

## **HomeWork**

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## Week 11 Homework 2: GenAI - Containerized video transcription and chat app

[https://hc.labnet.sfbu.edu/~henry/sfbu/course/cloud\\_computing/genai/slide/exercise\\_kubernetes.html](https://hc.labnet.sfbu.edu/~henry/sfbu/course/cloud_computing/genai/slide/exercise_kubernetes.html)

Q6 ==> GenAI - Containerized video transcription and chat app

This homework was done in terminal.

### Step 1: Open Terminal

### Step 2: Install Docker (if not already installed)

- Follow the installation instructions for your operating system from the official Docker : [Docker Hub](https://docs.docker.com/get-docker/)

### Step 3: Clone the Repository

~ git clone https://github.com/Davidnet/docker-genai.git

```
joyful@Lidias-MBP ~ % git clone https://github.com/Davidnet/docker-genai.git
Cloning into 'docker-genai'...
remote: Enumerating objects: 66, done.
remote: Counting objects: 100% (66/66), done.
remote: Compressing objects: 100% (43/43), done.
remote: Total 66 (delta 24), reused 60 (delta 20), pack-reused 0
Receiving objects: 100% (66/66), 114.38 KiB | 1.07 MiB/s, done.
Resolving deltas: 100% (24/24), done.
joyful@Lidias-MBP ~ %
```

### Step 4: Navigate to the Cloned Repository Directory

~ cd docker-genai

```
joyful@Lidias-MBP ~ % cd docker-genai
joyful@Lidias-MBP docker-genai %
```

**Step 5:** Create the .env file as per the instruction in the project:

This command creates a copy of the .env.example file and names it .env.

```
~ cp .env.example .env
```

The edit the .env file in any editor you want , in my case I am using vim.

```
~ vim .env
```

And then check this for a prerequisite and create a personal api key from OpenAI and/or pinecone :

- You have an [OpenAI API Key](#).
- Note:
  - OpenAI is a third-party hosted service and [charges](#) may apply.
- You have a [Pinecone API Key](#).
- You have installed the latest **version** of [Docker Desktop](#). And open and start the docker app in your desktop
- You have a [Git client](#).

Replace the API keys values from openAI and pinecone in the .env file as follows, it will show different from yours.

```
[joyful@Lidias-MBP docker-genai % cp .env.example .env
[joyful@Lidias-MBP docker-genai % vim .env
[joyful@Lidias-MBP docker-genai % cat .env
#-----
# OpenAI
#-----
OPENAI_TOKEN=sk-xIhQeSGutfRRx17UooucT3B1bkFJp2foADnPK1nfHm301tcn
# Replace your-api-key with your personal API key

#-----
# Pinecone
#-----
PINECONE_TOKEN=4fa55736-e9e7-4cee-bf93-145ed80677b3
# Replace your-api-key with your personal API key
[joyful@Lidias-MBP docker-genai %
```

