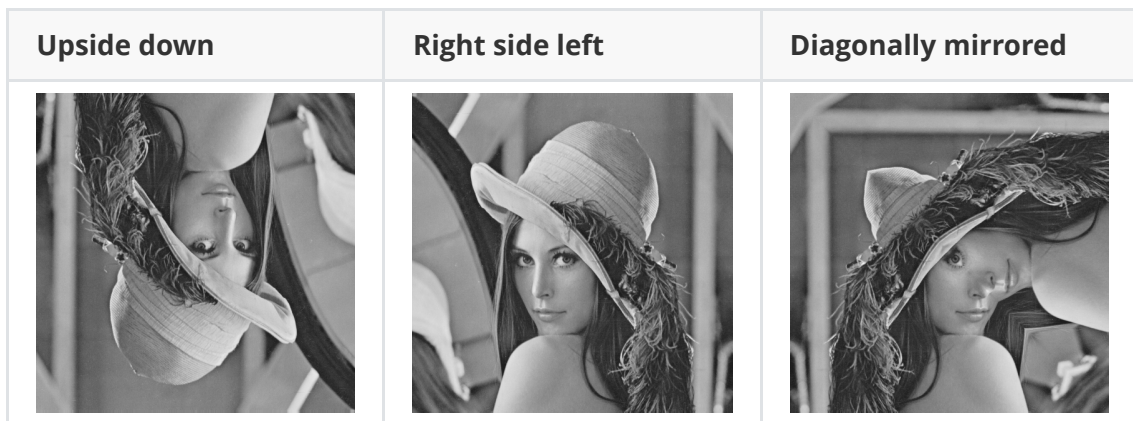


# Computer Vision Homework #1

資工四 b05902115 陳建丞

## • Result

### ◦ Part 1



### ◦ Part 2



- Note : The size of the image above has been revised. original result image can be found in the homework folder.

## • Implementation

### ◦ Part1

In this part, I use `skimage` toolkit to deal with the io of the images. The reason I choose `skimage` over `OpenCV` is that `skimage` is more simple to handle the basic image processing. Next, I can easily use basic python syntax like `for`, `:`, `[]` to operate the process.

0. Preprocess

```
from skimage import io

lena = io.read('lena.bmp')
```

#### 1. Upside down

```
lena_upside_down = lena.copy()[::-1]
```

#### 2. 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]
```

#### 3. Diagonally mirrored

```
lena_diagonally_mirrored = lena.copy()
for i in range(len(lena_diagonally_mirrored)):
    for j in range(len(lena_diagonally_mirrored)):
        lena_diagonally_mirrored[i][j] = lena_diagonally_mirrored[j][i]
```

### ◦ Part2

In part 2, I use **Photoshop** to process the image.

1. Rotate 45 degree: 影像 > 影像旋轉 > 任意 > 45度
2. Shrink in half: 影像 > 影像尺寸 > 都調成256
3. Binarize at 128: 影像 > 調整 > 臨界值 > 128