7)Perform basic video processing operations on the captured video. Read captured video in python and display the video, in slow motion and in fast motion

CODE:

```
import cv2


# Function to display the video in real-time
def play_video(video_path, speed_factor=1):
    # Open the video file
    cap = cv2.VideoCapture(video_path)

    # Check if video opened successfully
    if not cap.isOpened():
        print("Error: Could not open video file")
        return

    # Get video properties (frame rate, frame count)
    fps = cap.get(cv2.CAP_PROP_FPS)
    total_frames = int(cap.get(cv2.CAP_PROP_FRAME_COUNT))

    # Loop through all frames
    while cap.isOpened():
        ret, frame = cap.read()
        if not ret:
            break

        # Display the frame
        cv2.imshow('Video', frame)

        # Slow down or speed up the video by adjusting the delay
        delay = int(1000 / (fps * speed_factor))  # Delay in milliseconds
```

```
        if cv2.waitKey(delay) & 0xFF == ord('q'):  # Press 'q' to quit
            break

    # Release the video capture object
    cap.release()
    cv2.destroyAllWindows()

# Path to the video file
video_path =r"C:\Users\harik\Downloads\CV LAB\mountain video.mp4"  # Replace with your video file path

# Play the video in real-time
print("Playing video in normal speed...")
play_video(video_path, speed_factor=1)

# Play the video in slow motion (1/2 speed)
print("Playing video in slow motion...")
play_video(video_path, speed_factor=0.5)

# Play the video in fast motion (2x speed)
print("Playing video in fast motion...")
play_video(video_path, speed_factor=2)
```

```
C:\Users\harik\Downloads\CV LAB>cd  C:\Users\harik\Downloads\CV LAB

C:\Users\harik\Downloads\CV LAB>python capturevideos.py
Playing video in normal speed...
Playing video in slow motion...
Playing video in fast motion...
```

OUTPUT: