

tags: DIP

Principles and Applications of Digital Image Processing

Fall, 2021

for better reading: <https://hackmd.io/@tohow06/SytxvTDOY>

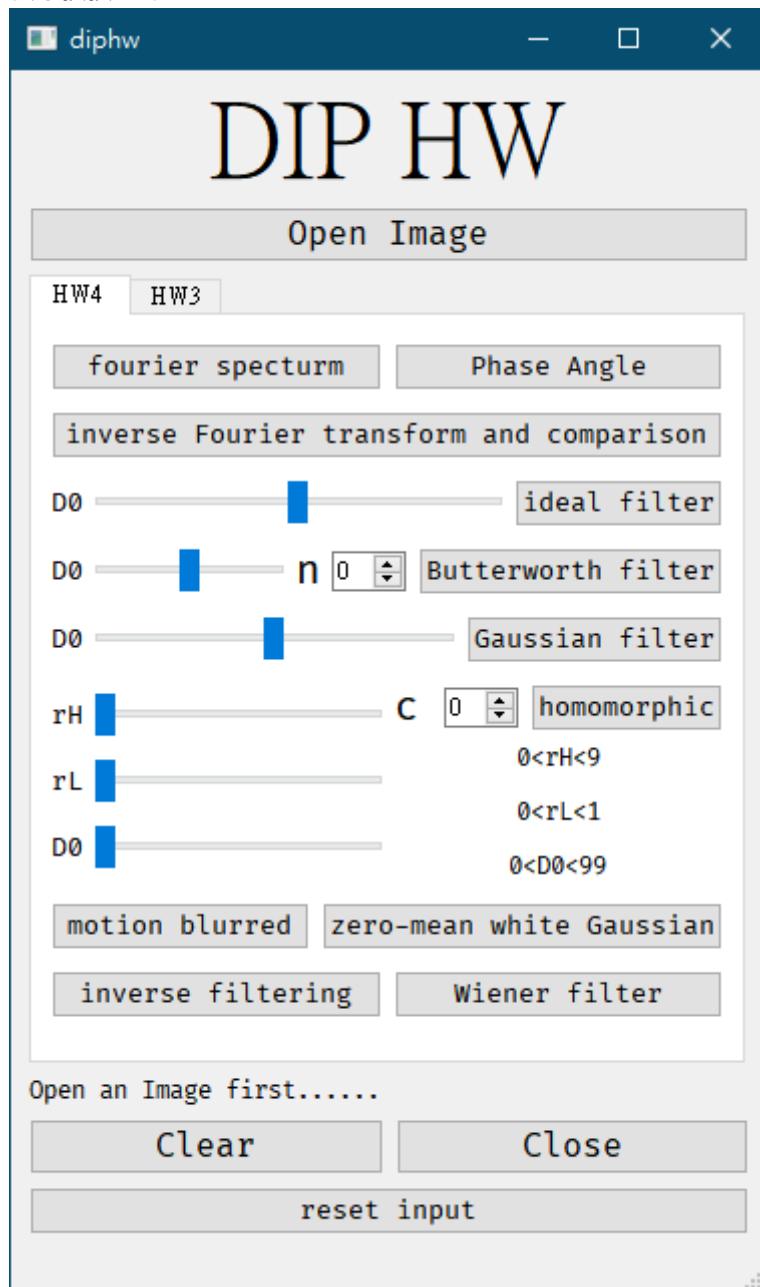
Homework 4

B06611008 賴乙豪

程式介面

