```
1 !pip install google-api-python-client
2 !pip install google-auth google-auth-oauthlib goog
3 !pip install textblob
```

Requirement already satisfied: google-api-python-client in /usr/local/lib/python3.10/dist-packages (2.84.0)
Requirement already satisfied: httplib2<1dev,>=0.15.0 in /usr/local/lib/python3.10/dist-packages (from google-api-python-client) (0
Requirement already satisfied: google-auth<3.0.0dev,>=1.19.0 in /usr/local/lib/python3.10/dist-packages (from google-api-python-clie
Requirement already satisfied: google-auth-httplib2>=0.1.0 in /usr/local/lib/python3.10/dist-packages (from google-api-python-client
Requirement already satisfied: google-api-core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.0,<3.0.0dev,>=1.31.5 in /usr/local/lib/python3.10/dist-p
Requirement already satisfied: uritemplate<5,>=3.0.1 in /usr/local/lib/python3.10/dist-packages (from google-api-python-client) (4.1
Requirement already satisfied: googleapis-common-protos<2.0.dev0,>=1.56.2 in /usr/local/lib/python3.10/dist-packages (from google-ap
Requirement already satisfied: protobuf!=3.20.0,!=3.20.1,!=4.21.0,!=4.21.1,!=4.21.2,!=4.21.3,!=4.21.4,!=4.21.5,<5.0.0.dev0,>=3.19.5
Requirement already satisfied: requests<3.0.0.dev0,>=2.18.0 in /usr/local/lib/python3.10/dist-packages (from google-api-core!=2.0.*,
Requirement already satisfied: cachetools<6.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from google-auth<3.0.0dev,>=1.19.0
Requirement already satisfied: pyasn1-modules>=0.2.1 in /usr/local/lib/python3.10/dist-packages (from google-auth<3.0.0dev,>=1.19.0
Requirement already satisfied: rsa<5,>=3.1.4 in /usr/local/lib/python3.10/dist-packages (from google-auth<3.0.0dev,>=1.19.0->google
Requirement already satisfied: pyparsing!=3.0.0,!=3.0.1,!=3.0.2,!=3.0.3,<4,>=2.4.2 in /usr/local/lib/python3.10/dist-packages (from
Requirement already satisfied: pyasn1<0.7.0,>=0.4.6 in /usr/local/lib/python3.10/dist-packages (from pyasn1-modules>=0.2.1->google-a
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0.dev0,>=2.18
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0.dev0,>=2.18.0->google-ap
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Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3.0.0.dev0,>=2.18.0->goo
Requirement already satisfied: google-auth in /usr/local/lib/python3.10/dist-packages (2.27.0)
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Requirement already satisfied: google-auth-httplib2 in /usr/local/lib/python3.10/dist-packages (0.1.1)
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Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.0.0->requests-oauthli
Requirement already satisfied: textblob in /usr/local/lib/python3.10/dist-packages (0.17.1)
Requirement already satisfied: nltk>=3.1 in /usr/local/lib/python3.10/dist-packages (from textblob) (3.8.1)
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (8.1.7)
Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (1.4.2)
Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (2024.5.15)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (4.66.4)
```

```
1 import os
2 import re
3 from googleapiclient.discovery import build
4 from textblob import TextBlob
5 from urllib.parse import urlparse, parse_qs
```

```
1 api_key = "AIzaSyBj8rDKssTZsVVWKUHXQ7X3Cninv6Hj6s0
```

```python
def get_youtube_comments(video_url, api_key):
    parsed_url = urlparse(video_url)
    video_id = parse_qs(parsed_url.query).get('v')

    if video_id:
        youtube = build("youtube", "v3", developer
        comments = []

        request = youtube.commentThreads().list(
            part="snippet",
            videoId=video_id[0],
            textFormat="plainText",
            maxResults=100  # Set the number of co
        )

        while request:
            response = request.execute()
            comments.extend([item["snippet"]["topL

            request = youtube.commentThreads().lis

        return comments
    else:
        print("Error: Video ID not found in the UR
        return []
```

```python
def analyze_sentiment(comment):
    analysis = TextBlob(comment)
    return analysis.sentiment.polarity

```

```
1  def categorize_comments(video_url, api_key):
2      comments = get_youtube_comments(video_url, api
3
4      # Categorize comments
5      positive_comments = 0
6      negative_comments = 0
7      neutral_comments = 0
8
9      for comment in comments:
10         sentiment_score = analyze_sentiment(commen
11         if sentiment_score > 0:
12             positive_comments += 1
13         elif sentiment_score < 0:
14             negative_comments += 1
15         else:
16             neutral_comments += 1
17
18     return positive_comments, negative_comments, n
```

