clc,clear,close all;

% V = zeros(246,300);

I = imread('coins.png');figure;imshow(I);

impixelinfo;title('Original Image');

[r, c]=size(I);

% J = imnoise(I,'gaussian');figure;imshowpair(I,J,'montage');

% K = imnoise(I,'localvar',V);figure;imshowpair(I,K,'montage');

% L = imnoise(I,'poisson');figure;imshowpair(I,L,'montage');

M = imnoise(I,'salt & pepper',0.02);figure;

imshowpair(I,M,'montage');title("Original and noisy image");

% N = imnoise(I,'speckle');figure;imshowpair(I,N,'montage');

maskr = input('Enter mask rows');

maskc = input('Enter mask cols');

rowadd = (maskr - 1)/2;%Row padding

coladd = (maskc - 1)/2;%Column padding

paddedImage = padarray(M,[rowadd,coladd],'replicate');

figure;imshow(paddedImage);impixelinfo;

title('Padded Image with added noise');

for i = 1 + rowadd : r + rowadd%Run uptil total rows

for j = 1 + coladd : c + coladd%Run uptil total columns

subImage = paddedImage(i - rowadd : i + rowadd , j - coladd : j + coladd);

x = reshape(subImage,[1,maskr\*maskc]);

x = sort(x);

med = x((length(x)+1)/2);

result(i, j) = med;

end

end

figure;imshow(result(1 + rowadd : r + rowadd , 1 + coladd : c + coladd));

impixelinfo;title('Restored Image');