original image

| Part1.(a) | Part1.(b) | Part1.(c) |
|---|---|---|
|  |  |  |
| Part2.(d) | Part2.(e) | Part2.(f) |
|  |  |  |

**The difference between version 1 and 2 is the rotating direction in part2.(d)**

"python R11922150_HW1.py" to run the program.

In this program, I define 7 functions, 6 of which are corresponding to 6 tasks, and the last one is a show function to show an image. The program will first show the six images which are respectively generated by each function, then write them into six image files.

Among these six tasks, (a),(b),(c), and (f) tasks can all be done by easy for loops and computation. In (d) task, sin and cos 45 degrees are not integers which makes the task hard to implement, so I choose to use scipy.ndimage function - rotate to solve it. As for the (e) task, I'm not sure which pixel we should choose during sampling the pixels (max/min/average/random/or else?), so I choose to use the resize function in cv2 to solve it.