# Part 1.

* I use python (PIL) to do this work.
* In line 12-14, I declare three Image to handle output image.
* In line 16-21, I use a nested for loop to vertically/ horizontally/ diagonally flip the image.
* In line 19, the pixel in row i should go to row (image\_height-i-1).
* In line 20, the pixel in column j should go to column (image\_width-j-1).
* In line 21, the pixel with position (i, j) should go to position (j, i).

## Code

## 

# Part 2. Use Photoshop and Word

|  |
| --- |
| d |
|  |
| e. change the height/ width to 9.03 |
|  |
| f |
|  |

# Result

|  |  |  |
| --- | --- | --- |
| a | b | c |
| upside_down_lena | right_side_left_lena | C:\Users\naive\AppData\Local\Microsoft\Windows\INetCache\Content.Word\diagonally_flip_lena.bmp |
| d | e | f |
| C:\Users\naive\AppData\Local\Microsoft\Windows\INetCache\Content.Word\rotate_lena_45_degrees_clockwise.bmp | shrink_lena_in_half | binarize_lena_at_128 |