties': {}, 'name': 'white-collar worker', 'confidence': 0.8734024167060852, 'hint': None}
{'additional_properties': {}, 'name': 'newscaster', 'confidence': 0.8576645255088806, 'hint': None}
{'additional_properties': {}, 'name': 'businessperson', 'confidence': 0.8504225015640259, 'hint': None}
{'additional_properties': {}, 'name': 'television presenter', 'confidence': 0.8456466794013977, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.7961863279342651, 'hint': None}

a person in a helmet and goggles jumping in the air 0.395859032869339

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9802479147911072, 'hint': None}
{'additional_properties': {}, 'name': 'helmet', 'confidence': 0.9791207909584045, 'hint': None}
{'additional_properties': {}, 'name': 'sports equipment', 'confidence': 0.9749326705932617, 'hint': None}
{'additional_properties': {}, 'name': 'bicycle helmet', 'confidence': 0.9671033024787903, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9638874530792236, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9631400108337402, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.8972959518432617, 'hint': None}
{'additional_properties': {}, 'name': 'sports uniform', 'confidence': 0.883010983467102, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.8500735759735107, 'hint': None}
{'additional_properties': {}, 'name': 'bicycling', 'confidence': 0.6860241889953613, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.6331019997596741, 'hint': None}
{'additional_properties': {}, 'name': 'cycling', 'confidence': 0.43554699420928955, 'hint': None}

a group of people 0.47659656405448914

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9993641376495361, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.9992474317550659, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9908199310302734, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.9863369464874268, 'hint': None}

{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9860815405845642, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9709763526916504, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9253708124160767, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9165810346603394, 'hint': None}
{'additional_properties': {}, 'name': 'forehead', 'confidence': 0.9032831788063049, 'hint': None}
{'additional_properties': {}, 'name': 'microphone', 'confidence': 0.8873695731163025, 'hint': None}
{'additional_properties': {}, 'name': 'chin', 'confidence': 0.8682221174240112, 'hint': None}
{'additional_properties': {}, 'name': 'eyewear', 'confidence': 0.8641337752342224, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.5436410307884216, 'hint': None}

a person in a white shirt 0.48858246207237244

{'additional_properties': {}, 'name': 'person', 'confidence': 0.9942182898521423, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9897595643997192, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.967877984046936, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9151123762130737, 'hint': None}
{'additional_properties': {}, 'name': 'photograph', 'confidence': 0.875046968460083, 'hint': None}
{'additional_properties': {}, 'name': 'shoulder', 'confidence': 0.8538065552711487, 'hint': None}
{'additional_properties': {}, 'name': 'wall', 'confidence': 0.7513445615768433, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.6894466280937195, 'hint': None}

a woman lying on a bed 0.4656532406806946

{'additional_properties': {}, 'name': 'female person', 'confidence': 0.9709033370018005, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9692572355270386, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9530575275421143, 'hint': None}
{'additional_properties': {}, 'name': 'lady', 'confidence': 0.9336287379264832, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9332410097122192, 'hint': None}
{'additional_properties': {}, 'name': 'photo shoot', 'confidence': 0.9290552139282227, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9271760582923889, 'hint': None}
{'additional_properties': {}, 'name': 'model', 'confidence': 0.9227946400642395, 'hint': None}
{'additional_properties': {}, 'name': 'long hair', 'confidence': 0.9133968353271484, 'hint': None}
{'additional_properties': {}, 'name': 'dress', 'confidence': 0.9105699062347412, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.8871956467628479, 'hint': None}

{'additional_properties': {}, 'name': 'fashion model', 'confidence': 0.8515421748161316, 'hint': None}
{'additional_properties': {}, 'name': 'shoulder', 'confidence': 0.8442301154136658, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8118676543235779, 'hint': None}

a man and woman 0.4476758539676666

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9986779689788818, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9970983266830444, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9954134225845337, 'hint': None}
{'additional_properties': {}, 'name': 'black hair', 'confidence': 0.9263440370559692, 'hint': None}
{'additional_properties': {}, 'name': 'eyebrow', 'confidence': 0.892013430595398, 'hint': None}
{'additional_properties': {}, 'name': 'portrait', 'confidence': 0.8846170902252197, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.8669183850288391, 'hint': None}
{'additional_properties': {}, 'name': 'portrait photography', 'confidence': 0.8640122413635254, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.861510157585144, 'hint': None}
{'additional_properties': {}, 'name': 'lip', 'confidence': 0.856528103351593, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.8559288382530212, 'hint': None}
{'additional_properties': {}, 'name': 'wall', 'confidence': 0.7448511123657227, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.7133093476295471, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.7087423801422119, 'hint': None}
{'additional_properties': {}, 'name': 'young', 'confidence': 0.6704436540603638, 'hint': None}
{'additional_properties': {}, 'name': 'asian', 'confidence': 0.5324382781982422, 'hint': None}