**Step 6:** Build and Run the Application: This command builds the Docker images and starts the containers specified in the docker compose.yaml file.

```
~ docker compose up --build
```

```

joyful@Lidias-MBP docker-genai % docker compose up --build
[+] Building 2.4s (20/20) FINISHED                                docker:desktop-linux
=> [yt-whisper internal] load build definition from Dockerfile    0.0s
=> => transferring dockerfile: 1.83kB                             0.0s
=> [bot internal] load build definition from Dockerfile          0.0s
=> => transferring dockerfile: 1.83kB                             0.0s
=> [yt-whisper] resolve image config for docker.io/docker/dockerfile:1 2.1s
=> [yt-whisper auth] docker/dockerfile:pull token for registry-1.docker. 0.0s
=> CACHED [yt-whisper] docker-image://docker.io/docker/dockerfile:1@sha2 0.0s
=> [bot internal] load metadata for docker.io/library/python:3.11-slim 0.8s
=> [bot auth] library/python:pull token for registry-1.docker.io    0.0s
=> [bot internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                     0.0s
=> [yt-whisper internal] load .dockerignore                     0.0s
=> => transferring context: 2B                                     0.0s
=> [bot base 1/5] FROM docker.io/library/python:3.11-slim@sha256:3800945 0.0s
=> [yt-whisper internal] load build context                     0.0s
=> => transferring context: 179.45kB                             0.0s
=> [bot internal] load build context                             0.0s
=> => transferring context: 130.82kB                             0.0s
=> CACHED [yt-whisper base 2/5] WORKDIR /app                    0.0s
=> CACHED [yt-whisper base 3/5] RUN adduser --disabled-password    0.0s
=> CACHED [bot base 4/5] RUN --mount=type=cache,target=/root/.cache/pip 0.0s
=> CACHED [bot base 5/5] COPY . .                                0.0s
=> [bot] exporting to image                                     0.0s
=> => exporting layers                                           0.0s
=> => writing image sha256:01cc6298d7941c7663205877819e0e3d6890d47b80191 0.0s
=> => naming to docker.io/library/docker-genai-bot              0.0s
=> CACHED [yt-whisper base 4/5] RUN --mount=type=cache,target=/root/.cac 0.0s
=> CACHED [yt-whisper base 5/5] COPY . .                        0.0s
=> [yt-whisper] exporting to image                             0.0s
=> => exporting layers                                           0.0s
=> => writing image sha256:890d8fbb51e49f31216993a30c86bd2ef01a3346ee9f6 0.0s
=> => naming to docker.io/library/docker-genai-yt-whisper      0.0s

