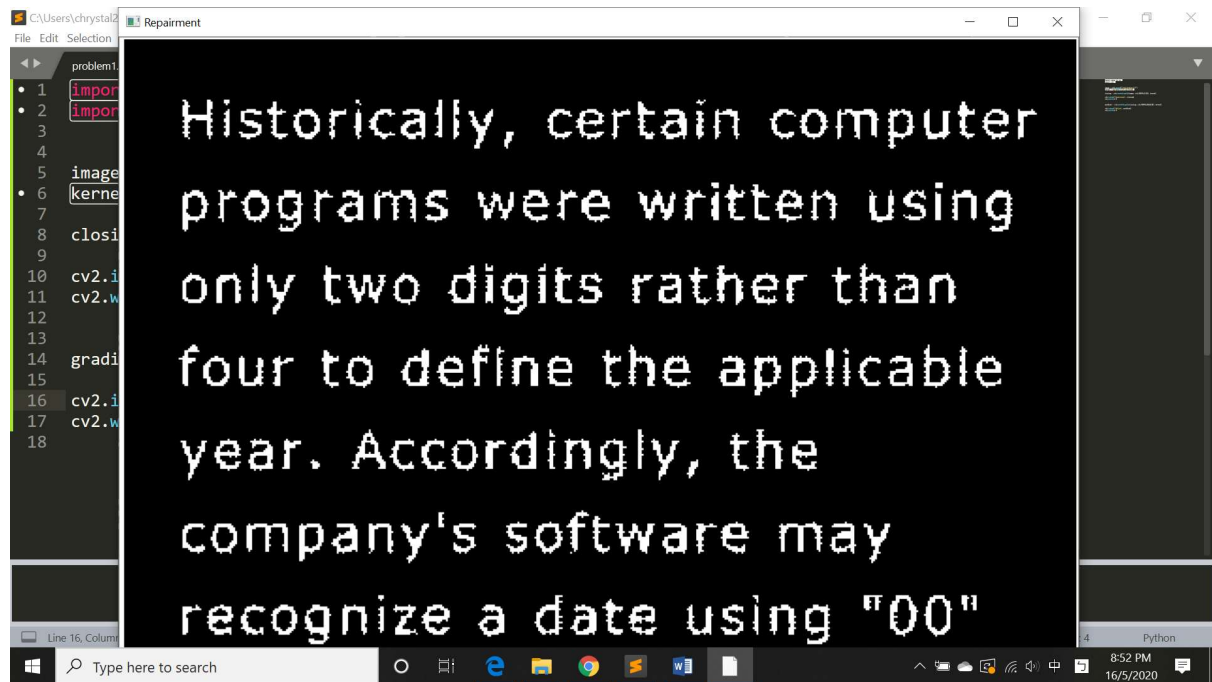


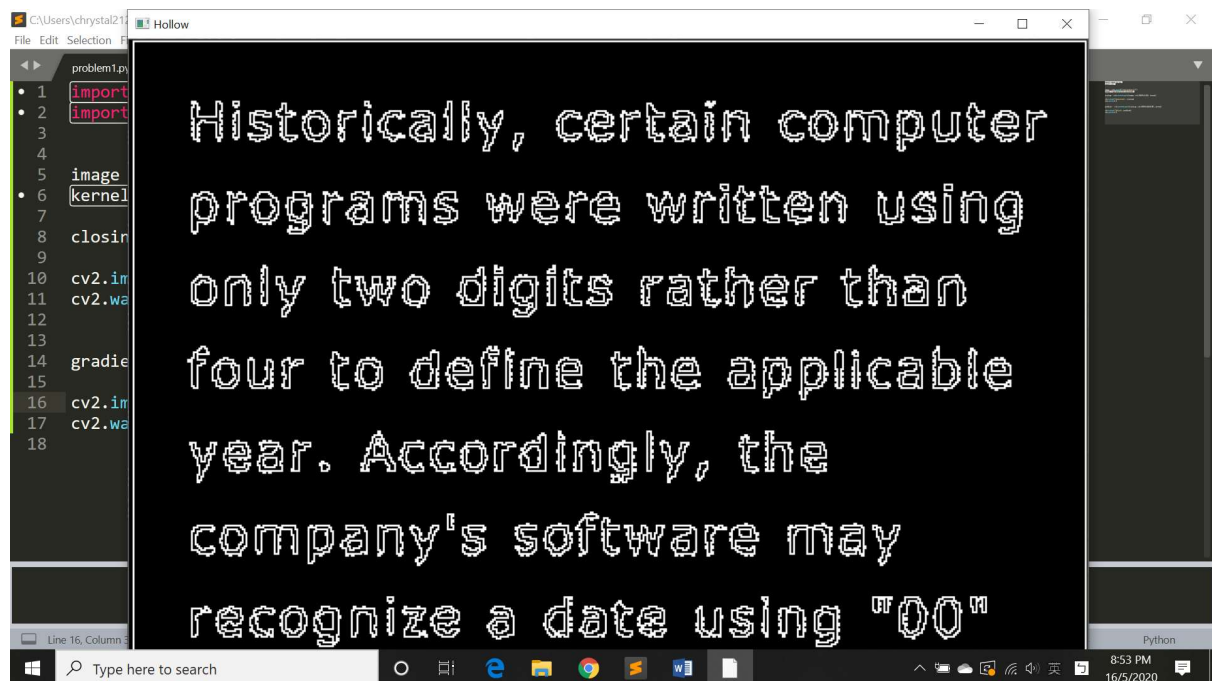
系級:資科所碩一 學號:108753208 姓名:葉冠宏

1.