a person with pink hair 0.5141542553901672

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9923617243766785, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9874653220176697, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9332617521286011, 'hint': None}
{'additional_properties': {}, 'name': 'hairstyle', 'confidence': 0.9077059030532837, 'hint': None}
{'additional_properties': {}, 'name': 'hair coloring', 'confidence': 0.8937715888023376, 'hint': None}
{'additional_properties': {}, 'name': 'lip', 'confidence': 0.8905304670333862, 'hint': None}
{'additional_properties': {}, 'name': 'neck', 'confidence': 0.8899692296981812, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.8654847145080566, 'hint': None}
{'additional_properties': {}, 'name': 'bangs', 'confidence': 0.841323733329773, 'hint': None}

{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.7393875122070312, 'hint': None}

a group of people on a stage 0.6234824061393738

{'additional_properties': {}, 'name': 'text', 'confidence': 0.954386830329895, 'hint': None}
{'additional_properties': {}, 'name': 'entertainment', 'confidence': 0.9447817206382751, 'hint': None}
{'additional_properties': {}, 'name': 'dance', 'confidence': 0.9120820760726929, 'hint': None}
{'additional_properties': {}, 'name': 'performance', 'confidence': 0.8856812715530396, 'hint': None}
{'additional_properties': {}, 'name': 'performance art', 'confidence': 0.885053277015686, 'hint': None}
{'additional_properties': {}, 'name': 'event', 'confidence': 0.8817288279533386, 'hint': None}
{'additional_properties': {}, 'name': 'concert', 'confidence': 0.8780171871185303, 'hint': None}
{'additional_properties': {}, 'name': 'magenta', 'confidence': 0.8452650308609009, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.711133599281311, 'hint': None}

graphical user interface 0.7353078722953796

{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9544033408164978, 'hint': None}
{'additional_properties': {}, 'name': 'tree', 'confidence': 0.9370119571685791, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.9035972356796265, 'hint': None}
{'additional_properties': {}, 'name': 'house', 'confidence': 0.8634321689605713, 'hint': None}
{'additional_properties': {}, 'name': 'minecraft', 'confidence': 0.8521515130996704, 'hint': None}
{'additional_properties': {}, 'name': 'pc game', 'confidence': 0.8440110683441162, 'hint': None}
{'additional_properties': {}, 'name': 'LEGO', 'confidence': 0.4476928114891052, 'hint': None}

graphical user interface, website 0.9167067408561707

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9987034797668457, 'hint': None}
{'additional_properties': {}, 'name': 'sport', 'confidence': 0.9893380403518677, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9007589221000671, 'hint': None}
{'additional_properties': {}, 'name': 'physical fitness', 'confidence': 0.8684270977973938, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.6787618398666382, 'hint': None}
{'additional_properties': {}, 'name': 'tennis', 'confidence': 0.6704011559486389, 'hint': None}

graphical user interface, website 0.604205846786499

{'additional_properties': {}, 'name': 'person', 'confidence': 0.9751767516136169, 'hint': None}
{'additional_properties': {}, 'name': 'ground', 'confidence': 0.6703904867172241, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.6406952738761902, 'hint': None}

a group of men on a television screen 0.4012526869773865

{'additional_properties': {}, 'name': 'text', 'confidence': 0.999783992767334, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9931849241256714, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9803866147994995, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9671916961669922, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.9311872124671936, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.903357982635498, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8459613919258118, 'hint': None}

a cat with a note 0.32860997319221497

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9972003102302551, 'hint': None}
{'additional_properties': {}, 'name': 'animal', 'confidence': 0.9917415380477905, 'hint': None}
{'additional_properties': {}, 'name': 'mammal', 'confidence': 0.9898909330368042, 'hint': None}
{'additional_properties': {}, 'name': 'small to medium-sized cats', 'confidence': 0.9728888869285583, 'hint': None}
{'additional_properties': {}, 'name': 'domestic cat', 'confidence': 0.9707098603248596, 'hint': None}
{'additional_properties': {}, 'name': 'cat', 'confidence': 0.963248074054718, 'hint': None}
{'additional_properties': {}, 'name': 'felidae', 'confidence': 0.9407501220703125, 'hint': None}
{'additional_properties': {}, 'name': 'whiskers', 'confidence': 0.8664219975471497, 'hint': None}
{'additional_properties': {}, 'name': 'domestic short-haired cat', 'confidence': 0.8463499546051025, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.6452624797821045, 'hint': None}
{'additional_properties': {}, 'name': 'kitten', 'confidence': 0.5986816883087158, 'hint': None}

diagram 0.4883641302585602

{'additional_properties': {}, 'name': 'natural foods', 'confidence': 0.9006646871566772, 'hint': None}
{'additional_properties': {}, 'name': 'cucumber', 'confidence': 0.898591935634613, 'hint': None}
{'additional_properties': {}, 'name': 'produce', 'confidence': 0.8912334442138672, 'hint': None}
{'additional_properties': {}, 'name': 'fruit', 'confidence': 0.8890775442123413, 'hint': None}
{'additional_properties': {}, 'name': 'food group', 'confidence': 0.8629979491233826, 'hint': None}
{'additional_properties': {}, 'name': 'vegetarian food', 'confidence': 0.8448772430419922, 'hint': None}
{'additional_properties': {}, 'name': 'food', 'confidence': 0.7558653354644775, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.621528148651123, 'hint': None}
{'additional_properties': {}, 'name': 'vegetable', 'confidence': 0.5327545404434204, 'hint': None}

a person walking across a crosswalk 0.5786355137825012

{'additional_properties': {}, 'name': 'crosswalk', 'confidence': 0.9979174137115479, 'hint': None}
{'additional_properties': {}, 'name': 'scene', 'confidence': 0.9945714473724365, 'hint': None}
{'additional_properties': {}, 'name': 'way', 'confidence': 0.992538571357727, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9743689298629761, 'hint': None}
{'additional_properties': {}, 'name': 'footwear', 'confidence': 0.9614969491958618, 'hint': None}
{'additional_properties': {}, 'name': 'pedestrian crossing', 'confidence': 0.9582721590995789, 'hint': None}
{'additional_properties': {}, 'name': 'zebra crossing', 'confidence': 0.9525076150894165, 'hint': None}
{'additional_properties': {}, 'name': 'text', 'confidence': 0.9422451257705688, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9346959590911865, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.9223750829696655, 'hint': None}
{'additional_properties': {}, 'name': 'pedestrian', 'confidence': 0.8841700553894043, 'hint': None}
{'additional_properties': {}, 'name': 'street', 'confidence': 0.8826566934585571, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.8588603734970093, 'hint': None}
{'additional_properties': {}, 'name': 'street fashion', 'confidence': 0.85594642162323, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8529342412948608, 'hint': None}
{'additional_properties': {}, 'name': 'road', 'confidence': 0.8456394672393799, 'hint': None}
{'additional_properties': {}, 'name': 'fashion', 'confidence': 0.5425293445587158, 'hint': None}
{'additional_properties': {}, 'name': 'zebra', 'confidence': 0.5321710705757141, 'hint': None}

a collage of a person 0.48482853174209595

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9927419424057007, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9832910299301147, 'hint': None}
{'additional_properties': {}, 'name': 'kiss', 'confidence': 0.9670654535293579, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9463403224945068, 'hint': None}
{'additional_properties': {}, 'name': 'love', 'confidence': 0.9385168552398682, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.8892284631729126, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8891761302947998, 'hint': None}
{'additional_properties': {}, 'name': 'interaction', 'confidence': 0.8805406093597412, 'hint': None}
{'additional_properties': {}, 'name': 'romance', 'confidence': 0.8471201658248901, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.8426288962364197, 'hint': None}

a group of people posing for a photo 0.5904488563537598

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9995769262313843, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9978504180908203, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9973915815353394, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9806607961654663, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.9608830809593201, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9498383402824402, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9497482180595398, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.8858230113983154, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.8513599038124084, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.8463082313537598, 'hint': None}

a man and woman eating food 0.3538190424442291

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9973177313804626, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9948773980140686, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9889350533485413, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.968514621257782, 'hint': None}

