function [enhancI]= gammacorrection (I);

I=rgb2gray(I);

I=mat2gray(I);

size=size(I);

sizex=size(1);

sizey=size(2);

sum1=0.0;

mean=sum(sum(I))/(sizex\*sizey);

for i=1:sizex

for j=1:sizey

sum1=sum1+(abs(I(i,j)-0.5));

end

end

var=sum1/(sizex\*sizey);

gamma=mean/var;

imshow(I);

title({['average of brightness: ' num2str(mean)];['average of distance from center: ' num2str(var)];['gamma: ' num2str(gamma)]});

figure;

imhist(I);

figure;

enhancI=imadjust(I,[],[],gamma);

meanenhancI=sum(sum(enhancI))/(sizex\*sizey);

sum2=0.0;

for i=1:sizex

for j=1:sizey

sum2=sum2+(abs(enhancI(i,j)-0.5));

end

end

varenhancI=sum2/(sizex\*sizey);

imshow(enhancI);

title({['average of brightness: ' num2str(meanenhancI)];['average of distance from center: ' num2str(varenhancI)]});

figure;

imhist(enhancI);