Practical 04

Aim: Image Denoising

i) Program to denoise using spatial mean and median filtering.

a) Spatial Mean

Code :-

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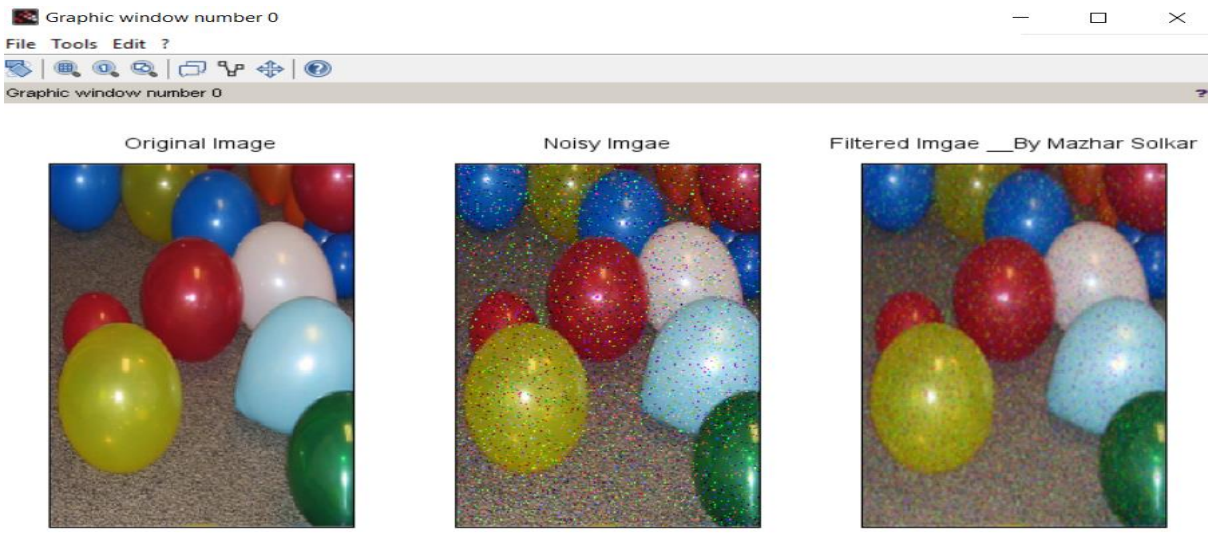
Practical_04_i_a_program to denoise using spatial mean filter.sce (C:\0_MSc_IT_Notes\Image Processing\Practicals\Practical-04

Practical_04_i_a_program to denoise using spatial mean filter.sce

```
clc;
clear all;
Image = imread('C:\Program Files\scilab-6.1.1\IPCV\images\balloons.png');
NoisyImage = imnoise(Image,'salt & pepper');
Fl = fspecial('average',3);
FilterImage = imfilter(NoisyImage,Fl)

subplot(1,3,1);
imshow(Image);
title('Original Image');

subplot(1,3,2);
imshow(NoisyImage);
title('Noisy Imgae');

subplot(1,3,3);
imshow(FilterImage);
title('Filtered Imgae __By Mazhar Solkar');

```

Output :-

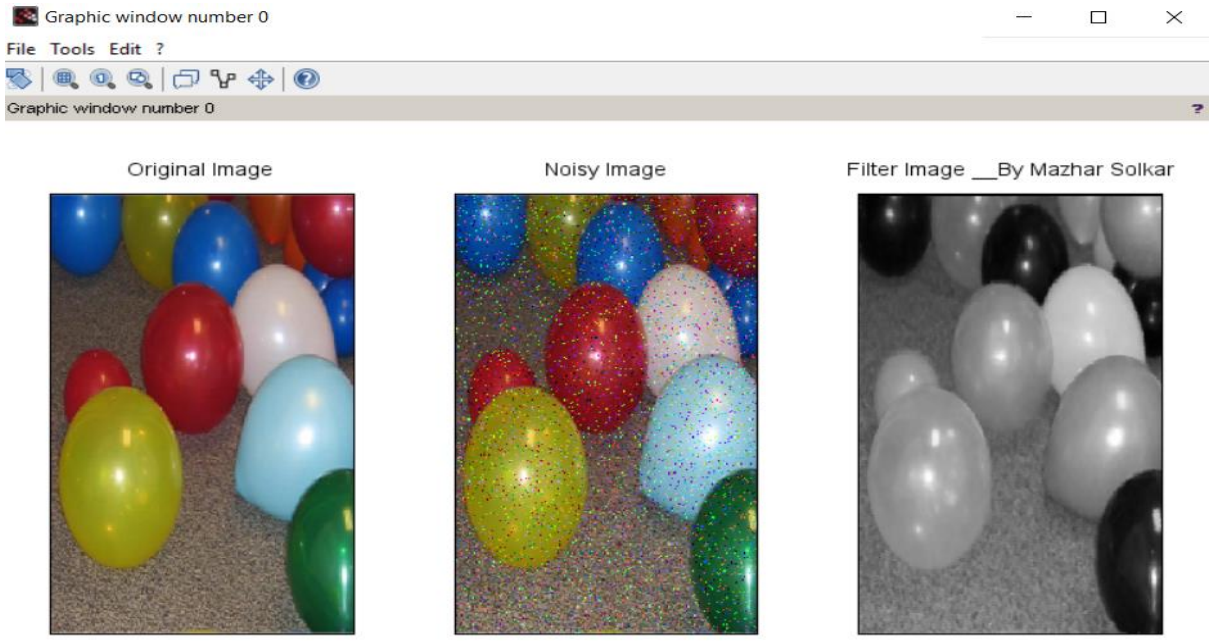


b) Median(I)

Code :-

```
clc;
clear all;

Image = imread('C:\Program Files\scilab-6.1.1\IPCV\images\balloons.png');
a = imnoise(Image,'salt & pepper');
[m,n] = size(Image);

for i=2:m-1
    for j=2:n-1
    Output(i,j)=median([a(i-1,j+1),a(i,j+1),a(i+1,j+1),a(i-1,j),a(i+1,j),a(i-1,j-1),a(i,j-1),a(i+1,j-1)]);
    end
end
subplot(1,3,1);
imshow(Image);
title('Original Image');

subplot(1,3,2);
imshow(a);
title('Noisy Image');

subplot(1,3,3);
imshow(Output);
title('Filter Image __By Mazhar Solkar')
```

Output :-



b) Median(II)

Code :-

File Edit Format Options Window Execute ?

practical_04_i_b_program to denoise using median_I.sce (C:\0_MSc_IT_Notes\Image Processing\Practicals\Practical-04\practical_04

practical_04_i_b_program to denoise using median_I.sce

```
clc;
clear all;

a = imread('C:\Program Files\scilab-6.1.1\IPCV\images\balloons.png');
Image=rgb2gray(a);

NoisyImage = imnoise(Image,'salt & pepper');
output = immedian(NoisyImage,[3,3]);

subplot(1,3,1);
imshow(Image);
title('Original Image');

subplot(1,3,2);
imshow(NoisyImage);
title('Noisy Image');

subplot(1,3,3);
imshow(Output);
title('Filter Image __By Mazhar Solkar')
```

Output :-

ii) Program for Image deblurring using Weiner filters.

Code :-

File Edit Format Options Window Execute ?

practical_04_i_b_program to denoise using median_II.sce (C:\0_MSc_IT_Notes\Image Processing\Practicals\Practical-04\practical_04

practical_04_i_b_program to denoise using median_I.sce | practical_04_i_b_program to denoise using median_II.sce

```
clc;
clear all;
Image = imread('C:\Program Files\scilab-6.1.1\IPCV\images\balloons.png');

NoisyImage = imnoise(Image,'gaussian',0.02);

wienerfilter = imwiener2(NoisyImage,[5,5],0.2);

subplot(1,3,1);
imshow(Image);
title('Original Image');

subplot(1,3,2);
imshow(NoisyImage);
title('Noisy Image');

subplot(1,3,3);
imshow(wienerfilter);
title('Wiener Image __By Mazhar Solkar')

```

Output :-