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## **Capture Video/Audio from Webcam or Microphone and Display on Multimedia Interface**

### **AIM:**

To develop a program that captures:

- **Live video** from the webcam
- **Live audio** from the microphone and displays/records them using a simple multimedia interface.

### **Procedure:**

1. Use OpenCV for video capture from webcam.
2. Use sounddevice and scipy or pyaudio for audio recording.
3. Display the live webcam feed in a window.
4. Optionally save the recorded video/audio to a file.
5. Integrate into a basic Python GUI using tkinter.

### **Program:**

```
import cv2
import sounddevice as sd
from scipy.io.wavfile import write
import threading
import tkinter as tk

# Audio recording function
def record_audio():
    duration = 5 # seconds
    fs = 44100 # sampling rate
```

```

print("Recording Audio...")
audio = sd.rec(int(duration * fs), samplerate=fs, channels=2)
sd.wait() # wait until recording is finished
write('recorded_audio.wav', fs, audio)
print("Audio recording saved.")

# Video capture function
def capture_video():
    cap = cv2.VideoCapture(0)
    print("Press 'q' to stop video.")
    while True:
        ret, frame = cap.read()
        if not ret:
            break
        cv2.imshow('Webcam Feed', frame)
        if cv2.waitKey(1) & 0xFF == ord('q'):
            break
    cap.release()
    cv2.destroyAllWindows()

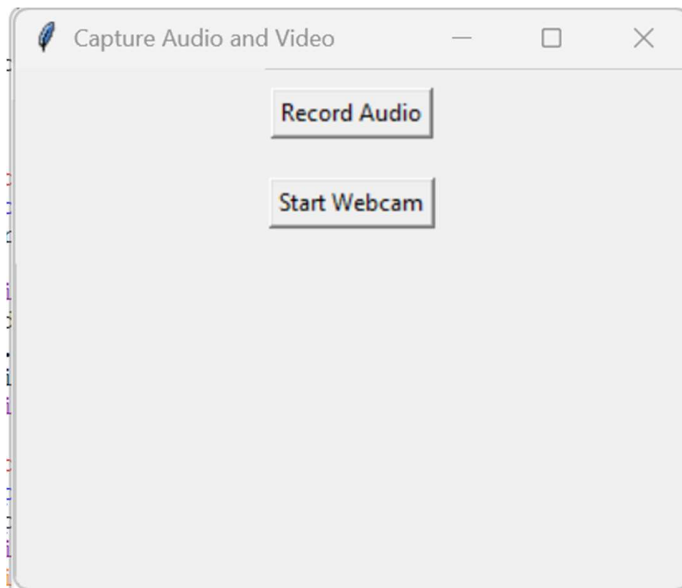
# GUI Setup
window = tk.Tk()
window.title("Capture Audio and Video")

btn_audio = tk.Button(window, text="Record Audio", command=lambda:
threading.Thread(target=record_audio).start())

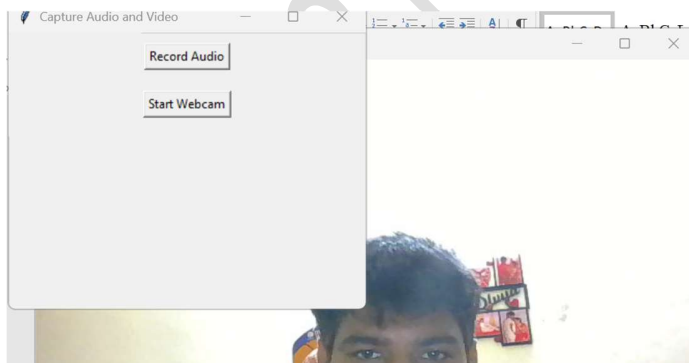
btn_video = tk.Button(window, text="Start Webcam", command=lambda:
threading.Thread(target=capture_video).start())

btn_audio.pack(pady=10)
btn_video.pack(pady=10)
window.mainloop()

```



```
===== RESTART: C:/Users/dell/OneDrive/
=====
Recording Audio...
Audio recording saved.
Press 'q' to stop video.
Recording Audio...
Audio recording saved.
```



### Result:

Live video and audio were successfully captured using webcam and microphone and displayed/saved through a multimedia interface.