1) fix the image shown

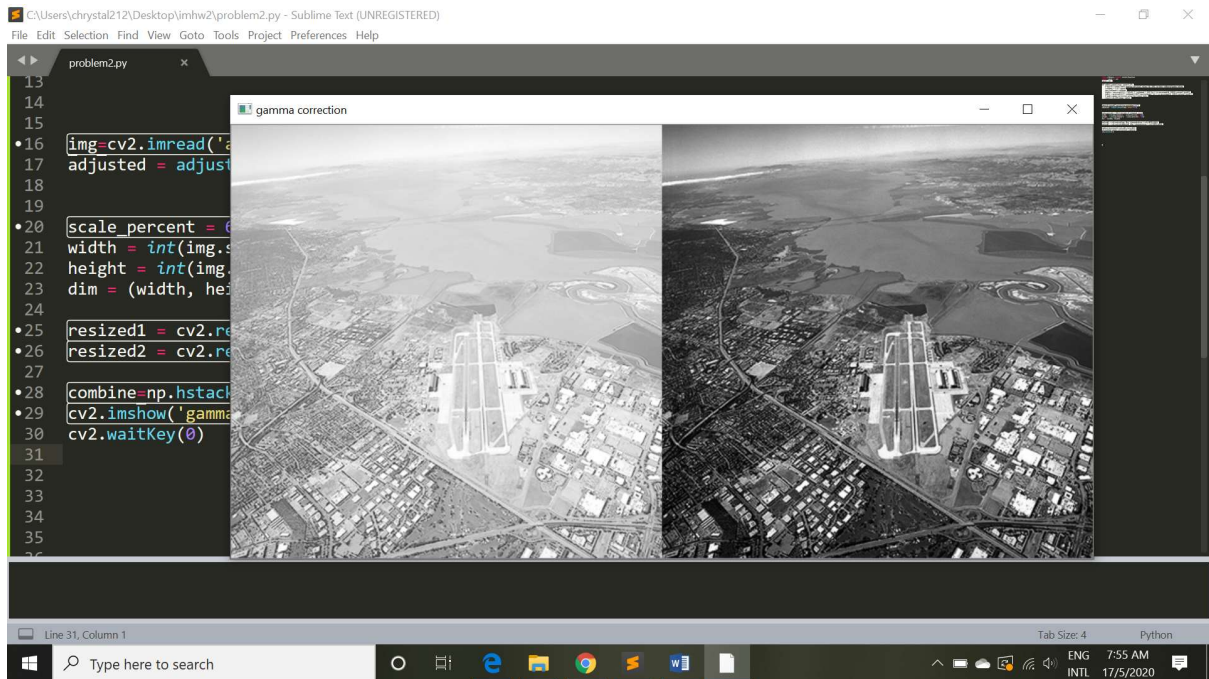


2) find the boundaries of each characters



2.

