```python
!pip install transformers datasets
!pip install networkx matplotlib
import networkx as nx
import matplotlib.pyplot as plt
!apt install graphviz libgraphviz-dev
!pip install pygraphviz

from sklearn.datasets import fetch_20newsgroups
!pip install sentence-transformers
from sentence_transformers import SentenceTransformer
!pip install faiss-cpu
import faiss
import numpy as np

!pip install plotly umap-learn
import umap
import plotly.express as px
```

⤓ Requirement already satisfied: transformers in /usr/local/lib/python3.11/dist-
    Collecting datasets
      Downloading datasets-3.5.1-py3-none-any.whl.metadata (19 kB)
    Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-pack
    Requirement already satisfied: huggingface-hub<1.0,>=0.30.0 in /usr/local/lib/
    Requirement already satisfied: numpy>=1.17 in /usr/local/lib/python3.11/dist-p
    Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/di
    Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.11/dist-p
    Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.11/
    Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-pack
    Requirement already satisfied: tokenizers<0.22,>=0.21 in /usr/local/lib/python
    Requirement already satisfied: safetensors>=0.4.3 in /usr/local/lib/python3.11
    Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.11/dist-pa
    Requirement already satisfied: pyarrow>=15.0.0 in /usr/local/lib/python3.11/di
    Collecting dill<0.3.9,>=0.3.0 (from datasets)
      Downloading dill-0.3.8-py3-none-any.whl.metadata (10 kB)
    Requirement already satisfied: pandas in /usr/local/lib/python3.11/dist-packag
    Collecting xxhash (from datasets)
      Downloading xxhash-3.5.0-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86
    Collecting multiprocess<0.70.17 (from datasets)
      Downloading multiprocess-0.70.16-py311-none-any.whl.metadata (7.2 kB)
    Collecting fsspec<=2025.3.0,>=2023.1.0 (from fsspec[http]<=2025.3.0,>=2023.1.0
      Downloading fsspec-2025.3.0-py3-none-any.whl.metadata (11 kB)
    Requirement already satisfied: aiohttp in /usr/local/lib/python3.11/dist-packa
    Requirement already satisfied: aiohappyeyeballs>=2.3.0 in /usr/local/lib/pytho
    Requirement already satisfied: aiosignal>=1.1.2 in /usr/local/lib/python3.11/d
    Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.11/dist
    Requirement already satisfied: frozenlist>=1.1.1 in /usr/local/lib/python3.11/

```
Requirement already satisfied: multidict<7.0,>=4.5 in /usr/local/lib/python3.1
Requirement already satisfied: propcache>=0.2.0 in /usr/local/lib/python3.11/c
Requirement already satisfied: yarl<2.0,>=1.17.0 in /usr/local/lib/python3.11/
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/py
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/pyth
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python
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Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dis
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-pack
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                                ───────────── 491.4/491.4 kB 7.0 MB/s eta 0:00:(
Downloading dill-0.3.8-py3-none-any.whl (116 kB)
                                ───────────── 116.3/116.3 kB 5.9 MB/s eta 0:00:(
Downloading fsspec-2025.3.0-py3-none-any.whl (193 kB)
                                ───────────── 193.6/193.6 kB 9.3 MB/s eta 0:00:(
Downloading multiprocess-0.70.16-py311-none-any.whl (143 kB)
                                ───────────── 143.5/143.5 kB 8.7 MB/s eta 0:00:(
Downloading xxhash-3.5.0-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_6
                                ───────────── 194.8/194.8 kB 11.9 MB/s eta 0:00:
Installing collected packages: xxhash, fsspec, dill, multiprocess, datasets
  Attempting uninstall: fsspec
    Found existing installation: fsspec 2025.3.2
    Uninstalling fsspec-2025.3.2:
      Successfully uninstalled fsspec-2025.3.2
ERROR: pip's dependency resolver does not currently take into account all the
gcsfs 2025.3.2 requires fsspec==2025.3.2, but you have fsspec 2025.3.0 which :
torch 2.6.0+cu124 requires nvidia-cublas-cu12==12.4.5.8; platform_system == "l
torch 2.6.0+cu124 requires nvidia-cuda-cupti-cu12==12.4.127; platform system =
```

