

## 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:

