BİL421-İmge İşleme
Lab-4

1. FILTERING IN FREQUENCY DOMAIN

```
clear, clc
I = imread('eight.tif');
% I = imread('cameraman.tif');
fI=fft2(I);
fS=fftshift(fI); %frekans spektrumunu imajın ortasına öteler

mx=max(max(fS)); %Sonucu duzgun gorebilmek icin 0-255 araligina ceker
mn=min(min(fS));
figure, imshow(fS/(mx-mn)*255)
title('FFT of Original image');

[x y]=size(fI);
H = fspecial('average',9);
fH=fft2(H,x,y);
fS=fftshift(fH);
figure, imshow(fS)
title('FFT of Average Filter');

fNI=fI.*fH;
NI=ifft2(fNI);
figure, imshow(uint8(NI))
title('New Image (Average Filter applied)');

NI=imfilter(I,H);%,'replicate');
figure, imshow(NI)
title('New Image with 2D CONVOLUTION');
```

2. NOISE GENERATION

```
clear, clc
d=0.02; %noise density
I = imread('eight.tif');
figure, imshow(I)
title('Original image');

J = imnoise(I,'salt & pepper',d);
figure, imshow(J)
title('Image with Salt & Pepper Noise');

m=0;    %mean
v=0.01; %variance
J = imnoise(I,'gaussian',m,v);
figure, imshow(J)
title('Image with Gaussian Noise');
```