

# 電腦視覺 HW5

B05902011 資工四 梁振寧

source code : src/img\_process.py

using language : python

using material : numpy, PIL

\* following images are resized to fit in the page

## (a). Dilation



src/dil\_gray.png

## (b). Erosion



src/ero\_gray.png

## (c). Opening



src/open\_gray.png

## (d). Closing



src/close\_gray.png

For dilation and erosion, the implementation is similar to homework 4, but now the grayscale value is set to be the maxima and minima for dilation and erosion, respectively.

As for closing and opening, were implemented by simply calling the previous functions :

```
closing(img, kernel) = erosion(dilation(img, kernel), kernel);
```

```
opening(img, kernel) = dilation(erosion(img, kernel), kernel);
```

# Reference

[https://github.com/LucienLee/CV-Homework-in-Python/blob/master/hw5/  
image.py](https://github.com/LucienLee/CV-Homework-in-Python/blob/master/hw5/image.py)