The code below sets up the vector database with the 20newsgroup sets

```
newsgroups = fetch_20newsgroups(subset='all')
documents = newsgroups.data
```

```python
# Vectorization for search/indexing in a retrieval system (RAG)
# Change runtime to GPU to run this

model = SentenceTransformer('all-MiniLM-L6-v2')

vectors = model.encode(
    documents,
    batch_size=64,
    show_progress_bar=True,
    device='cuda'
)
```

```
---------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-4-0b5913f8bf4e> in <cell line: 0>()
      3 model = SentenceTransformer('all-MiniLM-L6-v2')
      4
----> 5 vectors = model.encode(
      6     documents,
      7     batch_size=64,
```

                              ↕ 8 frames

```
/usr/local/lib/python3.11/dist-packages/torch/cuda/__init__.py in
_lazy_init()
    317         if "CUDA_MODULE_LOADING" not in os.environ:
    318             os.environ["CUDA_MODULE_LOADING"] = "LAZY"
--> 319         torch._C._cuda_init()
    320         # Some of the queued calls may reentrantly call _lazy_init();
    321         # we need to just return without initializing in that case.

RuntimeError: Found no NVIDIA driver on your system. Please check that you
have an NVIDIA GPU and installed a driver from
http://www.nvidia.com/Download/index.aspx
```

```python
# SETTING UP A VECTOR DATABASE CALLED FAISS
# normalizes and then uses cosine similatiy for semantic similarity
faiss.normalize_L2(vectors)
index = faiss.IndexFlatIP(vectors.shape[1])
index.add(vectors)


# Vector Search
query = "Internet history"
query_vector = model.encode([query])
D, I = index.search(np.array(query_vector), k=5)
```

```
# Show top results
for i in I[0]:
    print(documents[i][:500])  # Preview first 500 chars of each match
    print("——————")
```

Reply-To: ld231782@longs.lance.colostate.edu
NNTP-Posting-Host: pad-thai.aktis.com
Summary: Email and account privacy, anonymity, file encryption,
 academic computer policies, relevant legislation and references,
 EFF, and other privacy and rights issues ass
——————
From: ld231782@longs.lance.colostate.edu (L. Detweiler)
Subject: Privacy & Anonymity on the Internet FAQ (3 of 3)
Supersedes: <net-privacy/part3_733153240@GZA.COM>
Organization: TMP Enterprises
Lines: 1201
Expires: 21 May 1993 04:00:06 GMT
Reply-To: ld231782@longs.lance.colostate.edu
NNTP-Posting-Host: pad-thai.aktis.com
Summary: Notes on the use, history, and value of anonymous Usenet
 posting and email remailing services
X-Last-Updated: 1993/03/04

Archive-name: net-privacy/part3
Last-modified
——————
From: ld231782@longs.lance.colostate.edu (L. Detweiler)
Subject: Privacy & Anonymity on the Internet FAQ (1 of 3)
Supersedes: <net-privacy/part1_733153240@GZA.COM>
Organization: TMP Enterprises
Lines: 1220
Expires: 21 May 1993 04:00:06 GMT
Reply-To: ld231782@longs.lance.colostate.edu
NNTP-Posting-Host: pad-thai.aktis.com
Summary: Email and account privacy, anonymous mailing and posting,
 encryption, and other privacy and rights issues associated with use
 of the Internet and global networks in
——————
From: fm91hn@hik.se (HENRIK NORSELL)
Subject: OPINION POLL!
Lines: 31
Organization: University of Kalmar

Net citizens!
This is a desperate try to save our last course in university.
We are writing a study about the Net, how it all started, about the people
living in it, however trying to explain the basics of how it all works.
That includes you, reader of this message.
We would be more than grateful if we could get your answers to the following
questions;
```

```
    1. For how many years have you known
    ──────
    From: atae@spva.ph.ic.ac.uk (Ata Etemadi)
    Subject: Re: Internet resources
    Nntp-Posting-Host: prawn.sp.ph
    Organization: Imperial College of Science, Technology, and Medicine, London, I
    Distribution: sci
    Lines: 31

    In article <C69C9K.9FA.1@cs.cmu.edu>, STK1203@VAX003.STOCKTON.EDU writes:
    -| I am taking a course entitled "Exploring Science Using Internet".
    -| For our final project, we are to find a compendium of Internet resources
    -| dealing with a science-related topic. I chose Astronomy. A
    ──────
```

```python
# Reduce to 2D
reducer = umap.UMAP(n_neighbors=15, min_dist=0.1, metric='cosine')
embedding = reducer.fit_transform(vectors)

# color by category
target_labels = [newsgroups.target_names[i] for i in newsgroups.target]

# Make hover text: show first 200 chars
hover_texts = [doc[:200].replace("\n", " ") for doc in documents]

fig = px.scatter(
    x=embedding[:, 0],
    y=embedding[:, 1],
    color=target_labels,
    hover_name=target_labels,
    hover_data={'Text': hover_texts},
    labels={'x': 'UMAP-1', 'y': 'UMAP-2'},
    title="Newsgroup Messages in Latent Space"
)


fig.update_traces(marker=dict(size=5, opacity=0.6))
fig.show()
```

```
/usr/local/lib/python3.11/dist-packages/sklearn/utils/deprecation.py:151: Futu
  warnings.warn(
```

Newsgroup Messages in Latent Space

The code below generates the online site with the rag search attached to an LLM and an interactive vector map.

