**GÖRÜNTÜ İŞLEME**

**DERS5**

**KESME**

I = imread("lavanta.jpg");

I2= I(100:200 , 300:400, : ); **%kesme**

subplot(1,2,1); imshow(I); subplot(1,2,2); imshow(I2)

**GRİ**

I = imread("lavanta.jpg");

I2 = (I(:,:,1)+I(:,:,2)+I(:,:,3))/3;

subplot(1,2,1); imshow(I); subplot(1,2,2); imshow(I2)

**GRİ2**

I = imread("lavanta.jpg");

I2 = (I(:,:,1)+I(:,:,2)+I(:,:,3))/3;

I3 = I(:,:,3);

subplot(1,3,1); imshow(I); subplot(1,3,2); imshow(I2); subplot(1,3,3); imshow(I3);

**GRİ3**

I = imread("lavanta.jpg");

I2 = (I(:,:,1)\*0.3+I(:,:,2)\*0.58+I(:,:,3)\*0.11)/3;

I3 = I(:,:,3);

subplot(1,3,1); imshow(I); subplot(1,3,2); imshow(I2); subplot(1,3,3); imshow(I3);

**BRIGHTNESS**

I = imread("lavanta.jpg");

I2=I;

%C Color

[M, N, C] = size(I);

for i=1:M

for j=1:N

for c=1:C

x=I(i,j,c)\*1.4;

if x>255

x = 255;

end

I2(i,j,c)=x;

end

end

end

subplot(1,2,1); imshow(I); subplot(1,2,2); imshow(I2)

imwrite(I2,"afghan\_girl\_remastered.jpeg") % saving işlemi

**FILTER**

I = imread("lavanta.jpg");

I2=I;

%C Color

[M, N, C] = size(I);

for i=1:M

for j=1:N

x=I(i,j,3)\*1.4; **% 1 ise red 2 ise green 3 ise blue**

if x>255

x = 255;

end

I2(i,j,3)=x; **% 1 ise red 2 ise green 3 ise blue**

end

end

subplot(1,2,1); imshow(I); subplot(1,2,2); imshow(I2)

**NEGATIVE**

I = imread("lavanta.jpg");

I2=I;

[M, N, C] = size(I);

for i=1:M

for j=1:N

for c=1:C

I2(i,j,c) = 255 - I(i,j,c);

end

end

end

I3 = 255 - I;

subplot(1,3,1); imshow(I); subplot(1,3,2); imshow(I2); subplot(1,3,3); imshow(I3);

**SEPIA**

I = imread("lavanta.jpg");

inputRed = I(:,:,1); **%// Extract each colour plane**

inputGreen = I(:,:,2);

inputBlue = I(:,:,3);

outputRed = (inputRed \* .393) + (inputGreen \*.769) + (inputBlue \* .189);

outputGreen = (inputRed \* .349) + (inputGreen \*.686) + (inputBlue \* .168);

outputBlue = (inputRed \* .272) + (inputGreen \*.534) + (inputBlue \* .131);

I2 = (I(:,:,1)\*0.3+I(:,:,2)\*0.58+I(:,:,3)\*0.11)/3;

I3 = I(:,:,3);

I4 = uint8(cat(3, outputRed, outputGreen, outputBlue));

subplot(1,4,1); imshow(I); subplot(1,4,2); imshow(I2);

subplot(1,4,3); imshow(I3); subplot(1,4,4); imshow(I4);

**SİMETRİ**

I = imread("lavanta.jpg");

I2=I;

I3=I;

%C Color

[M, N, C] = size(I); **%fotografin boyut degerlerini aldik.**

for i=1:M

for j=1:N

for c=1:C

I2(i,N-j+1,c) = I(i,j,c); **% y eksenine göre simetri**

I3(M-i+1,j,c) = I(i,j,c); **% x ekseni göre simetri**

end

end

end

subplot(1,3,1); imshow(I);subplot(1,3,2);imshow(I2);subplot(1,3,3);imshow(I3);

**DERS6**

**RESIZE-Reduction**

I = imread("araba.jpg");

I2=I;

[M, N, C] = size(I); %fotografin boyut degerlerini aldık.

%I2 = zeros(M/2,N/2,C);

%I2 = uint8(I2);

for i=1:2:M %image in kolon ve satır sayısını yarıya indirmek için-

for j=1:2:N % - 2 serli(2ser artar) döngü yaptık

for c=1:C

I2(i/2+0.5,j/2+0.5,c) =(I(i,j,c)+I(i+1,j,c)+I(i,j+1,c)+I(i+1,j+1,c))/4;

end

end

end

I2 = uint8(I2);

subplot(1,2,1); imshow(I); %original image

subplot(1,2,2); imshow(I2); %resize image

%imwrite(I2,"araba.jpg");

%imshow(I2(1:M/2,1:N/2,:)) % burasını command window a yazdık ve küçük

%resmi gördük

%imshow(I(1:2:end, 1:2:end,:)) % pixellerin yarısını okuyarak gider yani

%image bozulur

**CHANGED RGB**

I = imread("araba.jpg");

I2=I;

R = I(:,:,1);

G = I(:,:,2);

B = I(:,:,3);

I2(:,:,1) = B;

I2(:,:,1) = R;

I2(:,:,1) = G;

I3 = I +50;

subplot(1,4,1);

imshow(I); %Original image

subplot(1,4,2);

imshow(I2); %RGB change image

subplot(1,4,3);

imshow(I3); %Parlaklık arttırımı