Gamma correction:



Gamma Stretching

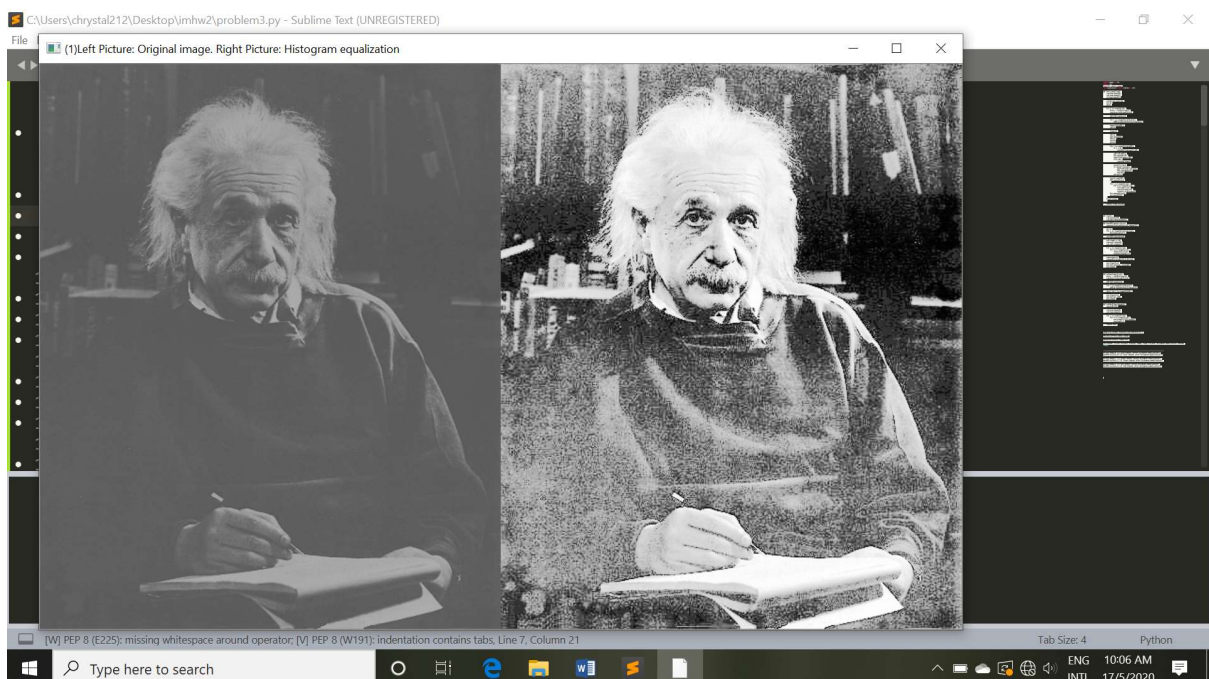
$$G(x, y) = \min(G) + \alpha \left\{ (I(x, y) - \min(I)) \frac{\max(G) - \min(G)}{\max(I) - \min(I)} \right\}^{\frac{1}{\gamma}}$$