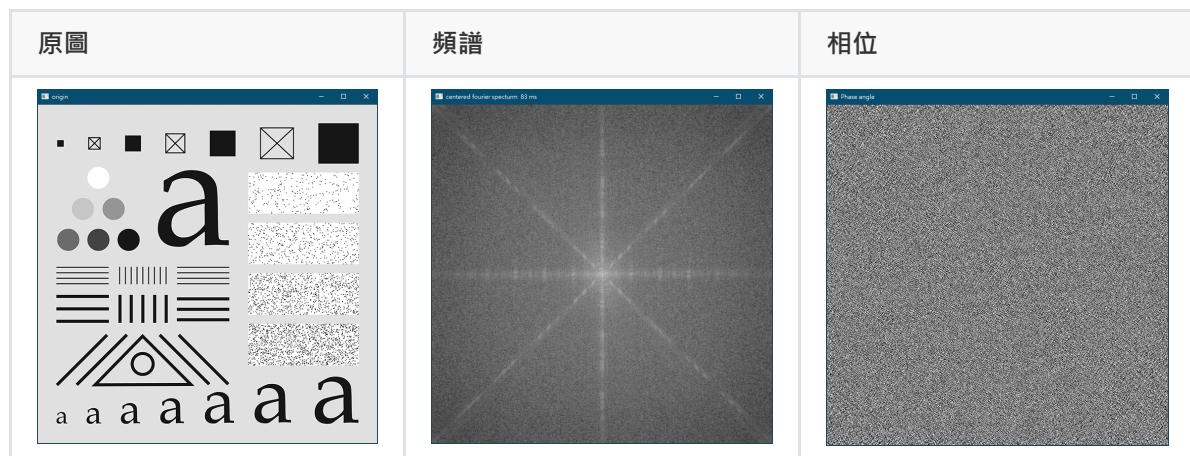
大致按照題目順序撰寫

依序按按鈕即可

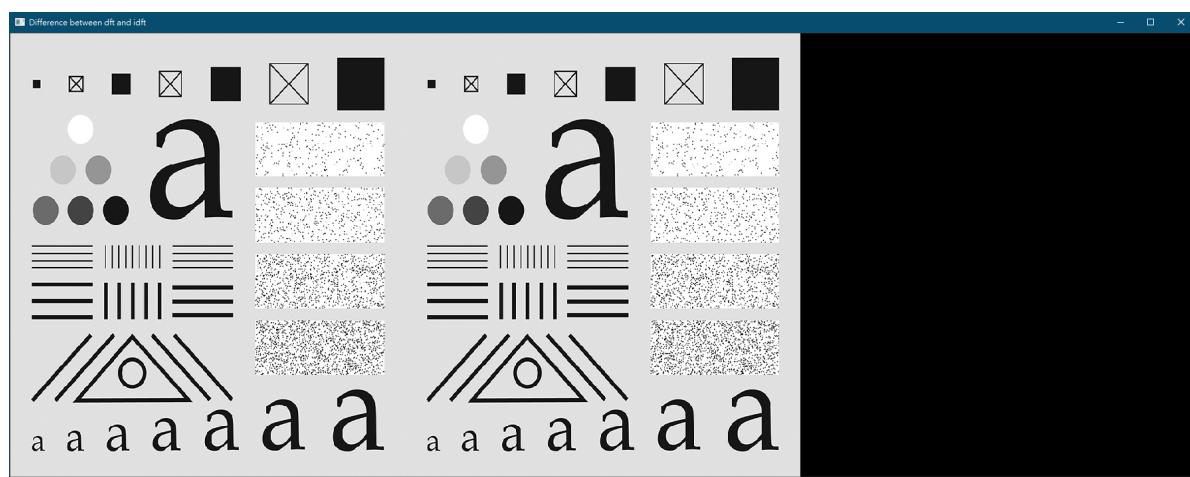


Part 1

基本功能



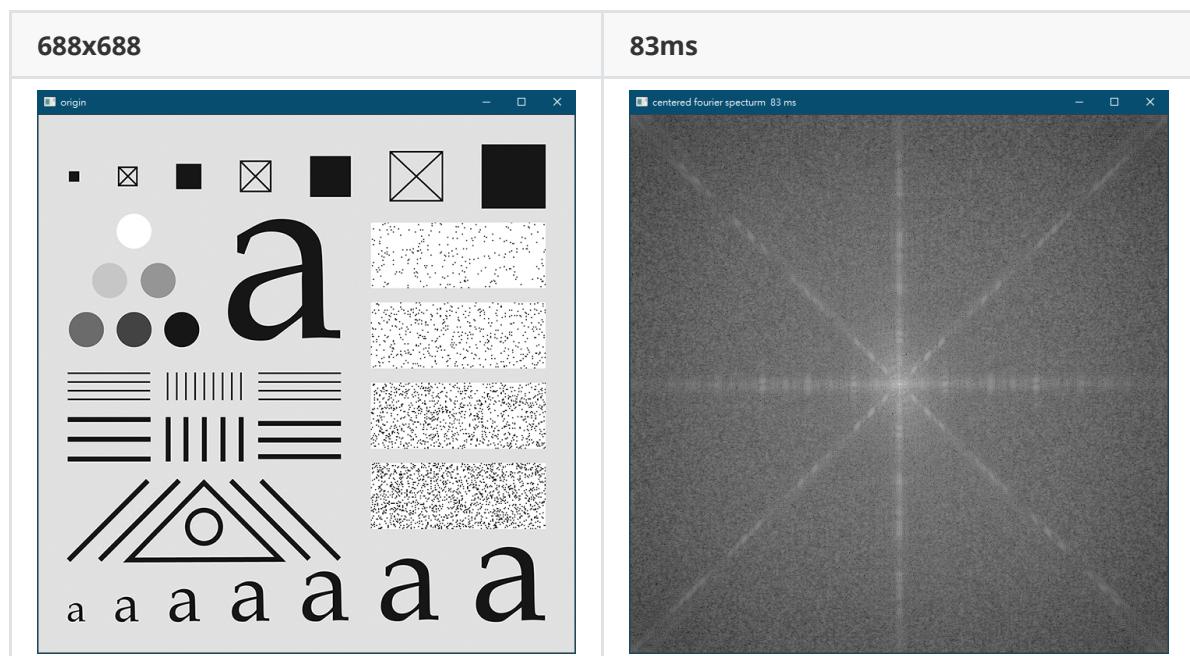
fft ifft 比較



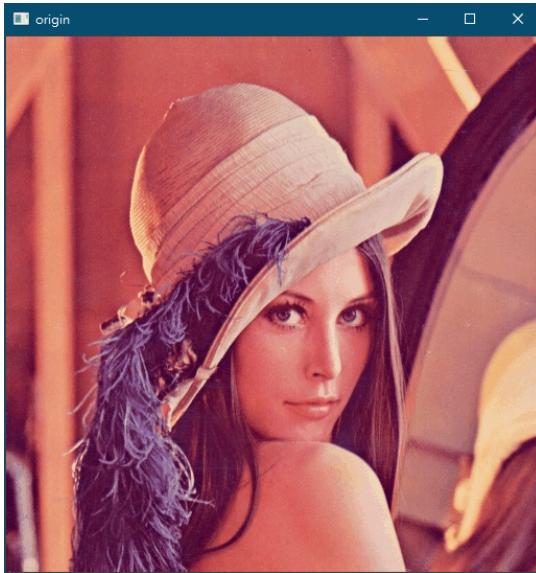
fft後直接接ifft

