Dilation and Erosion

Matlab Code:

%%Dilation And Erosion Without using inbuilt function%%%

close all;

clear all;

clc;

A=imread('cameraman.tif');figure();imshow(A);

A=im2bw(A);

%Structuring element

a=strel('diamond',3);

B2=getnhood(a)

%B2=getnhood(strel('line',7,90)); %%%%neighbourhood associated with structuring element

m=floor(size(B2,1)/2); %%%%rounding off

n=floor(size(B2,2)/2);

%Pad array on all the sides

C=padarray(A,[m n])

D=false(size(A))

for i=1:size(C,1)-(2\*m)

for j=1:size(C,2)-(2\*n)

Temp=C(i:i+(2\*m),j:j+(2\*n));

D(i,j)=max(max(Temp&B2));

end

end

figure(2);

imshow(D)

% erosion

%Structuring element

a1=strel('square',3);

B3=getnhood(a1)

%B2=getnhood(strel('line',7,90)); %%%%neighbourhood associated with structuring element

m1=floor(size(B3,1)/2) %%%%rounding off

n1=floor(size(B3,2)/2);

%Pad array on all the sides

C1=padarray(A,[m1 n1])

D1=false(size(A))

for i=1:size(C1,1)-(2\*m1)

for j=1:size(C1,2)-(2\*n1)

Temp1=C1(i:i+(2\*m1),j:j+(2\*n1));

D1(i,j)=min(min(Temp1&B3));

end

end

figure(3);

imshow(D1)