```
# Our program requires a Princeton Sandbox API key stored in google collab secret
# If one is using a normal OpenAI API key, the client below has to be changed
# When this block of code runs, click on the ngrok link to access the program
# The site will stay on as long as the tunnel is open which is usually around an h
# Reference our slide videos for examples of use

!pip install dash
!pip install jupyter-dash
```

```python
!pip install dash pyngrok

from dash import Dash, html, dcc, Input, Output, State
import pandas as pd
from pyngrok import ngrok
import requests
from openai import AzureOpenAI
from google.colab import userdata



sandbox_key = userdata.get('sandbox_api')
if not sandbox_key:
  raise ValueError('API key not found')
else:
  print('API key found')
client = AzureOpenAI(
    api_key=sandbox_key,
    azure_endpoint="https://api-ai-sandbox.princeton.edu/",
    api_version="2024-02-01"
)


# Prepare document previews and labels
hover_texts = [doc[:200].replace('\n', ' ') for doc in documents]
labels = [newsgroups.target_names[i] for i in newsgroups.target]

# DataFrame for plotting
df = pd.DataFrame({
    'x': embedding[:, 0],
    'y': embedding[:, 1],
    'label': labels,
    'preview': hover_texts,
    'full_text': documents
})
df['id'] = df.index  # add unique ID for mapping

# UMAP Scatter Plot
fig = px.scatter(
    df,
    x='x',
    y='y',
    color='label',
    hover_data={'preview': True, 'id': True},
    labels={'x': 'UMAP-1', 'y': 'UMAP-2'},
    title='Newsgroups Latent Space'
)
```

```python
    fig.update_traces(marker=dict(size=5, opacity=0.6))

# Dash App Setup
app = Dash(__name__)
app.layout = html.Div([
    html.H1("Explore Newsgroup Messages"),

    dcc.Graph(id='scatter-plot', figure=fig, style={'height': '80vh'}),

    html.Div(id='clicked-text', style={
        'whiteSpace': 'pre-wrap',
        'border': '1px solid #ccc',
        'padding': '1em',
        'marginTop': '1em',
        'maxHeight': '300px',
        'overflowY': 'auto'
    }),

    html.H2("Ask a Question About the Newsgroups"),
    dcc.Input(id='query-input', type='text', placeholder='Type your question...',
    html.Button('Submit', id='submit-btn'),
    html.Div(id='rag-response', style={
        'whiteSpace': 'pre-wrap',
        'border': '1px solid #aaa',
        'padding': '1em',
        'marginTop': '1em',
        'backgroundColor': '#f8f8f8'
    })
])

# Callback to display full document text on click
@app.callback(
    Output('clicked-text', 'children'),
    Input('scatter-plot', 'clickData')
)
def display_text(clickData):
    if clickData is None:
        return "Click on a point to see the full message."
    doc_id = clickData['points'][0]['customdata'][1]
    return df.loc[doc_id, 'full_text']

# Callback to query the RAG sandbox API
@app.callback(
    Output('rag-response', 'children'),
    Input('submit-btn', 'n_clicks'),
```

```python
        State('query-input', 'value'),
        prevent_initial_call=True
    )
    def query_rag_api(n_clicks, query):
        if not query:
            return "Please enter a question."

        # Embed query
        query_vec = model.encode([query], normalize_embeddings=True).astype("float32"
        _, I = index.search(query_vec, 5)
        top_docs = [documents[i] for i in I[0]]

        # Compose strict grounded prompt
        context = "\n\n".join(top_docs)



        prompt = (
        "You are an assistant that answers ONLY based on the provided Usenet posts.\n"
        "Use the information from the posts as much as possible to answer the user's
        "If the posts are completely unrelated to the question, reply with 'Insuffici
        "Do not use your own outside knowledge unless making a minor and reasonable i
        f"Usenet Posts:\n{context}\n\n"
        f"User Question: {query}\n\n"
        "Answer:"
        )

        # Call Sandbox API via AzureOpenAI client
        try:
            response = client.chat.completions.create(
                model="gpt-4o",
                messages=[{"role": "user", "content": prompt}],
                temperature=0.4,
                max_tokens=300
            )
            answer = response.choices[0].message.content

            # Format and return both answer + sources
            source_snippets = "\n\n".join([
              f"Source {i+1}:\n{doc[:300]}...\n---" for i, doc in enumerate(top_docs)
            ])

            return f"**Answer:**\n{answer}\n\n**Retrieved Messages:**\n{source_snippet

        except Exception as e:
            return f"Sandbox API error: {str(e)}"
```

```
ngrok.set_auth_token("28aMaQDMNLKUxFRKxCeHry73z6C_hPwvPvfi1MfHUj5jk6NN")

# Close existing tunnels to avoid ERR_NGROK_324
for tunnel in ngrok.get_tunnels():
    ngrok.disconnect(tunnel.public_url)

# Expose port 8050
public_url = ngrok.connect(8050)
print(f"Dash app available at: {public_url}")

# Launch Dash app
app.run(debug=True)
```

```
Collecting dash
  Downloading dash-3.0.4-py3-none-any.whl.metadata (10 kB)
Collecting Flask<3.1,>=1.0.4 (from dash)
  Downloading flask-3.0.3-py3-none-any.whl.metadata (3.2 kB)
Collecting Werkzeug<3.1 (from dash)
  Downloading werkzeug-3.0.6-py3-none-any.whl.metadata (3.7 kB)
Requirement already satisfied: plotly>=5.0.0 in /usr/local/lib/python3.11/dist
Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.11
Requirement already satisfied: typing-extensions>=4.1.1 in /usr/local/lib/pyth
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-pack
Collecting retrying (from dash)
  Downloading retrying-1.3.4-py3-none-any.whl.metadata (6.9 kB)
Requirement already satisfied: nest-asyncio in /usr/local/lib/python3.11/dist-
Requirement already satisfied: setuptools in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: Jinja2>=3.1.2 in /usr/local/lib/python3.11/dist
Requirement already satisfied: itsdangerous>=2.1.2 in /usr/local/lib/python3.1
Requirement already satisfied: click>=8.1.3 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: blinker>=1.6.2 in /usr/local/lib/python3.11/dis
Requirement already satisfied: tenacity>=6.2.0 in /usr/local/lib/python3.11/di
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Requirement already satisfied: MarkupSafe>=2.1.1 in /usr/local/lib/python3.11/
Requirement already satisfied: zipp>=3.20 in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/pyth
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11
Requirement already satisfied: six>=1.7.0 in /usr/local/lib/python3.11/dist-pa
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                                        7.9/7.9 MB 106.6 MB/s eta 0:00:00
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                                        101.7/101.7 kB 9.8 MB/s eta 0:00:0
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                                        228.0/228.0 kB 21.7 MB/s eta 0:00:
```