$$\alpha = (\max(G) - \min(G))^{1 - \frac{1}{\gamma}}$$

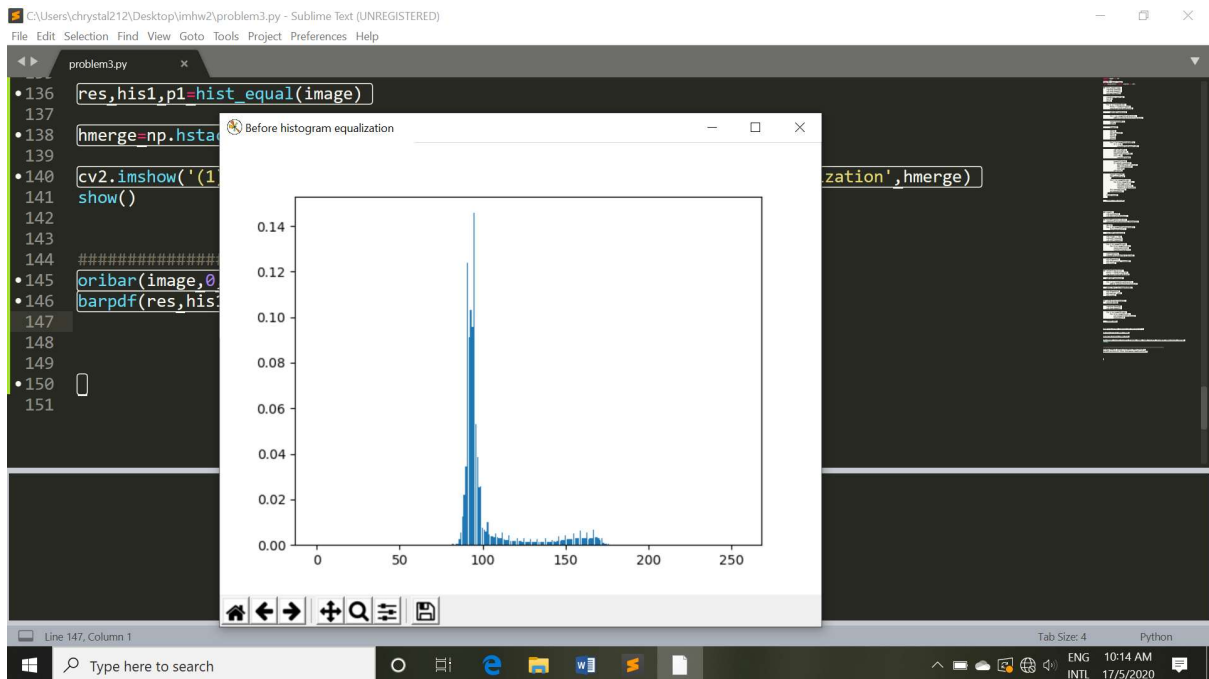
我用 $\gamma=0.25$ 來實作

3.

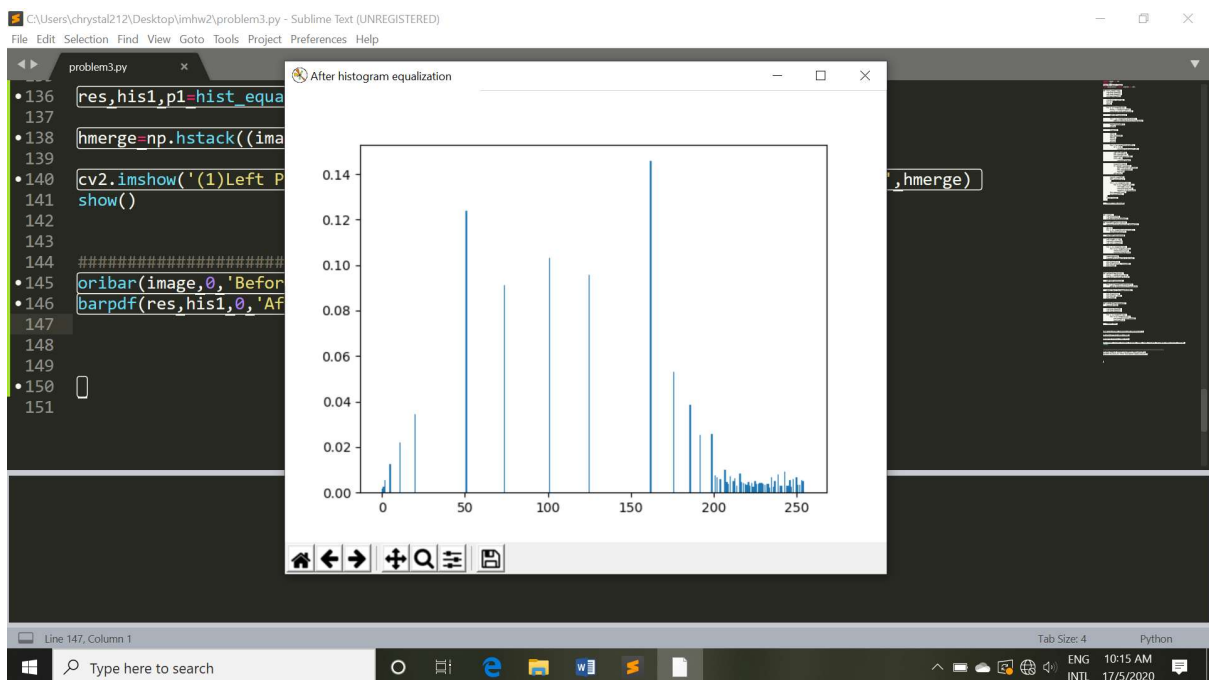
Conventional histogram equalization:



