```
%%%%%%%%%%%%%%%%%%%%%%
% Dhruv Singh Rawat(15UEC022), Yash Sharma(15UEC076)
clc;
clear all;
close all;
img = imread('input1.PNG');
img2 = rgb2gray(img);
imshow(img); title('INPUT IMAGE');
figure; imshow(img2);
title('INPUT IMAGE CNVT TO GRAYSCALE');
figure;
imhist(img2);
title('INPUT IMAGE HISTOGRAM');
figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
% Adding Noise
j = imnoise(img2,'gaussian',0,0.01);
imshow(j);
title('ADDING GAUSSIAN NOISE TO INPUT IMAGE');
figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
% Plotting Full Image Histogram
imhist(j);
title('INPUT IMAGE NOISE HISTOGRAM'); figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
% Cropping a patch
crop = imcrop(j);
figure; imhist(crop);
title('CROPPING A PATCH TO DETECT NOISE TYPE');
figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
% Now applying the Arthematic Mean filters
h1 = fspecial('average',3);
F_image1 = imfilter(j,h1);
imshow(F_image1);
title('OUTPUT IMAGE AFTER ARTHEMATIC MEAN FILTER 3x3');
figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
% Now applying the MidPoint Filter
f1 = ordfilt2(j, 1, ones(3, 3), 'symmetric');
f2 = ordfilt2(j, 9, ones(3, 3), 'symmetric');
F_image2 = imlincomb(0.5, f1, 0.5, f2);
imshow(F_image2);
title('OUTPUT IMAGE AFTER MIDPOINT FILTER 3x3');
figure;
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
```

```
% Now applying the Harmonic Mean Filter
F_image3 = medfilt2(j, [3 3], 'symmetric');
imshow(F_image3);
title('OUTPUT IMAGE AFTER HARMONIC MEAN FILTER 3x3');
```

Published with MATLAB® R2018a