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from googleapiclient.discovery import build
from googleapiclient.errors import HttpError
import json
import nltk
from nltk.tokenize import sent_tokenize, word_tokenize
from nltk.corpus import stopwords
from collections import Counter
import re
import matplotlib.pyplot as plt
from wordcloud import WordCloud
nltk.download('punkt')
nltk.download('stopwords')
def ytb_cnl_url(channel_id):
   api_key = ''
   youtube = build('youtube', 'v3', developerKey=api key)
   video urls = []
       request = youtube.channels().list(
           part='contentDetails',
            id=channel id
       response = request.execute()
       if 'items' not in response or not response['items']:
           print("No channel found or no items in response.")
            return []
       playlist id = response['items'][0]['contentDetails']['relatedPlaylists']['uploads']
       videos = []
       next page token = None
       while True:
           playlist items response = youtube.playlistItems().list(
               part='snippet',
               playlistId=playlist id,
               maxResults=50,
               pageToken=next page token
           ).execute()
            videos += playlist items response['items']
            next_page_token = playlist_items_response.get('nextPageToken')
            if not next_page_token:
               break
       for video in videos:
            video_urls.append({
                'URL': f"https://www.youtube.com/watch?v={video['snippet']['resourceId']['videoId']}",
                'Title': video['snippet']['title']
            })
   except HttpError as e:
       print(f"An HTTP error {e.resp.status} occurred:\n{e.content}")
   return video_urls
def get Comment For url(video urls):
   api key = 'AIzaSyALNzOqVyvFUlMiX8Md-fTyR8NBp6IiFZU'
   comment_text = []
   youtube = build('youtube', 'v3', developerKey=api key)
    for video in video_urls:
       video id = video['URL'].split('v=')[1]
       request = youtube.commentThreads().list(part="snippet", videoId=video_id, textFormat="plainText")
       try:
            response = request.execute()
            for item in response['items']:
               comment = item['snippet']['topLevelComment']['snippet']['textDisplay']
               comment_text.append(comment)
       except HttpError as e:
           error_content = json.loads(e.content.decode('utf-8'))
            error_reason = error_content.get('error', {}).get('errors', [{}])[0].get('reason')
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if error reason == "commentsDisabled":
                print(f"Comments are disabled for the video with ID {video_id}. Skipping...")
            else:
                print(f"An HTTP error {e.resp.status} occurred for video ID {video id}:\n{e.content.decode('utf-8')}")
    return comment text
def clean_comments(comment_text):
    nltk.download('punkt')
    nltk.download('stopwords')
    stop_words = set(stopwords.words('english'))
   cleaned_words = []
    for sentence in comment text:
        tokenized words = word tokenize(sentence)
        cleaned_words.extend([word for word in tokenized_words if word.lower() not in stop_words and word.isalpha()])
    return cleaned_words
def wordFrequency(cleaned_words):
    word_counts = Counter(cleaned_words)
    return word_counts
def barWordcloudFrequency(word counts) :
   wordcloud = WordCloud(width=800, height=400, background_color='white').generate_from_frequencies(word_counts)
    plt.figure(figsize=(10, 6))
   plt.imshow(wordcloud, interpolation='bilinear')
   plt.axis('off')
   plt.title('Word Cloud')
   plt.show()
   plt.figure(figsize=(10, 6))
   plt.bar(list(word counts.keys()), list(word counts.values()))
   plt.xlabel('Words')
   plt.ylabel('Frequency')
   plt.title('Word Frequencies')
   plt.xticks(rotation=45)
   plt.show()
video_urls = ytb_cnl_url( "UCcgVECVN4OKV6DH1jLkqmcA")
comments = get Comment For url(video urls)
words_ = clean_comments(comments)
frequency = wordFrequency(words )
print(barWordcloudFrequency(frequency))
print(words )
```

Word Cloud

