# -\*- coding: utf-8 -\*-

"""

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@author: eskimox

"""

import numpy as np

import matplotlib.pyplot as plt

a = np.array([[1,1,1,1,1,1,0,1,1,0,1,1,1,1,1,1,1,1,1,1,1,1,1,1,0,1,1,1,1,1,1,1,1,1,1],

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#Function to change color

def change\_color(matriz):

#Copies matrix into a new one

b = np.copy(matriz)

#Loop through the matrix

for x in range(0,len(b)):

for y in range(0,len(b)):

#Check if an element has a 1 in it and change it to 0

if b[x][y] == 1:

b[x][y] = 0

#Otherwise change it to a 1

else:

b[x][y] = 1

return b

#Function to rotate to the left

def rotateiz(matriz):

b = np.rot90(matriz)

return b

#Function to rotate to the right

def rotateright(matriz):

#Actually rotates to the left 3 times

b = np.rot90(matriz,3)

return b

#Function to reflect on the y axis

def reflectony(matriz):

b = np.flip(matriz)

return b

#Title of the app

print("Let's edit an image!")

#Loop that lets the user to continually give inputs

while True:

#The input of the user

choice = input(" - Type 1 to change the color\n - Type 2 to rotate it to the left\n - Type 3 to rotate it to the right\n - Type 4 to reflect it on the y axis\n - Type 5 to exit\n\n--> ")

#For every input a function is called, the loop breaks or a message is shown

#Breaks the loop is the input is 5

if choice == "5":

break

#Changes color if input is 1

elif choice == "1":

print(change\_color(a))

#Rotates to the left if input is 2

elif choice == "2":

print(rotateiz(a))

#Rotates to the right if the input is 3

elif choice == "3":

print(rotateright(a))

#Reflect on y axis if the input is 4

elif choice == "4":

print(reflectony(a))

#If any other input is given, the program outputs invalid input

else:

print("Invalid input")

References

Flip: <https://docs.scipy.org/doc/numpy/reference/generated/numpy.flip.html>

Rotate: <https://www.w3resource.com/numpy/manipulation/rot90.php>

Copy an array: <https://onlinecoursetutorials.com/numpy/how-to-copy-numpy-arrays-into-another-array-using-numpy-copy-function/>