Before histogram equalization:

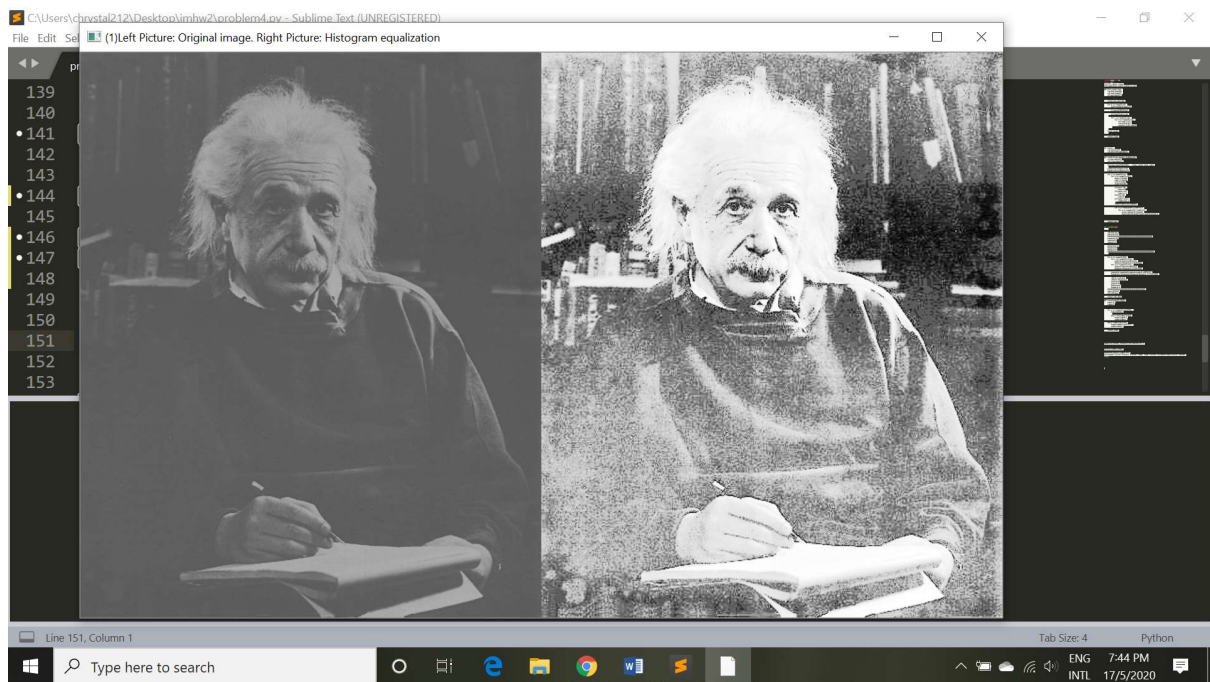


After histogram equalization:



4.

Two-dimensional histogram equalization and contrast enhancement:



可以觀察到圖的對比的確變明顯了，但有些細節似乎也消失了，而且多了許多白斑。