```

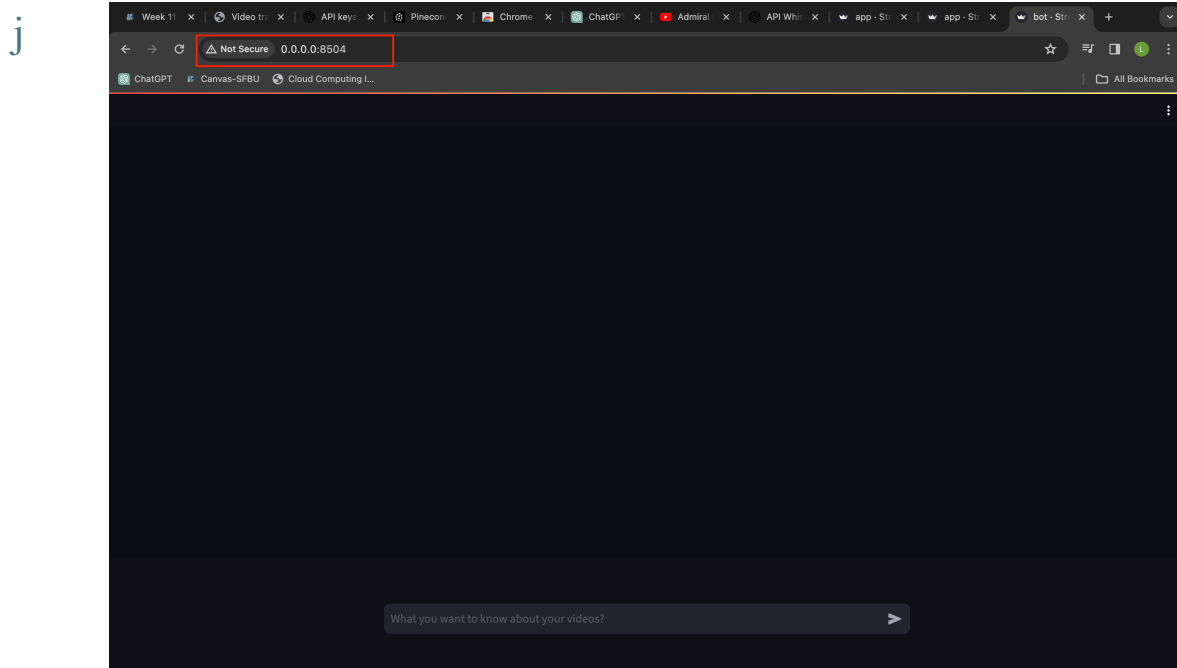
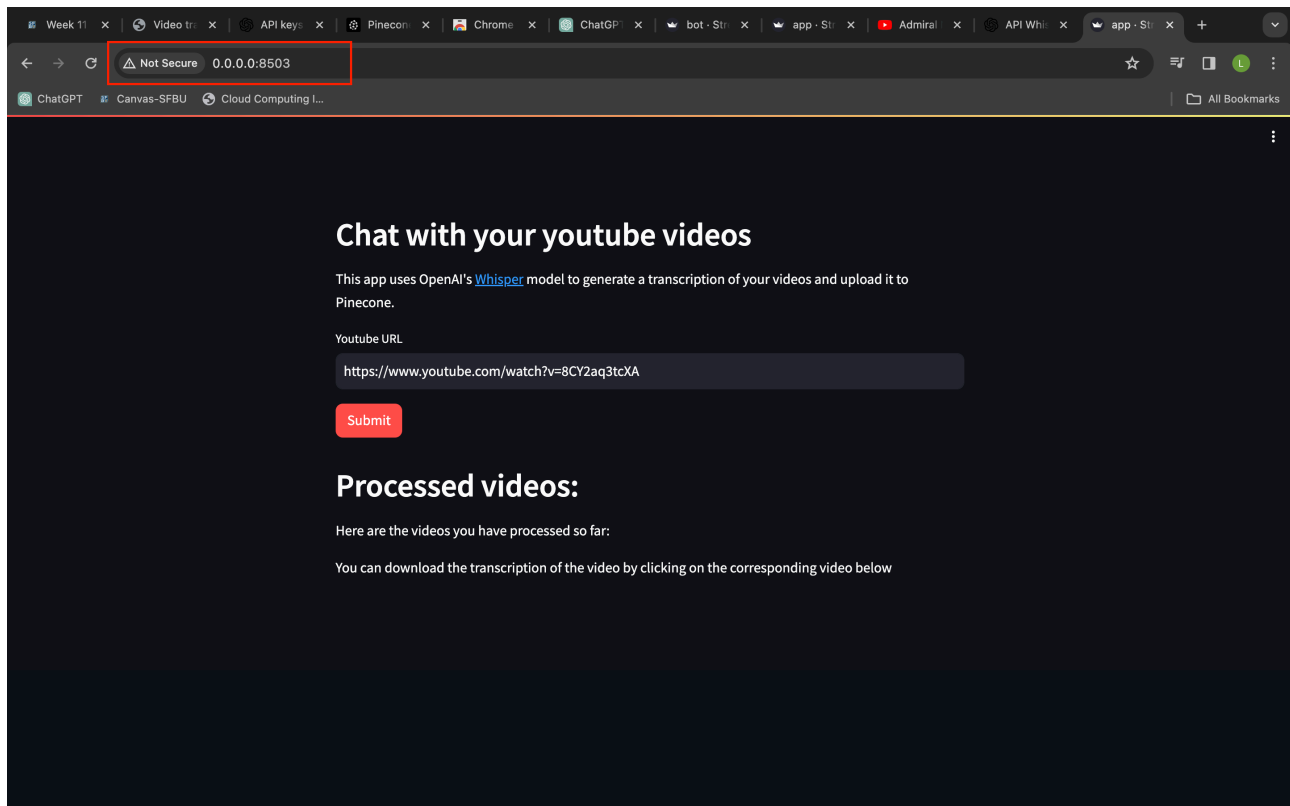
```

[+] Running 3/0
✓ Network docker-genai_default      Created          0.0s
✓ Container docker-genai-yt-whisper-1 Created          0.1s
✓ Container docker-genai-bot-1      Created          0.1s
Attaching to bot-1, yt-whisper-1
yt-whisper-1 |
yt-whisper-1 | Collecting usage statistics. To deactivate, set browser.gatherUsageStats to false.
bot-1        |
bot-1        | Collecting usage statistics. To deactivate, set browser.gatherUsageStats to false.
bot-1        |
yt-whisper-1 |
yt-whisper-1 |
yt-whisper-1 | You can now view your Streamlit app in your browser.
bot-1        |
bot-1        | You can now view your Streamlit app in your browser.
bot-1        |
yt-whisper-1 |
bot-1        | URL: http://0.0.0.0:8504
yt-whisper-1 | URL: http://0.0.0.0:8503
bot-1        |
yt-whisper-1 |

