

DSA0210 Computer Vision with Open CV LAB Experiments

Experiment- 10: Perform transformation using Homography matrix.

PROGRAM:

```
import cv2
import numpy as np
import matplotlib.pyplot as plt

# Read the input image
img = cv2.imread(r"D:\New Folder\input.jpeg")

# Check if image is loaded
if img is None:
    raise FileNotFoundError("Image not found. Check the file path.")

# Get image dimensions
height, width = img.shape[:2]

# Define four points in the original image
src_pts = np.float32([
    [100, 100],
    [width - 100, 100],
    [100, height - 100],
    [width - 100, height - 100]
])

# Define four points in the destination image
dst_pts = np.float32([
    [0, 0],
```

```
[width, 0],  
[0, height],  
[width, height]  
])  
  
# Compute homography matrix  
H, status = cv2.findHomography(src_pts, dst_pts)  
  
# Apply homography transformation  
homography_image = cv2.warpPerspective(img, H, (width, height))  
  
# Display images  
plt.figure(figsize=(8, 4))  
  
plt.subplot(1, 2, 1)  
plt.imshow(cv2.cvtColor(img, cv2.COLOR_BGR2RGB))  
plt.title("Original Image")  
plt.axis("off")  
  
plt.subplot(1, 2, 2)  
plt.imshow(cv2.cvtColor(homography_image, cv2.COLOR_BGR2RGB))  
plt.title("Homography Transformed Image")  
plt.axis("off")  
  
plt.tight_layout()  
plt.show()
```

OUTPUT:

