

Assignment 5: Problem 4  
Implementation of 'Ideal and Gaussian Low Pass Filter  
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Ideal Low pass filter ( $D = 40$ )



gaussian low pass filter ( $D = 40$ )

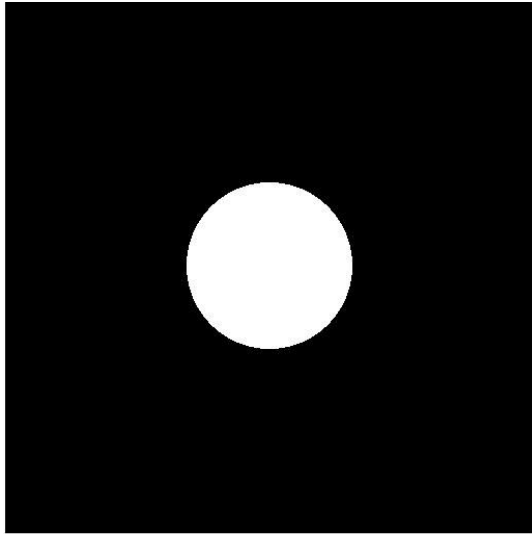


Ideal Low pass filter ( $D = 80$ )

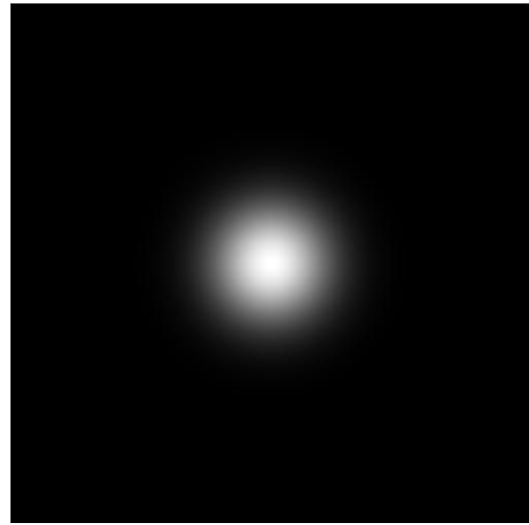


Gaussian Low pass Filter ( $D = 80$ )

Frequency Response:



Ideal\_lowpass\_filter (D = 40)



Gaussian\_lowpass\_filter (D = 40)

Whenever we observe sharp edges in the image, we observe sharp frequency impulses in the form of lines corresponding to those edges. Using the property of duality a similar phenomenon is observed. A sharp circular edge in the frequency domain is resulting spatial impulses.