```

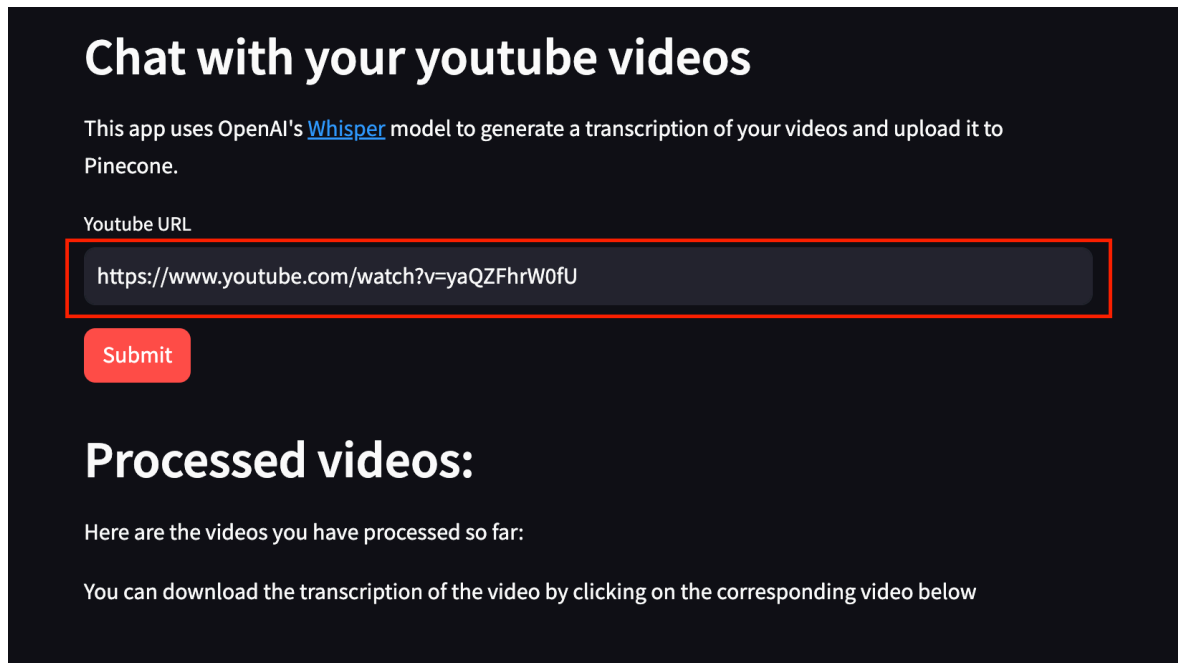
**Step 7:** . Can access the apps with as highlighted in the following screenshots

`http://0.0.0.0:8504` and `http://0.0.0.0:8503/`



**Step 8:** Once the application appears, in the Youtube URL field specify a Youtube video URL and select Submit. For this case, I have used this video of the admiral from YouTube and press submit for the video to be processed.

<https://www.youtube.com/watch?v=yaQZFhrW0fU>



## Chat with your youtube videos

This app uses OpenAI's [Whisper](#) model to generate a transcription of your videos and upload it to Pinecone.

