14. Perform transformation using Homography matrix

Program

import cv2  
import numpy as np  
  
# Load the source image  
source\_image = cv2.imread("C:/Users/sidda/OneDrive/Desktop/py/pexels-eberhard-grossgasteiger-534164.jpg")  
  
# Load the destination image  
destination\_image = cv2.imread("C:/Users/sidda/OneDrive/Desktop/py/pexels-benjamin-suter-3617500.jpg")  
  
# Corresponding points in the source and destination images  
source\_points = np.array([[0, 0], [source\_image.shape[1], 0], [source\_image.shape[1], source\_image.shape[0]], [0, source\_image.shape[0]]], dtype=np.float32)  
destination\_points = np.array([[100, 100], [300, 100], [300, 300], [100, 300]], dtype=np.float32)  
  
# Calculate the homography matrix  
homography\_matrix, \_ = cv2.findHomography(source\_points, destination\_points)  
  
# Apply the transformation  
transformed\_image = cv2.warpPerspective(source\_image, homography\_matrix, (destination\_image.shape[1], destination\_image.shape[0]))  
  
# Display the transformed image  
cv2.imshow('Transformed Image', transformed\_image)  
cv2.waitKey(0)  
cv2.destroyAllWindows()  
  
# Save the transformed image  
cv2.imwrite('transformed\_image.jpg', transformed\_image)

output

