```python
from googleapiclient.discovery import build
import json
import requests
import time
import pandas as pd
import re
import numpy as np
```

```python
# url_input = "https://www.youtube.com/watch?v=BaGgScV4NN8"
# url_input = "https://www.youtube.com/watch?v=Qr41mwb-oQk"
input_list = [
"https://www.youtube.com/watch?v=Qr41mwb-oQk",
"https://www.youtube.com/watch?v=m_LfH48sTmY",
"https://www.youtube.com/watch?v=LBukoM3CLic",
"https://www.youtube.com/watch?v=SY4Pl75BJPQ",
"https://www.youtube.com/watch?v=mL00hNBxTzU"
]
id_list=[]
for url in input_list:
    video_id_split =url.split('=')
    video_id=video_id_split[1]
    # print(video_id)
    id_list.append(video_id)
print(id_list)
```

```
['Qr41mwb-oQk', 'm_LfH48sTmY', 'LBukoM3CLic', 'SY4Pl75BJPQ', 'mL00hNBxTzU']
```

```python
def getCount(video_id):
  api_key = 'AIzaSyDWf_scubd7aDcx_lVcdf7aGFepzwyKSKI'
  url = 'https://www.googleapis.com/youtube/v3/videos?id='+video_id+'&key='+api_key+'&part=id,statistics'
  response_info=requests.get(url).json()

  # Contains all comments (both top-level comments and replies to those comments).
  all_comments = []
  # print(response_info)
  # Get the total (sum) of comments the video has:
  for comment_count in response_info['items']:
    total = int(comment_count['statistics']['commentCount'])

  # # Show the total amount of comments for the given video:
  print("Total comments for (" + video_id + "): " + str(total))
for id in id_list:
  getCount(id)
```

```
    Total comments for (Qr41mwb-oQk): 43
    Total comments for (m_LfH48sTmY): 97
    Total comments for (LBukoM3CLic): 1580
    Total comments for (SY4Pl75BJPQ): 1530
    Total comments for (mL00hNBxTzU): 22
```

```python
def getAllTopLevelCommentReplies(topCommentId, token):

  replies_response=youtube.comments().list(part='snippet',maxResults=100,parentId=topCommentId,pageToken=token).execute()

  for indx, reply in enumerate(replies_response['items']):
    all_comments.append(reply['snippet']['textDisplay'])

  if "nextPageToken" in replies_response:
    return getAllTopLevelCommentReplies(topCommentId, replies_response['nextPageToken'])
  else:
    return []

def get_comments(youtube, video_id, token):

  global all_comments
  totalReplyCount = 0
  token_reply = None

  if (len(token.strip()) == 0):
    all_comments = []

  if (token == ''):
    video_response=youtube.commentThreads().list(part='snippet',maxResults=100,videoId=video_id,order='relevance').execute()
  else:
    video_response=youtube.commentThreads().list(part='snippet',maxResults=100,videoId=video_id,order='relevance',pageToken=to
```

```python
    # Loop comments from the video:
    for indx, item in enumerate(video_response['items']):
      # Append coments:
      all_comments.append("COMMENT WITH " + str(item['snippet']['totalReplyCount']) + " replies: " + item['snippet']['topLevelCo

      # Get total reply count:
      totalReplyCount = item['snippet']['totalReplyCount']

      # If the comment has replies, get them:
      if (totalReplyCount > 0):
        # Get replies - first batch:
        replies_response=youtube.comments().list(part='snippet',maxResults=100,parentId=item['id']).execute()
        for indx, reply in enumerate(replies_response['items']):
          # Append the replies to the main array:
          all_comments.append((" "*2) + "=>FIRST CALLBACK REPLY: " + reply['snippet']['textDisplay'])

        # If the reply has a token for get more replies, loop those replies
        # and add those replies to the main array:
        while "nextPageToken" in replies_response:
          token_reply = replies_response['nextPageToken']
          replies_response=youtube.comments().list(part='snippet',maxResults=100,parentId=item['id'],pageToken=token_reply).exec
          for indx, reply in enumerate(replies_response['items']):
            all_comments.append((" "*4) + "==>WHILE GETTING REPLIES: " + reply['snippet']['textDisplay'])

    # Check if the video_response has more comments:
    if "nextPageToken" in video_response:
      return get_comments(youtube, video_id, video_response['nextPageToken'])
    else:
      # Remove empty elements added to the list "due to the return in both functions":
      all_comments = [x for x in all_comments if len(x) > 0]
      print("Fin")
      return []


all_comments=[]
qtyReplies = 0
qtyMainComments = 0

hmap = {}
youtube = build('youtube', 'v3',developerKey='AIzaSyDWf_scubd7aDcx_lVcdf7aGFepzwyKSKI')
for id in id_list:
  comments = get_comments(youtube,id,'')
  print(len(all_comments))
  hmap[id] = all_comments
# comments = get_comments(youtube,"mL00hNBxTzU",'')
# print(len(all_comments))
# Show results:
# print("All total comments obtained: "  + str(len(all_comments)))
print(hmap.keys())
```

```
    Fin
    38
    Fin
    80
    Fin
    1516
    Fin
    1128
    Fin
    19
    dict_keys(['Qr41mwb-oQk', 'm_LfH48sTmY', 'LBukoM3CLic', 'SY4Pl75BJPQ', 'mL00hNBxTzU'])
```

```python
print(hmap.keys())
# comment_df = pd.DataFrame(hmap[0])
# # print(hmap["Qr41mwb-oQk"])
# comment_df.head()
for i,key in enumerate(hmap.keys()):
    print(f"Video {i} Comments: \n")
    print(f"{hmap[key]} \n")
```

```
    dict_keys(['Qr41mwb-oQk', 'm_LfH48sTmY', 'LBukoM3CLic', 'SY4Pl75BJPQ', 'mL00hNBxTzU'])
    Video 0 Comments:

    ['COMMENT WITH 0 replies: You are truly inspirational to many ❤❤❤❤', 'COMMENT WITH 1 replies: He gives so much hope

    Video 1 Comments:

    ['COMMENT WITH 2 replies: R.I.P Kobe &amp; GiGi and everyone involved 🙏❤🕊🕊🕊🕊🕊🕊🕊🕊<br>Still feels unbelievabl

    Video 2 Comments:

    ['COMMENT WITH 496 replies: What&#39;s your all-time favorite Air Max sneaker?', '  =>FIRST CALLBACK REPLY: air max plus

    Video 3 Comments:
```

['COMMENT WITH 18 replies: Yes level the playing field for Woman. It's time to make sure Men Can dominate Woman's sports'

Video 4 Comments:

['COMMENT WITH 0 replies: Really cool, love the vision and idea behind this. Hopefully more people get on board with thes

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