{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9603173732757568, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.942080020904541, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9171897172927856, 'hint': None}

a person in a white dress 0.5127300024032593

{'additional_properties': {}, 'name': 'land vehicle', 'confidence': 0.9706799983978271, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9636931419372559, 'hint': None}
{'additional_properties': {}, 'name': 'car', 'confidence': 0.9624440670013428, 'hint': None}
{'additional_properties': {}, 'name': 'vehicle', 'confidence': 0.9600275754928589, 'hint': None}
{'additional_properties': {}, 'name': 'wheel', 'confidence': 0.9549218416213989, 'hint': None}
{'additional_properties': {}, 'name': 'tire', 'confidence': 0.9078648686408997, 'hint': None}
{'additional_properties': {}, 'name': 'auto part', 'confidence': 0.8708456754684448, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.8623917102813721, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8337234258651733, 'hint': None}
{'additional_properties': {}, 'name': 'ao dai', 'confidence': 0.7735125422477722, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.6697601675987244, 'hint': None}
{'additional_properties': {}, 'name': 'girl', 'confidence': 0.5505868196487427, 'hint': None}

diagram 0.3209095001220703

{'additional_properties': {}, 'name': 'text', 'confidence': 0.99996018409729, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.8905450701713562, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.8843239545822144, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.8825898170471191, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8598486185073853, 'hint': None}

a person speaking at a podium 0.5227702856063843

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9999604225158691, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9859786629676819, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9839674234390259, 'hint': None}

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9621712565422058, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.939306378364563, 'hint': None}
{'additional_properties': {}, 'name': 'suit', 'confidence': 0.9132241010665894, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.7206318974494934, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.6643696427345276, 'hint': None}

a group of people 0.5175201296806335

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9997776746749878, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9989891052246094, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9897820949554443, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9558548927307129, 'hint': None}
{'additional_properties': {}, 'name': 'news', 'confidence': 0.9359060525894165, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.9339244365692139, 'hint': None}
{'additional_properties': {}, 'name': 'media', 'confidence': 0.9070600271224976, 'hint': None}
{'additional_properties': {}, 'name': 'television program', 'confidence': 0.8968558311462402, 'hint': None}
{'additional_properties': {}, 'name': 'video', 'confidence': 0.8789609670639038, 'hint': None}
{'additional_properties': {}, 'name': 'newscaster', 'confidence': 0.8634365200996399, 'hint': None}
{'additional_properties': {}, 'name': 'advertising', 'confidence': 0.8601971864700317, 'hint': None}
{'additional_properties': {}, 'name': 'television presenter', 'confidence': 0.8570354580879211, 'hint': None}
{'additional_properties': {}, 'name': 'sign', 'confidence': 0.570930540561676, 'hint': None}

text 0.5764065980911255

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9982489347457886, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9679262638092041, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9514163732528687, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.94251549243927, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9278522729873657, 'hint': None}
{'additional_properties': {}, 'name': 'graphic design', 'confidence': 0.8933846950531006, 'hint': None}
{'additional_properties': {}, 'name': 'hat', 'confidence': 0.8895728588104248, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.8844490647315979, 'hint': None}
{'additional_properties': {}, 'name': 'graphics', 'confidence': 0.8689513802528381, 'hint': None}
{'additional_properties': {}, 'name': 'brand', 'confidence': 0.8463619947433472, 'hint': None}

{'additional_properties': {}, 'name': 'logo', 'confidence': 0.8438016772270203, 'hint': None}

a man and a woman smiling 0.34635797142982483

{'additional_properties': {}, 'name': 'person', 'confidence': 0.998958945274353, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9948041439056396, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9574733972549438, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.9291025400161743, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9179672598838806, 'hint': None}
{'additional_properties': {}, 'name': 'human', 'confidence': 0.8680499196052551, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.8665912747383118, 'hint': None}
{'additional_properties': {}, 'name': 'skin', 'confidence': 0.8644295334815979, 'hint': None}

a girl holding a bottle and a paper with a flame 0.3184588551521301

{'additional_properties': {}, 'name': 'person', 'confidence': 0.9974365234375, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9872617721557617, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9508644342422485, 'hint': None}
{'additional_properties': {}, 'name': 'candle', 'confidence': 0.9496273994445801, 'hint': None}
{'additional_properties': {}, 'name': 'outdoor', 'confidence': 0.9341757297515869, 'hint': None}
{'additional_properties': {}, 'name': 'smile', 'confidence': 0.886004626750946, 'hint': None}
{'additional_properties': {}, 'name': 'holding', 'confidence': 0.8858102560043335, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8587250709533691, 'hint': None}

graphical user interface, website 0.8141455054283142

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9999046921730042, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.994184672832489, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9684441089630127, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9340771436691284, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.9339852333068848, 'hint': None}
{'additional_properties': {}, 'name': 'media', 'confidence': 0.8938523530960083, 'hint': None}

