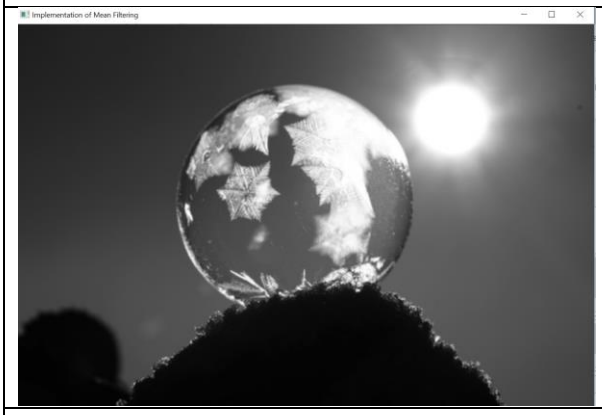
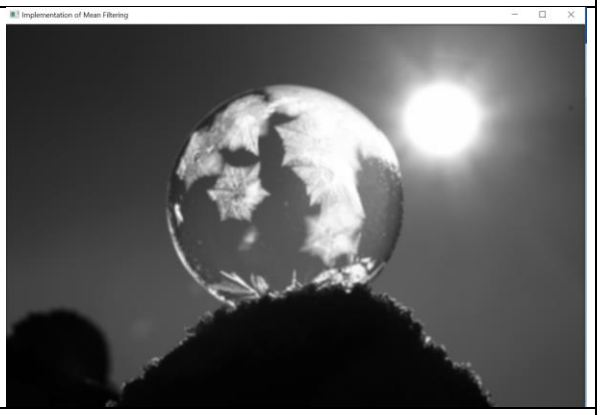
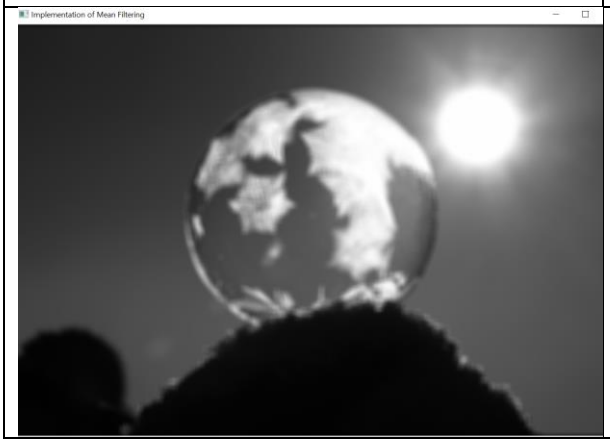
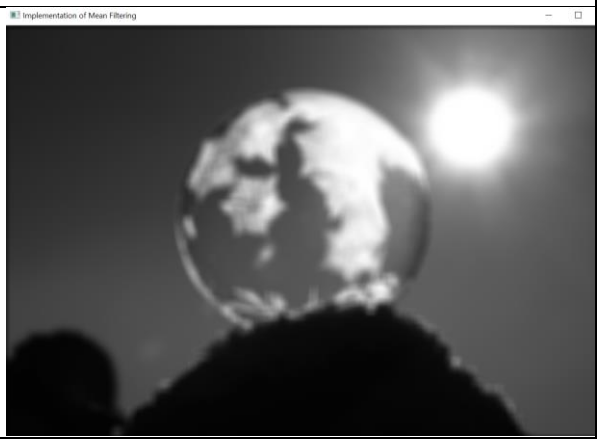
Output on different kernal size in mean filtering :

