

1. Taking User Input

- **video_name:** The user is asked to enter the name of the video file they want to play, including its extension (e.g., example.mp4).
 - **video_directory_guess:** The user provides the directory path where they think the video is stored. This is used to search for the file.
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2. Function: find_the_video

This function searches for the video file in the specified directory.

- **What it does:**
 - It scans through all subdirectories in the provided directory path.
 - It compares every file's name with the video_name provided by the user.
 - If a match is found, it saves the full file path in a list called files_found.
 - **Returns:**
 - The first matching file's path (if found).
 - None if no matching file is found.
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3. Checking if the Video Exists

- If the function find_the_video returns a valid path (i.e., the video is found), the program proceeds to play the video.
 - If the video is not found, the program prints an error message and exits gracefully.
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4. Changing the Working Directory

- If the video is found, the program changes the working directory to the folder containing the video. This ensures the program operates in the correct directory.
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5. Function: PlayVideo

This function is responsible for playing the video and its audio.

- **How it works:**
 - **Video Capture:** It uses cv2.VideoCapture to read the video file frame by frame.
 - **Audio Handling:** The MediaPlayer from ffpypyplayer is used to play the audio alongside the video.

- **Frame Loop:** A while loop continuously reads and displays each video frame until:
 - The video ends (grabbed becomes False).
 - The user presses the 'q' key to quit.
 - **Synchronizing Audio and Video:** It ensures that the video and audio remain in sync by fetching the audio frame (audio_frame) in the loop.
 - **Ending the Playback:**
 - When the video finishes or the user presses 'q', the program releases the video resources and closes the video display window.
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6. Handling Missing Files

- If the video is not found, the program prints:

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File not found. Please check the name or directory.

Exiting program. File not found.

- This prevents errors like trying to play a file that doesn't exist.
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Simplified Workflow

1. Ask the user for the video name and directory.
 2. Search for the video in the specified directory.
 3. If the video is found:
 - Change to its directory.
 - Play the video with synchronized audio.
 4. If the video is not found, show an error and exit.
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Who Can Use This Program?

- This program is designed for people who want to:
 - Play videos programmatically.
 - Learn how to use OpenCV and ffmpeg for video and audio playback.