```
1  video_url = "https://www.youtube.com/live/tReY3rLc
2  positive, negative, neutral = categorize_comments(
3  print("Positive Comments:", positive)
4  print("Negative Comments:", negative)
5  print("Neutral Comments:", neutral)
```

```
Error: Video ID not found in the URL.
Positive Comments: 0
Negative Comments: 0
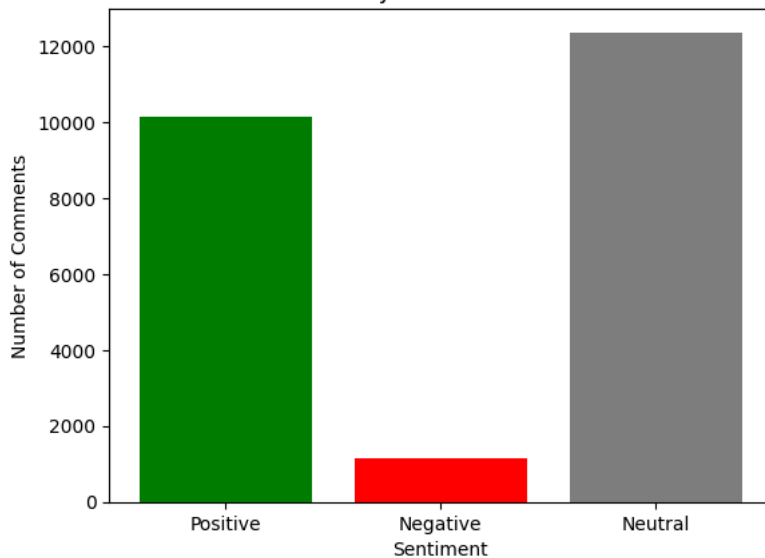Neutral Comments: 0
```

```
1  import matplotlib.pyplot as plt
```

```
1  sentiment_labels = ['Positive', 'Negative', 'Neutr
2  sentiment_counts = [positive, negative, neutral]
```

```
1  plt.bar(sentiment_labels, sentiment_counts, color=
2  plt.title('Sentiment Analysis of YouTube Comments'
3  plt.xlabel('Sentiment')
4  plt.ylabel('Number of Comments')
5  plt.show()
```

Sentiment Analysis of YouTube Comments

1 !pip install gradio