Youtube URL

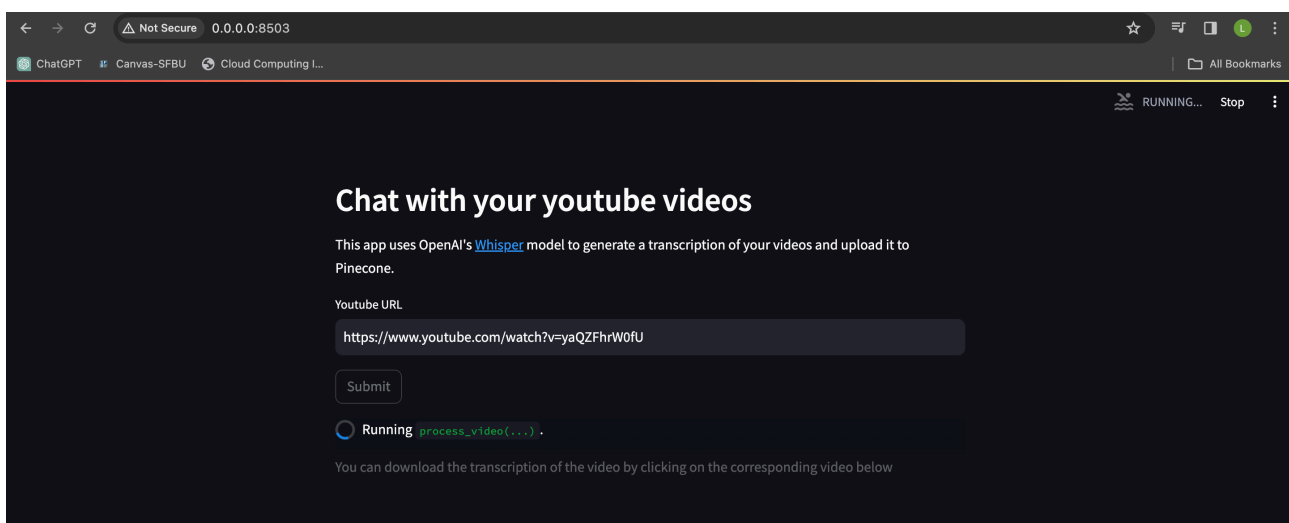
Submit

## Processed videos:

Here are the videos you have processed so far:

You can download the transcription of the video by clicking on the corresponding video below

After submitting it it might take sometime for it to process the video , it depends on the length of the video. So be patient.





**Step 9:** After its done being processed, it will show the processed video as follows:

**Processed videos:**

Here are the videos you have processed so far:

You can download the transcription of the video by clicking on the corresponding video below

