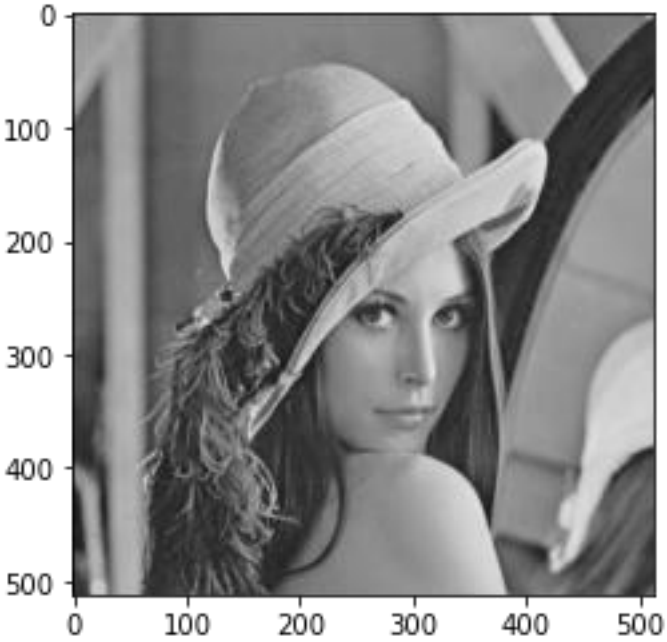
電腦視覺 hw6 資工所碩一 R09922127 林聖哲

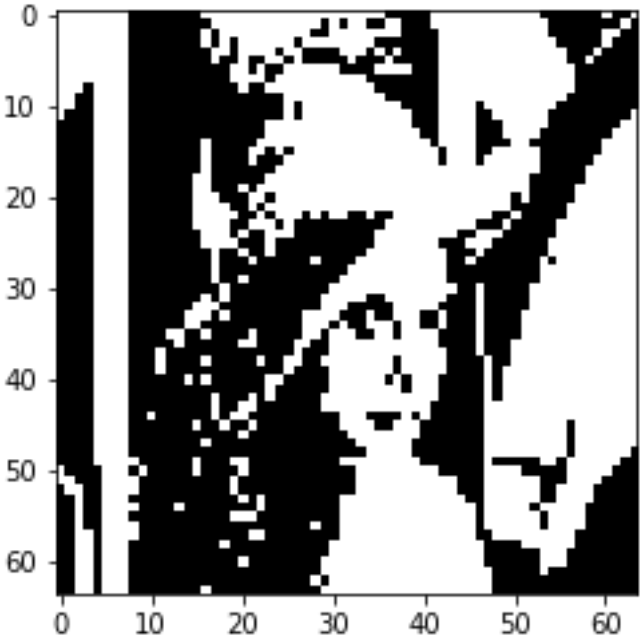
Python 版本 3.6.12
使用套件 cv2, numpy, matplotlib

First, read the bmp file



Write a program which counts the Yokoi connectivity number on a downsampled image(lena.bmp).

Step1: Binarize the benchmark image lena, then using 8x8 blocks as a unit, take the topmost-left pixel as the downsampled data.



Step2: Count the Yokoi connectivity number on a downsampled lena using 4-connected.

Formula:

- for 4-connectivity

$$h(b,c,d,e) = \begin{cases} q & if\ b = c\ and\ (d \neq b\ \vee e \neq b) \\ r & if\ b = c\ and\ (d = b \wedge e = b) \\ s & if\ b \neq c \end{cases}$$

$$f(a_1,a_2,a_3,a_4) = \begin{cases} 5 & if\ a_1 = a_2 = a_3 = a_4 = r \\ n & where\ n = numberof\{a_k | a_k = q\}, otherwise \end{cases}$$

Use the right formula generating a1, a2, a3, a4 , then input to the right formula

Result: