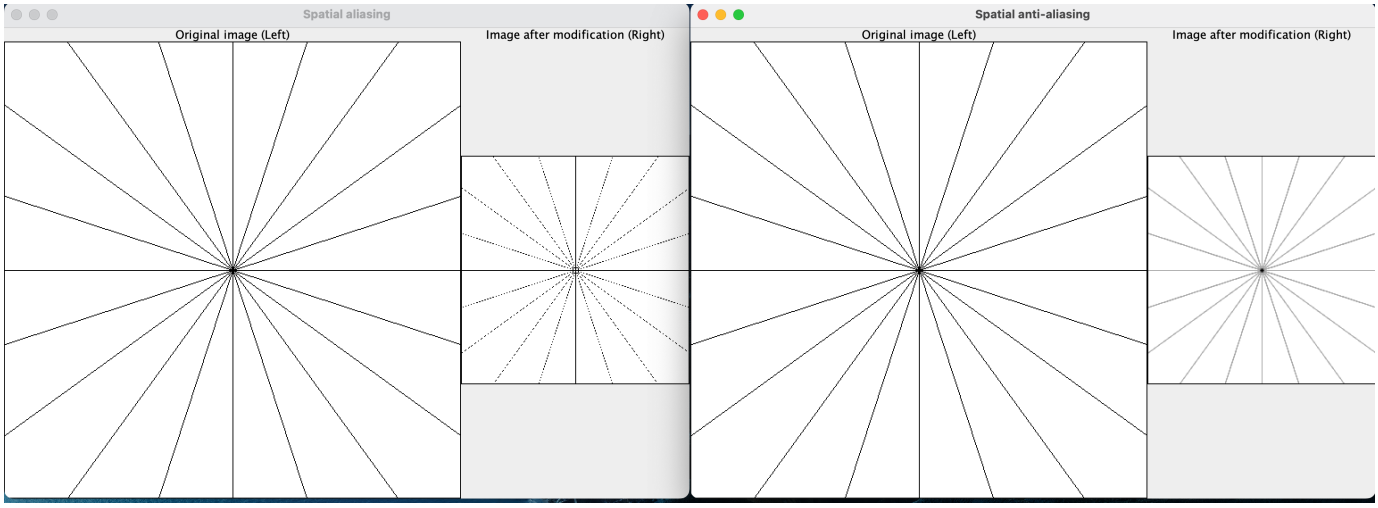
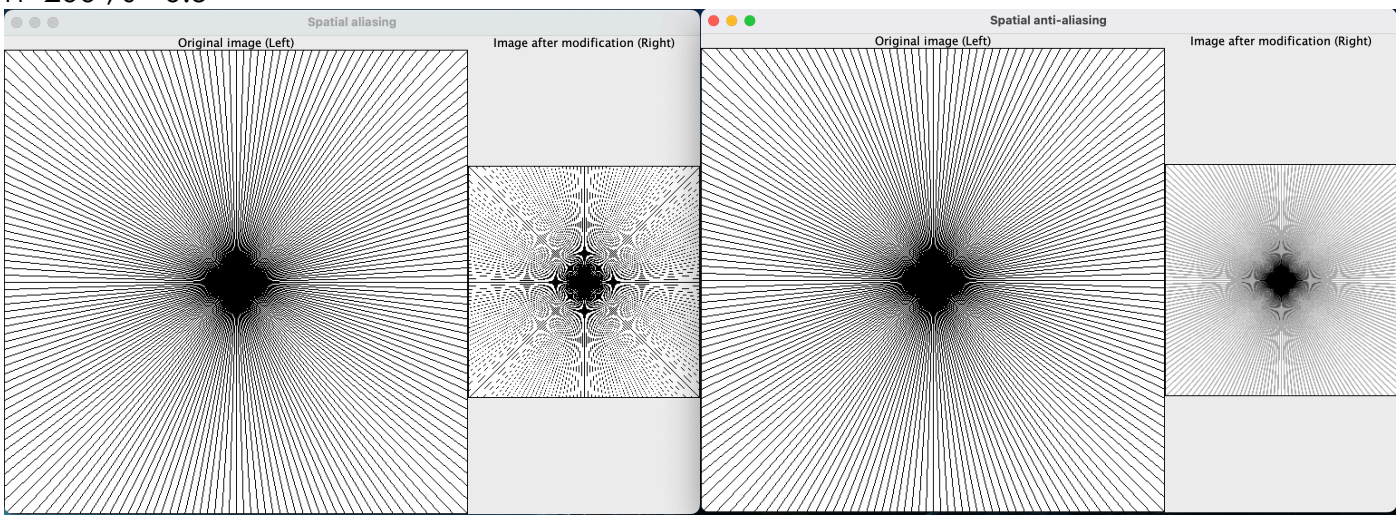
ASSIGNMENT - 1

Part 1a

n=20, s=0.5



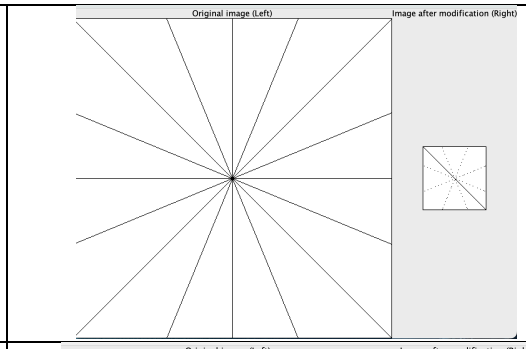
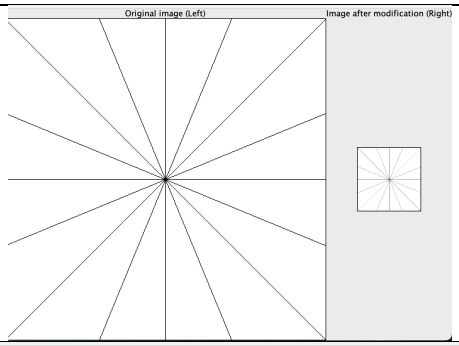
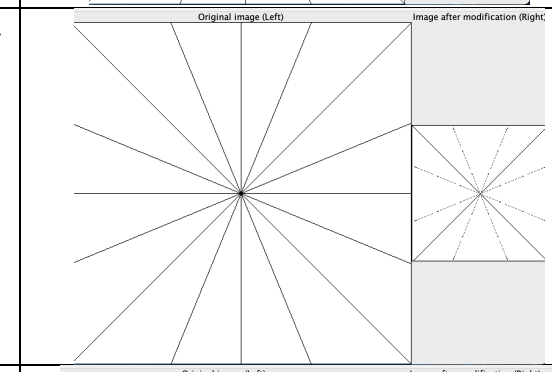
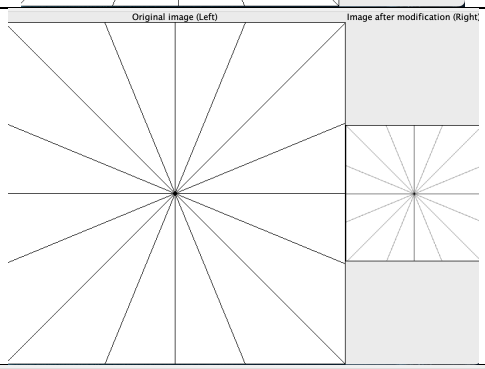
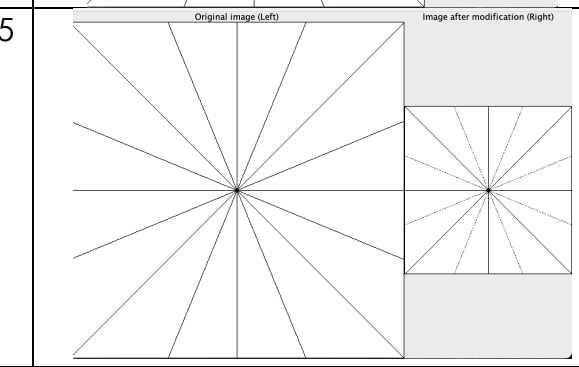
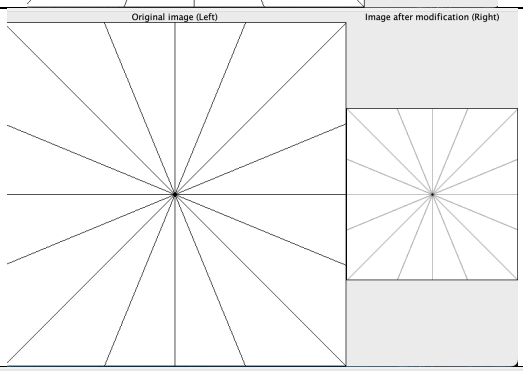
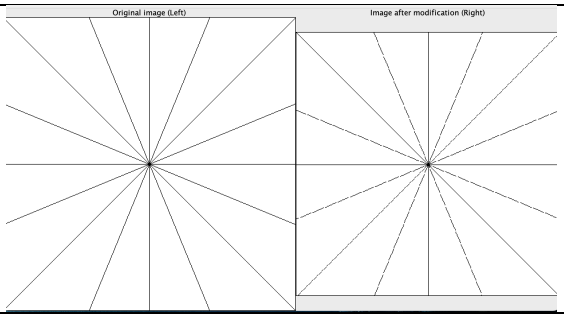
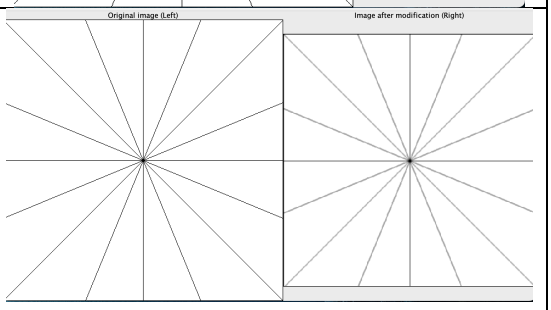
n=200 , s= 0.5



Aliasing causes a jaggered effect type of distortion in the output images in the right due to loss of data, which can be observed from both the above scenarios. With values of n that are very large, we see that the effects of aliasing are higher and we start to observe our output image slightly different from the original image. The intricate patterns in the input image that are formed due to larger n value, seems to be changing the in the aliased output image, whereas it can be observed that anti-aliasing helps this from occurring, and we can see very similar image as our input image.

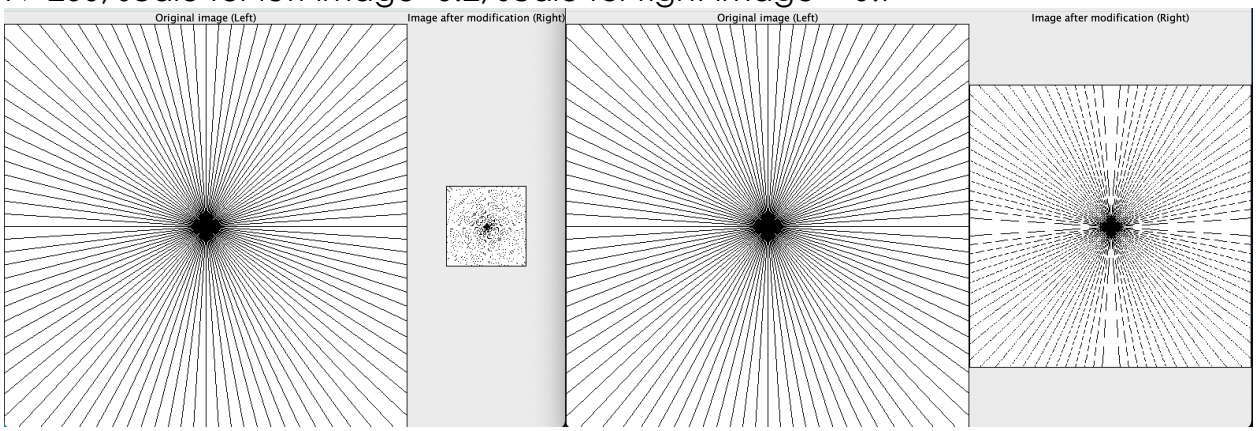
Part 1b

for n=16,

S=0.2		
S=0.4		
S=0.5		
S=0.9		

- In case of aliasing, it can be observed that few lines are missing in the output image with aliasing for some values of s, whereas they are visible in the anti- aliased version of the image. Example – s=0.2, both horizontal and vertical lines are missing.

N=200, scale for left image=0.2, scale for right image = 0.9



- With decreasing value of s, it is seen that the output images turn out to be more pixelated.
- Irrespective of scaling, anti-aliasing helps smoothen the image to look like the original image.

Part 2

1. The relation between s, fps and os –
    - Case 1(fps>=2s) : os = s
    - Case 2(s<fps<2s) : os = s-fps (negative value denoting the anti clockwise rotation)
    - Case 3(fps=s) : os=0 (stationary image)
    - Case 4(fps<s) : os=s-fps
2. s=10, fps=20 -> case 1:10 rps is the os
3. s=10, fps=16 -> case 2 : -6 rps is the os
4. s=10, fps=10 -> case 3: 0 rps is the os
5. s=10, fps=8 -> case 4: 2 rps is the os