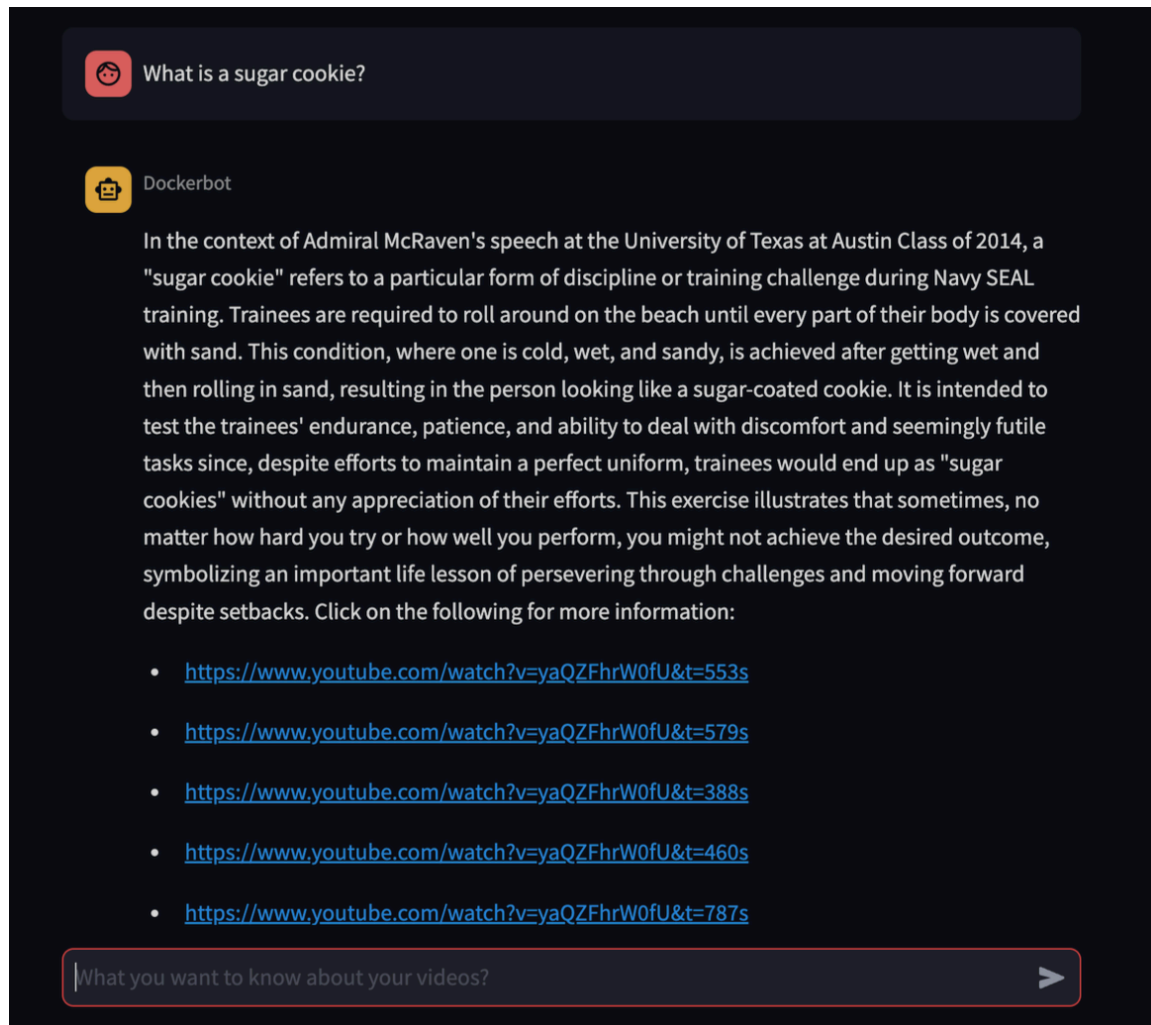
 **Admiral McRaven addresses the University of Texas at Austin Class of 2014**



[Download transcription](#)



**Step 10 :** ask in the Dockerbot, ask the bot about the information in the processed video, it will give you this information back. The video to text process was done by yt-whisper service along with the open AI.



**Step 11 :** In the terminal , you will see this time stamp , when the video transcription was done and which video it was.

```
yt-whisper-1 You can now view your Streamlit app in your browser.
yt-whisper-1 URL: http://0.0.0.0:8503
yt-whisper-1
yt-whisper-1 2024-04-04 05:39:33.369 Processing video: https://youtube.com/watch?v=8CY2aq3tcXA
yt-whisper-1 2024-04-04 05:39:39.633 File size(bytes): 16610558
yt-whisper-1 2024-04-04 05:39:39.634 File name: /tmp/tmpzr98ks43/Develop ML interactive gpu-workflows with Visual Studio Code Docker and Dockerhub.mp4
yt-whisper-1 2024-04-04 05:40:00.937 Processing video: https://youtube.com/watch?v=yaQZFhrW0fU
yt-whisper-1 2024-04-04 05:40:04.513 File size(bytes): 6940500
yt-whisper-1 2024-04-04 05:40:04.513 File name: /tmp/tmpx8oin4f1/Admiral McRaven addresses the University of Texas at Austin Class of 2014.mp4
yt-whisper-1 2024-04-04 05:40:56.198 Transcription done
```



**Step 12** : Stop the container by pressing “Control + c” on the keyboard

```
^CGracefully stopping... (press Ctrl+C again to force)
[+] Stopping 2/2
  ✓ Container docker-genai-yt-whisper-1   Stopped
  ✓ Container docker-genai-bot-1          Stopped
canceled
joyful@Lidias-MBP docker-genai %
```

**Github Link** : [https://github.com/LidiaYon/Cloud-Computing-Infrastructure-/tree/main/Kubernetes /Generative AI](https://github.com/LidiaYon/Cloud-Computing-Infrastructure-/tree/main/Kubernetes/Generative%20AI)