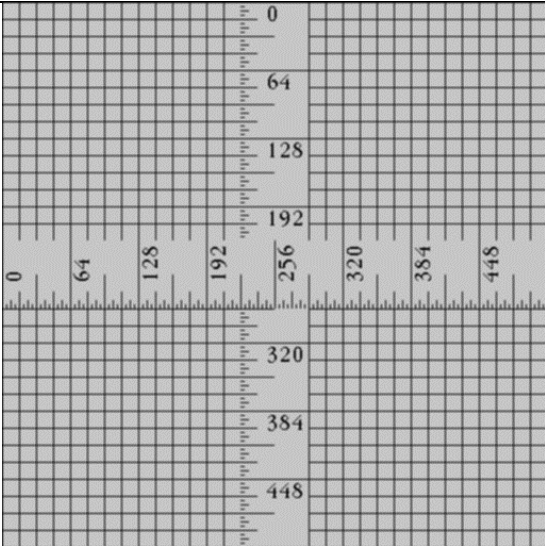
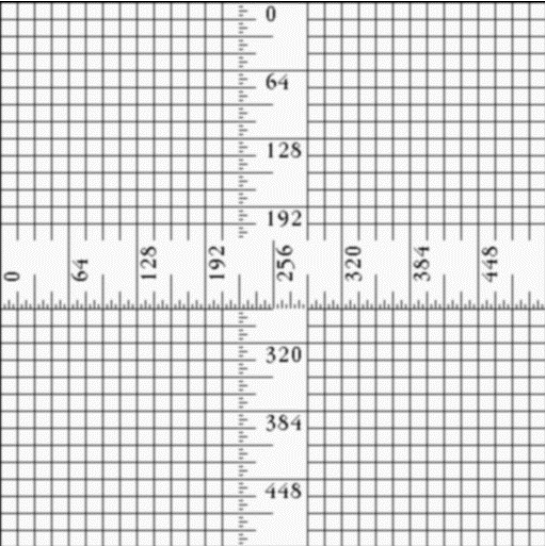
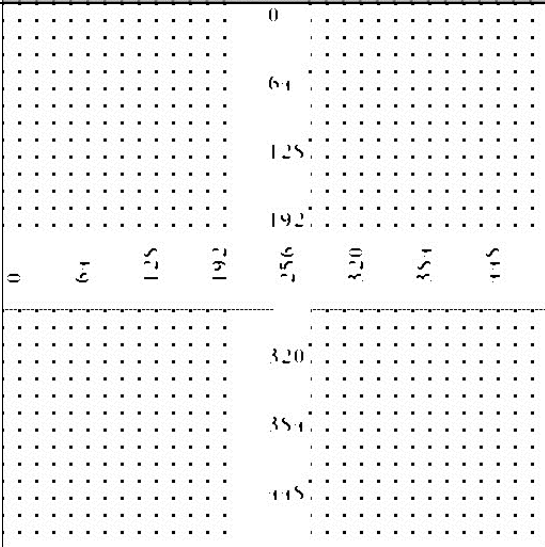
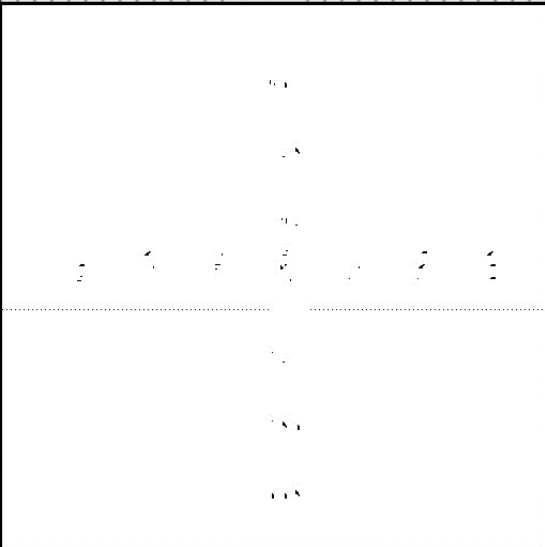


DIP  
Assignment 1  
Sahil Goyal  
2020326

1.





	Kernel Size 3x3	Kernel Size 5x5
Gaussian Filter		
Median Filter		


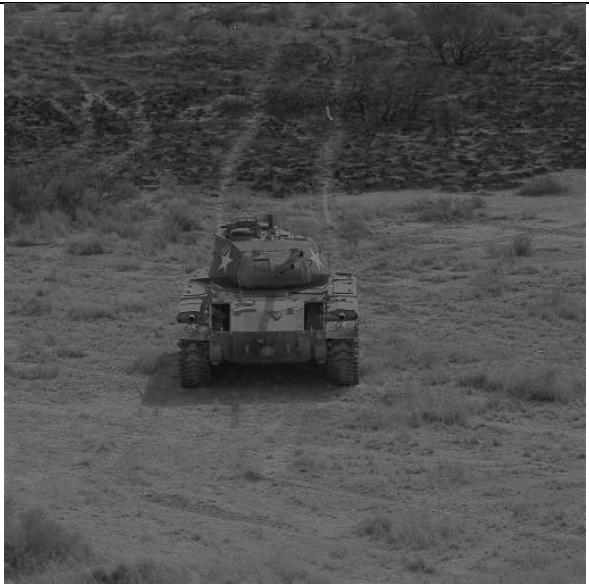

Median filters are superior at preserving edges when compared to gaussian filters. This is because of the difference in their filtering approach. Gaussian filters, which are linear filters, tend to smooth image edges within the pixels neighbourhood and give considerable importance to the central pixel. This helps to effectively reduce noise and blurs the image, but this also reduces edge sharpness within the image. On the other hand, median filters are nonlinear filters. They replace a pixel with the median value of the pixels in its neighbourhood. This unique approach makes the

median filter much more resilient to noise and outliers, and because of this, the median filter excels at preserving edges, especially in regions where there are rapid changes in the light intensity.

In this way, median filters are superior to gaussian filters in maintaining the integrity of image edges.

2.

First Order		Second Order	
Sobel Filter (3×3)		Laplacian Filter (3×3)	
Prewitt Filter (3×3)		Enhanced Laplacian Filter (3×3)	

Scharr Filter (3×3)		Laplacian of Gaussian Filter (3×3)	
Robert Filter (3×3)		Difference of Gaussian Filter (3×3)	