# ASSIGNMENT -4

1.

```matlab
%%   mean ,max , min, mid point%%
a=imread('eight.tif');
figure,subplot(3,2,1);
imshow(a)
title('Original');
b=imnoise(a);
med=b;
min=b;
max=b;
mid=b;
subplot(3,2,2);imshow(b)
title('Salt and Pepper noise');

W=zeros(9);
[m,n]=size(a);
for i=2:1:m-1
    for j=2:1:n-1
        val=1;
        for a=i-1:1:i+1
            for b=j-1:1:j+1
                W(val)=b(a,b);
                val=val+1;
            end
        end
        W=sort(W);
        med(i,j)=W(5);
        min(i,j)=W(1);
        max(i,j)=W(9);
        mid(i,j)=round((W(1)+W(9))/2);
    end
end
 subplot(3,2,3);imshow(med);
title('Median Filtering');
subplot(3,2,4);imshow(min)
title('Minimum Filtering');
subplot(3,2,5);imshow(max)
title('Maximim Filtering');
subplot(3,2,6);imshow(mid)
title('Mean Filtering');
```

Original   Salt and Pepper noise

Median Filtering   Minimum Filtering

Maximim Filtering   Mean Filtering

2.
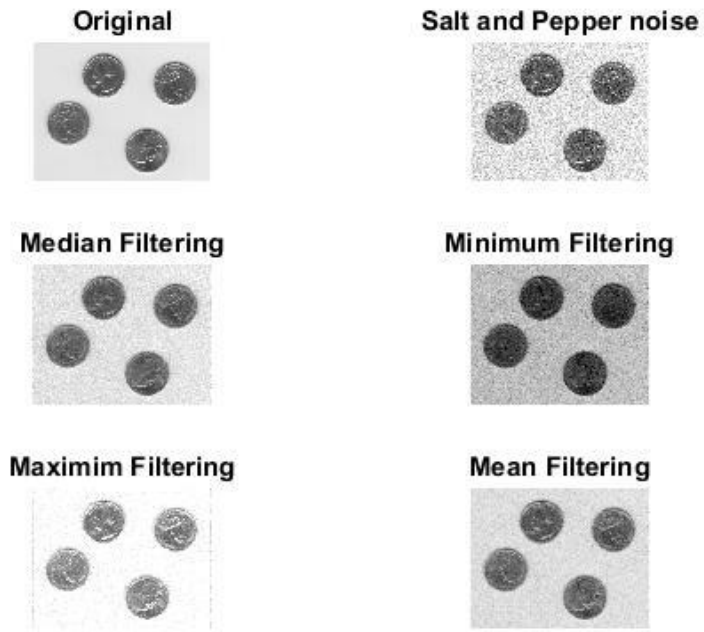
```matlab
%adaptive median filter%
a=imread('eight.tif');
figure,
subplot(3,1,1)
imshow(a)
title('Original');
a1=imnoise(a);
imadmed=a1;
subplot(3,1,2);imshow(a1)
title('Salt and Pepper noise');
smax=7;
s=3;
[m,n]=size(a);

if s==3
    x=1;
    A=zeros(s*s);
elseif s==5
    x=2;
    A=zeros(s*s);
elseif s==7
    x=3;
    A=zeros(s*s);
end

for i=4:1:m-3
    for j=4:1:n-3
        b=a1(i,j);
        imadmed(i,j)=p4_2_func(b,s,i,j,imadmed,smax);
    end
end
subplot(3,1,3);imshow(imadmed)
```
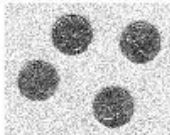
```
title('Adaptive Median Filtering');
```

Original

Salt and Pepper noise

Adaptive Median Filtering