相減後結果無差異

速度比較



512x512



44ms



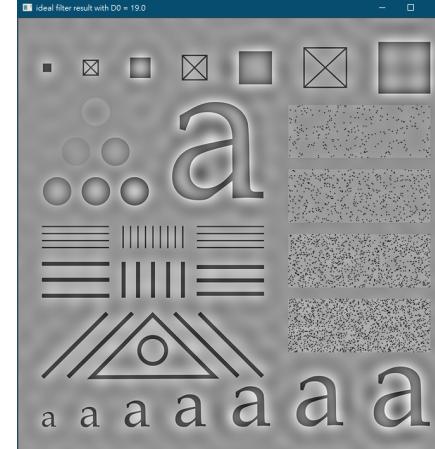
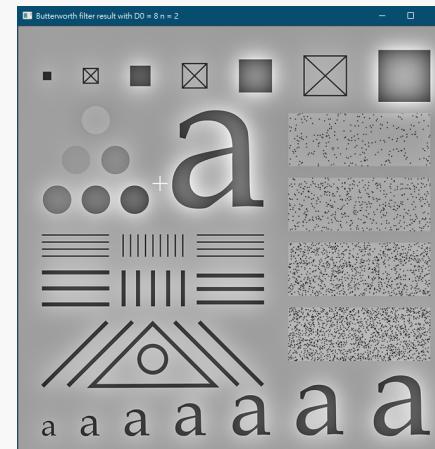
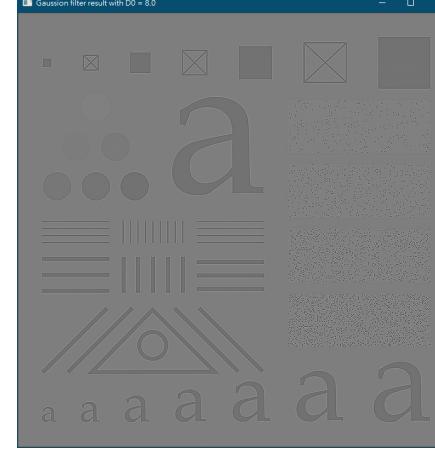
$$\text{像素比} = \frac{688 \times 688}{512 \times 512} \approx 1.8$$