```
                                                        220.0/220.0 KB 21.7 MB/S eta 0:00:
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  Attempting uninstall: Werkzeug
    Found existing installation: Werkzeug 3.1.3
    Uninstalling Werkzeug-3.1.3:
      Successfully uninstalled Werkzeug-3.1.3
  Attempting uninstall: Flask
    Found existing installation: Flask 3.1.0
    Uninstalling Flask-3.1.0:
      Successfully uninstalled Flask-3.1.0
Successfully installed Flask-3.0.3 Werkzeug-3.0.6 dash-3.0.4 retrying-1.3.4
Collecting jupyter-dash
  Downloading jupyter_dash-0.4.2-py3-none-any.whl.metadata (3.6 kB)
Requirement already satisfied: dash in /usr/local/lib/python3.11/dist-packages
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: flask in /usr/local/lib/python3.11/dist-package
Requirement already satisfied: retrying in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: ipython in /usr/local/lib/python3.11/dist-packa
Requirement already satisfied: ipykernel in /usr/local/lib/python3.11/dist-pac
Collecting ansi2html (from jupyter-dash)
  Downloading ansi2html-1.9.2-py3-none-any.whl.metadata (3.7 kB)
Requirement already satisfied: nest-asyncio in /usr/local/lib/python3.11/dist-
Requirement already satisfied: Werkzeug<3.1 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: plotly>=5.0.0 in /usr/local/lib/python3.11/dist
Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.11
Requirement already satisfied: typing-extensions>=4.1.1 in /usr/local/lib/pyth
Requirement already satisfied: setuptools in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: Jinja2>=3.1.2 in /usr/local/lib/python3.11/dist
Requirement already satisfied: itsdangerous>=2.1.2 in /usr/local/lib/python3.1
Requirement already satisfied: click>=8.1.3 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: blinker>=1.6.2 in /usr/local/lib/python3.11/dis
Requirement already satisfied: debugpy>=1.0 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: jupyter-client>=6.1.12 in /usr/local/lib/python
Requirement already satisfied: matplotlib-inline>=0.1 in /usr/local/lib/python
Requirement already satisfied: packaging in /usr/local/lib/python3.11/dist-pac
Requirement already satisfied: psutil in /usr/local/lib/python3.11/dist-packag
Requirement already satisfied: pyzmq>=17 in /usr/local/lib/python3.11/dist-pac
Requirement already satisfied: tornado>=6.1 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: traitlets>=5.1.0 in /usr/local/lib/python3.11/d
Collecting jedi>=0.16 (from ipython->jupyter-dash)
  Downloading jedi-0.19.2-py2.py3-none-any.whl.metadata (22 kB)
Requirement already satisfied: decorator in /usr/local/lib/python3.11/dist-pac
Requirement already satisfied: pickleshare in /usr/local/lib/python3.11/dist-p
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in
Requirement already satisfied: pygments in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: backcall in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: pexpect>4.3 in /usr/local/lib/python3.11/dist-p
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/pyth
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11
```

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Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11
Requirement already satisfied: six>=1.7.0 in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: parso<0.9.0,>=0.8.4 in /usr/local/lib/python3.1
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/di
Requirement already satisfied: jupyter-core>=4.6.0 in /usr/local/lib/python3.1
Requirement already satisfied: python-dateutil>=2.1 in /usr/local/lib/python3.
Requirement already satisfied: ptyprocess>=0.5 in /usr/local/lib/python3.11/di
Requirement already satisfied: tenacity>=6.2.0 in /usr/local/lib/python3.11/di
Requirement already satisfied: wcwidth in /usr/local/lib/python3.11/dist-packa
Requirement already satisfied: zipp>=3.20 in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: platformdirs>=2.5 in /usr/local/lib/python3.11/
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Downloading ansi2html-1.9.2-py3-none-any.whl (17 kB)
Downloading jedi-0.19.2-py2.py3-none-any.whl (1.6 MB)
                                         ━━━━━━━━━━━ 1.6/1.6 MB 22.4 MB/s eta 0:00:00
Installing collected packages: jedi, ansi2html, jupyter-dash
Successfully installed ansi2html-1.9.2 jedi-0.19.2 jupyter-dash-0.4.2
Requirement already satisfied: dash in /usr/local/lib/python3.11/dist-packages
Collecting pyngrok
  Downloading pyngrok-7.2.5-py3-none-any.whl.metadata (8.9 kB)
Requirement already satisfied: Flask<3.1,>=1.0.4 in /usr/local/lib/python3.11/
Requirement already satisfied: Werkzeug<3.1 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: plotly>=5.0.0 in /usr/local/lib/python3.11/dist
Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.11
Requirement already satisfied: typing-extensions>=4.1.1 in /usr/local/lib/pyth
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: retrying in /usr/local/lib/python3.11/dist-pack
Requirement already satisfied: nest-asyncio in /usr/local/lib/python3.11/dist-
Requirement already satisfied: setuptools in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: PyYAML>=5.1 in /usr/local/lib/python3.11/dist-p
Requirement already satisfied: Jinja2>=3.1.2 in /usr/local/lib/python3.11/dist
Requirement already satisfied: itsdangerous>=2.1.2 in /usr/local/lib/python3.1
Requirement already satisfied: click>=8.1.3 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: blinker>=1.6.2 in /usr/local/lib/python3.11/dis
Requirement already satisfied: tenacity>=6.2.0 in /usr/local/lib/python3.11/di
Requirement already satisfied: packaging in /usr/local/lib/python3.11/dist-pac
Requirement already satisfied: MarkupSafe>=2.1.1 in /usr/local/lib/python3.11/
Requirement already satisfied: zipp>=3.20 in /usr/local/lib/python3.11/dist-pa
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/pyth
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11
Requirement already satisfied: six>=1.7.0 in /usr/local/lib/python3.11/dist-pa
Downloading pyngrok-7.2.5-py3-none-any.whl (23 kB)
Installing collected packages: pyngrok
Successfully installed pyngrok-7.2.5
API key found
Dash app available at: NgrokTunnel: "https://9837-34-87-181-156.ngrok-free.app
```