

Part1

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使用 Python , OpenCV 完成

(a)



(b)



(c)



Part2

利用線上軟體 photopea 完成(<https://www.photopea.com/>)

(d)



(e)



(f)



(a)

```
import cv2
img = cv2.imread('lena.bmp')
image = cv2.imread('lena.bmp')
row,col,typ = img.shape
for i in range(0,row):
    for j in range(0,col):
        image[i][j] = img[row-i-1][j]
cv2.imshow('vetical', image)
cv2.imwrite('vetical.jpg', image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

(b)

```
import cv2
img = cv2.imread('lena.bmp')
image = cv2.imread('lena.bmp')
row,col,typ = img.shape
for i in range(0,row):
    for j in range(0 , col):
        image[i][j] = img[i][col-j-1]
cv2.imshow('horizontal', image)
cv2.imwrite('horizontal.jpg', image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

(c)

```
import cv2
img = cv2.imread('lena.bmp')
image = cv2.imread('lena.bmp')
row,col,typ = img.shape
for i in range(0,row):
    for j in range(0 , col):
        image[i][j] = img[col-j-1][row-i-1]
cv2.imshow('diagonal flip', image)
cv2.imwrite('diagonal flip.jpg', image)
cv2.waitKey(0)
cv2.destroyAllWindows()
```