```
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib~=3.0->gradio) (2.
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas<3.0,>=1.0->gradio) (2023.4)
Requirement already satisfied: tzdata>=2022.1 in /usr/local/lib/python3.10/dist-packages (from pandas<3.0,>=1.0->gradio) (2024.1)
Requirement already satisfied: annotated-types>=0.4.0 in /usr/local/lib/python3.10/dist-packages (from pydantic>=2.0->gradio) (0.
Requirement already satisfied: pydantic-core==2.18.2 in /usr/local/lib/python3.10/dist-packages (from pydantic>=2.0->gradio) (2.1
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.10/dist-packages (from typer<1.0,>=0.12->gradio) (8.1.7)
Collecting shellingham>=1.3.0 (from typer<1.0,>=0.12->gradio)
  Downloading shellingham-1.5.4-py2.py3-none-any.whl (9.8 kB)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.10/dist-packages (from typer<1.0,>=0.12->gradio) (13.7.1)
Collecting starlette<0.38.0,>=0.37.2 (from fastapi->gradio)
  Downloading starlette-0.37.2-py3-none-any.whl (71 kB)
                                      ━━━━━━━━━━ 71.9/71.9 kB 10.6 MB/s eta 0:00:00
Collecting fastapi-cli>=0.0.2 (from fastapi->gradio)
  Downloading fastapi_cli-0.0.4-py3-none-any.whl (9.5 kB)
Collecting ujson!=4.0.2,!=4.1.0,!=4.2.0,!=4.3.0,!=5.0.0,!=5.1.0,>=4.0.1 (from fastapi->gradio)
  Downloading ujson-5.10.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (53 kB)
                                      ━━━━━━━━━━ 53.6/53.6 kB 8.2 MB/s eta 0:00:00
Collecting email_validator>=2.0.0 (from fastapi->gradio)
  Downloading email_validator-2.1.1-py3-none-any.whl (30 kB)
Collecting dnspython>=2.0.0 (from email_validator>=2.0.0->fastapi->gradio)
  Downloading dnspython-2.6.1-py3-none-any.whl (307 kB)
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Requirement already satisfied: attrs>=22.2.0 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=3.0->altair<6.0,>=4.2.0
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=
Requirement already satisfied: referencing>=0.28.4 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=3.0->altair<6.0,>
Requirement already satisfied: rpds-py>=0.7.1 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=3.0->altair<6.0,>=4.2.
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib~=3.0->g
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.10/dist-packages (from rich>=10.11.0->typer<1.0,>=
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in /usr/local/lib/python3.10/dist-packages (from rich>=10.11.0->typer<1.0,
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/dist-packages (from anyio->httpx>=0.24.1->gradio) (1.2
Collecting httptools>=0.5.0 (from uvicorn>=0.14.0->gradio)
  Downloading httptools-0.6.1-cp310-cp310-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (
                                      ━━━━━━━━━━ 341.4/341.4 kB 36.8 MB/s eta 0:00:00
Collecting python-dotenv>=0.13 (from uvicorn>=0.14.0->gradio)
  Downloading python_dotenv-1.0.1-py3-none-any.whl (19 kB)
Collecting uvloop!=0.15.0,!=0.15.1,>=0.14.0 (from uvicorn>=0.14.0->gradio)
  Downloading uvloop-0.19.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.4 MB)
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Collecting watchfiles>=0.13 (from uvicorn>=0.14.0->gradio)
  Downloading watchfiles-0.22.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.2 MB)
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Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests->huggingface-hu
Requirement already satisfied: mdurl~=0.1 in /usr/local/lib/python3.10/dist-packages (from markdown-it-py>=2.2.0->rich>=10.11.0->
Building wheels for collected packages: ffmpy
  Building wheel for ffmpy (setup.py) ... done
  Created wheel for ffmpy: filename=ffmpy-0.3.2-py3-none-any.whl size=5584 sha256=9042b35f8e8fd6b737b83c4593c2d699d2e00cdc2f273ef
  Stored in directory: /root/.cache/pip/wheels/bd/65/9a/671fc6dcde07d4418df0c592f8df512b26d7a0029c2a23dd81
Successfully built ffmpy
Installing collected packages: pydub, ffmpy, websockets, uvloop, ujson, tomlkit, shellingham, semantic-version, ruff, python-mult
  Attempting uninstall: typer
    Found existing installation: typer 0.9.4
    Uninstalling typer-0.9.4:
      Successfully uninstalled typer-0.9.4
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the
spacy 3.7.4 requires typer<0.10.0,>=0.3.0, but you have typer 0.12.3 which is incompatible.
weasel 0.3.4 requires typer<0.10.0,>=0.3.0, but you have typer 0.12.3 which is incompatible.
Successfully installed aiofiles-23.2.1 dnspython-2.6.1 email_validator-2.1.1 fastapi-0.111.0 fastapi-cli-0.0.4 ffmpy-0.3.2 gradio
```

```python
 1 import gradio as gr
 2 from urllib.parse import urlparse, parse_qs
 3 from googleapiclient.discovery import build
 4 from textblob import TextBlob
 5
 6 api_key = "AIzaSyBj8rDKssTZsVVWKUHXQ7X3Cninv6Hj6s6
 7
 8 def get_youtube_comments(video_url, api_key):
 9     parsed_url = urlparse(video_url)
10     video_id = parse_qs(parsed_url.query).get('v')
11
12     if video_id:
13         youtube = build("youtube", "v3", developer
14         comments = []
15
16         request = youtube.commentThreads().list(
17             part="snippet",
18             videoId=video_id[0],
19             textFormat="plainText",
20             maxResults=100  # Set the number of co
21         )
22
23         while request:
24             response = request.execute()
25             for item in response["items"]:
26                 comment = item["snippet"]["topLeve
27                 print(comment)
28                 comments.append(comment)
29
30             request = youtube.commentThreads().lis
31
32         return comments
33     else:
34         print("Error: Video ID not found in the UR
35         return []
36
37
38 def analyze_sentiment(comment):
```

```python
39      analysis = TextBlob(comment)
40      return analysis.sentiment.polarity
41
42
43  def categorize_comments(video_url, api_key):
44      comments = get_youtube_comments(video_url, api
45
46      # Categorize comments
47      positive_comments = 0
48      negative_comments = 0
49      neutral_comments = 0
50
51      for comment in comments:
52          sentiment_score = analyze_sentiment(commen
53          if sentiment_score > 0:
54              positive_comments += 1
55          elif sentiment_score < 0:
56              negative_comments += 1
57          else:
58              neutral_comments += 1
59
60      return positive_comments, negative_comments, r
61  def sentiment_analysis(video_url):
62      positive, negative, neutral = categorize_comme
63      return f"Positive Comments: {positive}, Negati
64
65  # Define Gradio interface
66  inputs = gr.Textbox(lines=5, label="Enter YouTube
67  output = gr.Textbox(label="Sentiment Analysis Resu
68
69  # Launch Gradio interface
70  gr.Interface(fn=sentiment_analysis, inputs=inputs,
71
```

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