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import cv2
import numpy as np
from google.colab import files
from google.colab.patches import cv2_imshow

uploaded = files.upload()
img_path = next(iter(uploaded))
img = cv2.imdecode(np.frombuffer(uploaded[img_path], np.uint8), cv2.IMREAD_COLOR)
rows, cols = img.shape[:2]

src_pts = np.float32([[100, 100], [500, 100], [100, 400], [500, 400]])
dst_pts = np.float32([[0, 0], [cols, 0], [0, rows], [cols, rows]])

A = []
for i in range(4):
    x, y = src_pts[i][0], src_pts[i][1]
    x_p, y_p = dst_pts[i][0], dst_pts[i][1]
    A.append([-x, -y, -1, 0, 0, 0, x*x_p, y*x_p, x_p])
    A.append([0, 0, 0, -x, -y, -1, x*y_p, y*y_p, y_p])
A = np.array(A)

U, S, Vt = np.linalg.svd(A)
H = Vt[-1].reshape(3, 3)

H /= H[2, 2]

warped_img = cv2.warpPerspective(img, H, (cols, rows))

print("Original Image:")
cv2_imshow(img)
print("Transformed Image (DLT Homography):")
cv2_imshow(warped_img)

```



Choose Files i15.PNG

- **i15.PNG**(image/png) - 273421 bytes, last modified: 5/7/2025 - 100% done
- Saving i15.PNG to i15.PNG
Original Image:



Transformed Image (DLT Homography):