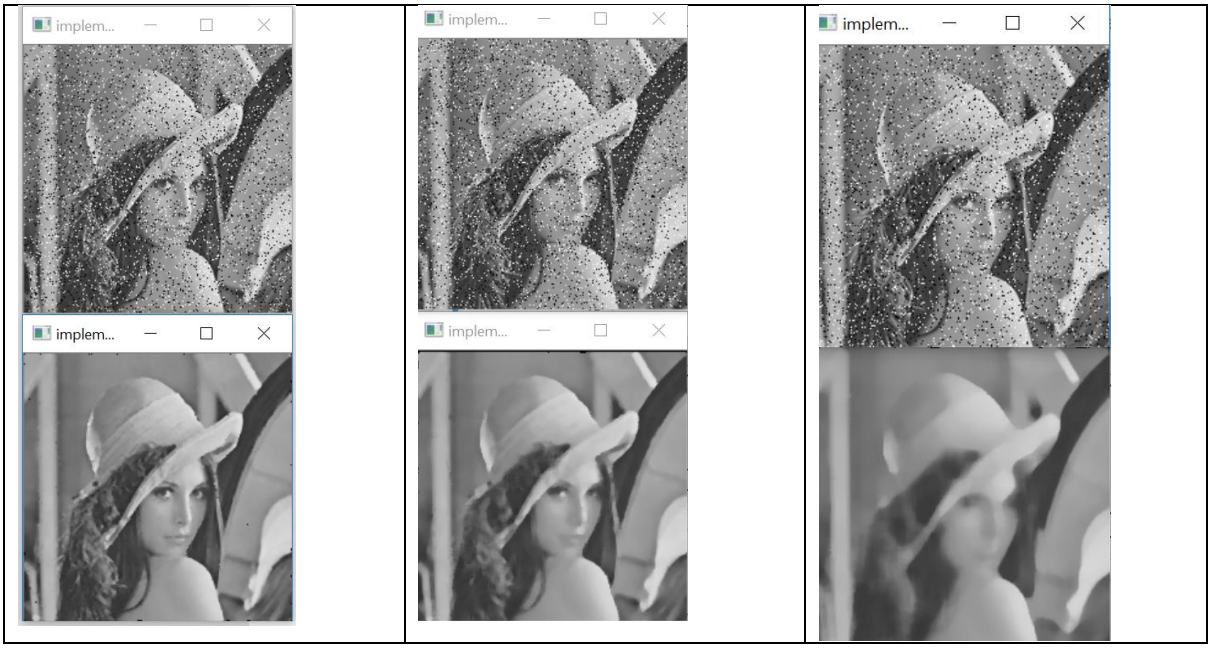
3x3	5x5
	
11x11	**15x15**
	

The pixel value is dependent on neighbouring value so if we increase the kernel size the number of neighbour for a particular pixel also increases so the image gets blur. Suppose if kernel size is 3 then 3x3 mask is formed and middle value is pixel value and it is dependent on neighbouring 8 pixels. And if kernel size is 5x5 then pixel value is dependent on 24 pixels.

Output on different kernal size in mean filtering :

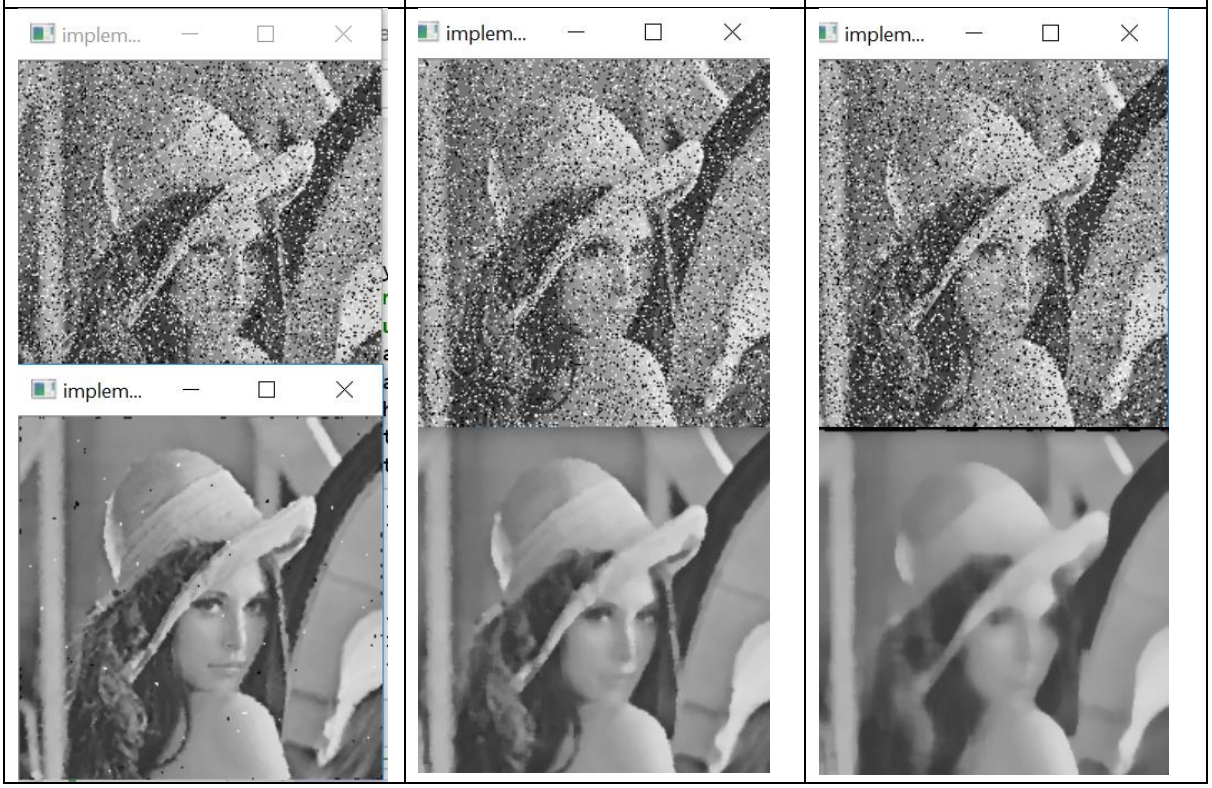
a) Add salt and pepper noise as 10% of all pixels