{'additional_properties': {}, 'name': 'news', 'confidence': 0.8876204490661621, 'hint': None}
{'additional_properties': {}, 'name': 'video', 'confidence': 0.8572970628738403, 'hint': None}
{'additional_properties': {}, 'name': 'advertising', 'confidence': 0.8541462421417236, 'hint': None}
{'additional_properties': {}, 'name': 'television program', 'confidence': 0.8409501314163208, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.7901352643966675, 'hint': None}

text 0.37243473529815674

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9998998045921326, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.981939435005188, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.9775629043579102, 'hint': None}
{'additional_properties': {}, 'name': 'glasses', 'confidence': 0.9568248987197876, 'hint': None}
{'additional_properties': {}, 'name': 'screenshot', 'confidence': 0.92878258228302, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9200916290283203, 'hint': None}
{'additional_properties': {}, 'name': 'human beard', 'confidence': 0.8576564192771912, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.6731299757957458, 'hint': None}

graphical user interface 0.8234343528747559

{'additional_properties': {}, 'name': 'anime', 'confidence': 0.9838110208511353, 'hint': None}
{'additional_properties': {}, 'name': 'animated cartoon', 'confidence': 0.9565290808677673, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9452999830245972, 'hint': None}
{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9422101974487305, 'hint': None}
{'additional_properties': {}, 'name': 'animation', 'confidence': 0.9117749333381653, 'hint': None}
{'additional_properties': {}, 'name': 'fiction', 'confidence': 0.9060423970222473, 'hint': None}
{'additional_properties': {}, 'name': 'illustration', 'confidence': 0.8935807347297668, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.8558411598205566, 'hint': None}
{'additional_properties': {}, 'name': 'man', 'confidence': 0.8435943126678467, 'hint': None}
{'additional_properties': {}, 'name': 'cartoon', 'confidence': 0.6824444532394409, 'hint': None}

a woman holding a bag 0.36428138613700867

{'additional_properties': {}, 'name': 'human face', 'confidence': 0.9959616661071777, 'hint': None}
{'additional_properties': {}, 'name': 'clothing', 'confidence': 0.9890050888061523, 'hint': None}
{'additional_properties': {}, 'name': 'person', 'confidence': 0.9782501459121704, 'hint': None}
{'additional_properties': {}, 'name': 'wall', 'confidence': 0.9627124667167664, 'hint': None}
{'additional_properties': {}, 'name': 'indoor', 'confidence': 0.8897650241851807, 'hint': None}
{'additional_properties': {}, 'name': 'woman', 'confidence': 0.8343931436538696, 'hint': None}
{'additional_properties': {}, 'name': 'art', 'confidence': 0.6780273914337158, 'hint': None}
{'additional_properties': {}, 'name': 'design', 'confidence': 0.44485709071159363, 'hint': None}

qr code 0.4444420635700226

{'additional_properties': {}, 'name': 'text', 'confidence': 0.9777688980102539, 'hint': None}
{'additional_properties': {}, 'name': 'transport', 'confidence': 0.8670791387557983, 'hint': None}

In [258…

```python
import pandas as pd

column_names = ["tags", "frequency"]

df2 = pd.DataFrame(data = cnt[:15], columns = column_names)
df2

#Following is a table of the 15 most common tags of thumbnails of the 50 most popular videos in Taiwan
```

Out[258]:

	tags	frequency
0	person	42
1	clothing	36
2	human face	35
3	text	30
4	screenshot	25
5	man	17
6	woman	14
7	smile	11
8	indoor	11
9	news	8
10	girl	7
11	glasses	7
12	suit	7
13	outdoor	7
14	sign	6

Results:

From the above table, we can know almost all (42 out of 50) thumbnails of the viral videos contain humans. Another common thing in the thumbnails is the text.

Conclusion: YouTube發燒影片的另一個特徵是縮圖大部分都會有人（甚至大部分都會出現人臉），以及文字。

Please submit the PDF version of your notebook to NTU COOL before 10/6 (Friday).