11.Perform a 180-degree rotation clockwise along the y-axis for the given image

**AIM:**

To perform a 180-degree clockwise rotation along the Y-axis for a given image using Python.

**PROCEDURE:**

1. Install OpenCV if not already installed using
2. Import the cv2 module.
3. Read the input image using cv2.imread().
4. Flip the image horizontally using cv2.flip(image, 1), which mirrors the image along the Y-axis.
5. Rotate the image by 180 degrees using cv2.rotate(image, cv2.ROTATE\_180).
6. Display the original and transformed images using cv2.imshow().
7. Save the transformed image using cv2.imwrite(), if needed.
8. Wait for a key press and close all image windows using cv2.waitKey(0) and cv2.destroyAllWindows().

**PROGRAM:**

import cv2

image = cv2.imread("image.jpg")

flipped\_image = cv2.flip(image, 1)

rotated\_image = cv2.rotate(flipped\_image, cv2.ROTATE\_180)

cv2.imshow("Original Image", image)

cv2.imshow("Rotated 180-degree Clockwise Along Y-axis", rotated\_image)

cv2.imwrite("rotated\_image.jpg", rotated\_image)

cv2.waitKey(0)

cv2.destroyAllWindows()

**INPUT:**



**OUTPUT:**



**RESULT :**

The program successfully performs a 180-degree clockwise rotation along the Y-axis on the given image, displays it, and saves it as "rotated\_image.jpg".