3x3	5x5	11x11



b) Add salt and pepper noise as 10% of all pixels

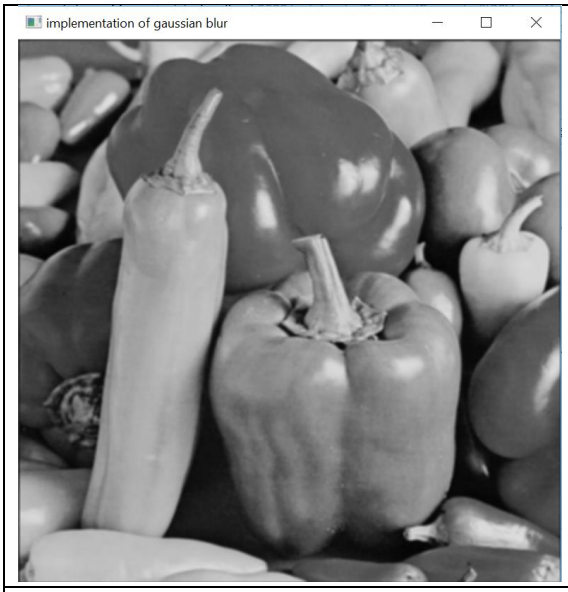
3x3	5x5	11x11



The pixel value is dependent on neighbouring value so if we increase the kernel size the number of neighbour for a particular pixel also increases so the image gets blur. Suppose if kernel size is 3 then 3x3 mask is formed and middle value is pixel value and it is dependent on neighbouring 8 pixels. And if kernel size is 5x5 then pixel value is dependent on 24 pixels.

Output on different kernal size in Gaussian filtering :

3x3 (sigma=200)	5x5 (sigma=200)

	
11x11 (sigma=200)	15x15 (sigma=200)
	

The pixel value is dependent on neighbouring value so if we increase the kernel size the number of neighbour for a particular pixel also increases so the image gets blur. Suppose if kernel size is 3 then 3x3 mask is formed and middle value is pixel value and it is dependent on neighbouring 8 pixels. And if kernel size is 5x5 then pixel value is dependent on 24 pixels.

e).**Kernal size=5**

Sigma=1	Sigma=5

Sigma=20

Sigma=200

Sigma=400

Sigma=600

When we increase the sigma from value 1 to value 5 the image gets blur and from value 5 to 20 the image gets more blur. But when we increase the value from 20 to 50 there is no such difference in image getting blur. The reason may be the gaussian matrix we created using the gaussian formula is almost same because the value is almost tends to zero so the image doesn't get effected.