Computer Vision Homework #1

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The following picture might be resized when showed in pdf file, so their original image files were attahced to my folder by me.

Part 1	Part 2
upside down	45^o rotate
	
right side left	shrink in
	

diagonally rotate	binarized at 128
	

The code and methods I used

Part 1: Python skimage library

> In this part , I dealt with `lena.bmp` by using `skimage.io` and make it subscriptable as a two dimensional-list. By doing so, the work for editing pixels is easy for `Python`'s certain syntax such as `:`, `[]` , and `for`.

```
from skimage import io
# reading file
lena = io.imread("lena.bmp")
io.imshow(lena)
lena.shape
print(lena)
# upside down
lena_upside_down = lena.copy()[::-1]
io.imshow(lena_upside_down)
# right side left
lena_right_side_left = lena.copy()
for i in range(len(lena_right_side_left)):
    lena_right_side_left[i] = lena_right_side_left[i][::-1]
io.imshow(lena_right_side_left)
# diagonally rotate
lena_diagonally_rotate = lena.copy()
for i in range(len(lena_diagonally_rotate)):
    for j in range(len(lena_diagonally_rotate[i])):
        lena_diagonally_rotate[i][j] = lena[j][i]
io.imshow(lena_diagonally_rotate)
# save
io.imsave("lena_upside_down.png", lena_upside_down)
io.imsave("lena_right_side_left.png", lena_right_side_left)
io.imsave("lena_diagonally_rotate.png", lena_diagonally_rotate)
```

Part 2: Photoshop

> 這部分的圖都要先把圖片複製到一個新的ps檔案上才能開始編輯，否則圖層會被鎖住不能動。

45^0 rotate

`影像` > `影像旋轉` > `任意` > 改成45度即可

Shrink In

`影像` > `影像尺寸` > 把尺寸都調成256

Binarize at 128

1. `影像` > `模式` > `灰階`
2. `影像` > `調整` > `臨界值` > 調成128