$$\text{時間比} = \frac{83}{44} \approx 1.9$$

像素數量幾乎與時間成正比

Part 2

D0 slider is at 0 initial
to right side for lowpass
to left side for highpass

type	lowpass	highpass
ideal		
Butterworth		
Gaussian		

cutoff frequency 比較

D0=25 n=2

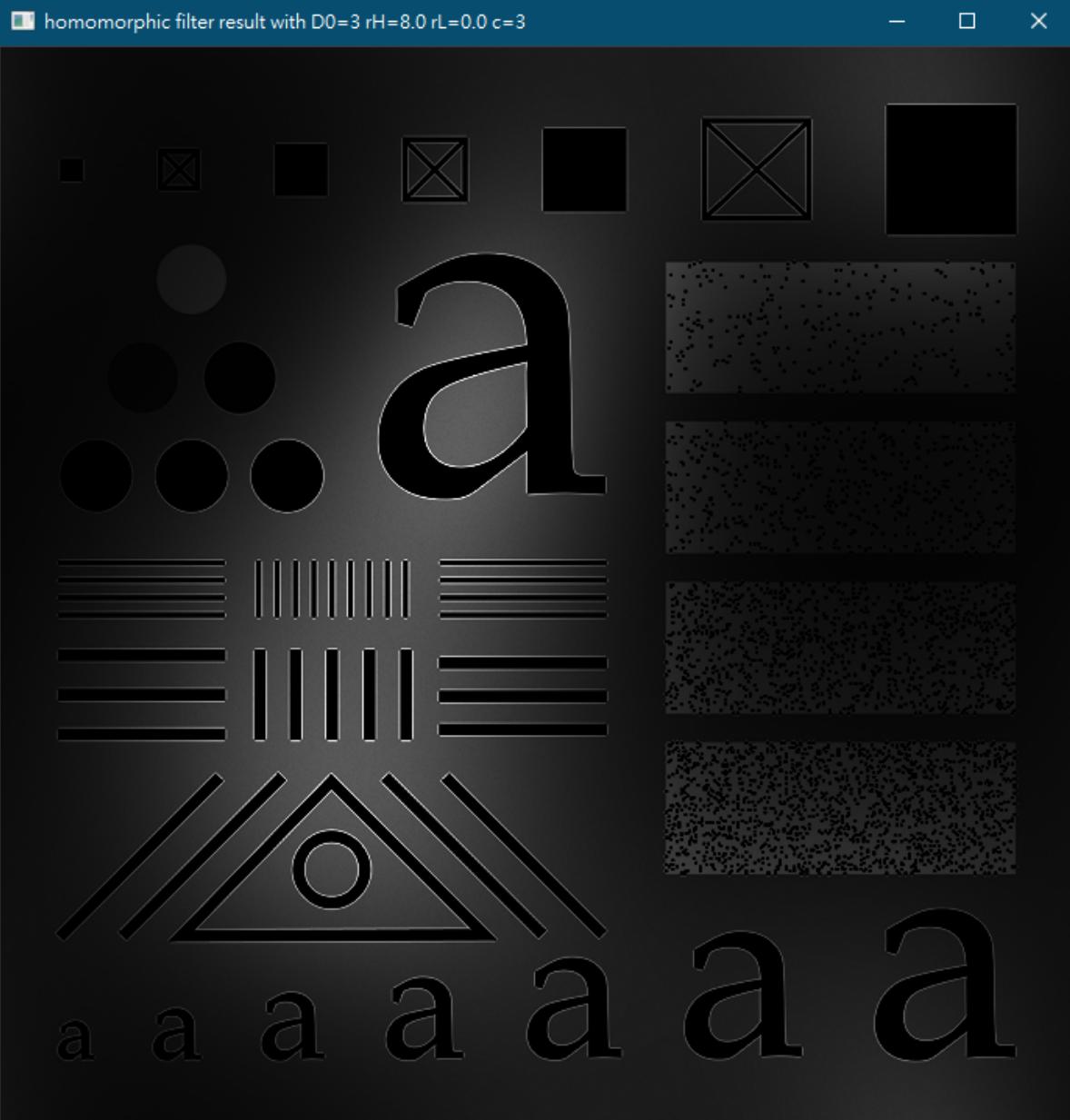


D0=99 n=2



In all filter, when cutoff frequency is bigger, it will allow more information to pass.

Part 3



rH choose high freq want to boost

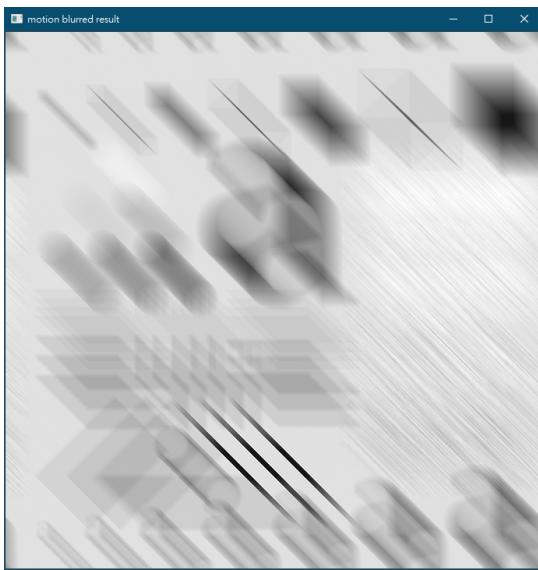
rL choose low freq want to remain

c controls the sharpness of the slope of the function as it transitions between rL and rH

D0 is same as Gaussian

Part 4

motion blurred a=b=0.1 T=1



invers filtering

