**LAB-6**

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**15BEC1221**

**Aim:**

To study frequency domain analysis of the images

**Tool Used:**

MATLAB(Matrix Laboratory)

**Matlab Code:**

Horizontal edges

closeall;

clearall;

clc;

a=imread('images.jpg');

a=rgb2gray(a);

figure;

imshow(a);

title('Original image');

[m,n]=size(a);

c=((fft2(a)));

figure;

imshow(c);

d=fftshift(c);

figure;

imshow(d);

title('Image after fft and fft shift');

[q,k]=size(d);

fori=1:q

for j=1:k

e(i,j)=0.3\*log10(abs((d(i,j)))+1);

end

end

figure;

imshow(e);

title('Final Image');





Vertical edges

closeall;

clearall;

clc;

a=imread('vert.png');

%%a=rgb2gray(a);

figure;

imshow(a);

title('Original image');

[m,n]=size(a);

c=((fft2(a)));

figure;

imshow(c);

d=fftshift(c);

figure;

imshow(d);

title('Image after fft and fft shift');

[q,k]=size(d);

fori=1:q

for j=1:k

e(i,j)=0.3\*log10(abs((d(i,j)))+1);

end

end

figure;

imshow(e);

title('Final Image');





Diagonal edges

closeall;

clearall;

clc;

a=imread('diag.png');

%%a=rgb2gray(a);

figure;

imshow(a);

title('Original image');

[m,n]=size(a);

c=((fft2(a)));

figure;

imshow(c);

d=fftshift(c);

figure;

imshow(d);

title('Image after fft and fft shift');

[q,k]=size(d);

fori=1:q

for j=1:k

e(i,j)=0.3\*log10(abs((d(i,j)))+1);

end

end

figure;

imshow(e);

title('Final Image');





Scaled edges

closeall;

clearall;

clc;

a=imread('sca.jpg');

a=rgb2gray(a);

figure;

imshow(a);

title('Original image');

[m,n]=size(a);

c=((fft2(a)));

figure;

imshow(c);

d=fftshift(c);

figure;

imshow(d);

title('Image after fft and fft shift');

[q,k]=size(d);

fori=1:q

for j=1:k

e(i,j)=0.3\*log10(abs((d(i,j)))+1);

end

end

figure;

imshow(e);

title('Final Image');





**Translated foreground**

closeall;

clearall;

clc;

a=imread('trans.jpg');

a=rgb2gray(a);

figure;

imshow(a);

title('Original image');

[m,n]=size(a);

c=((fft2(a)));

figure;

imshow(c);

d=fftshift(c);

figure;

imshow(d);

title('Image after fft and fft shift');

[q,k]=size(d);

fori=1:q

for j=1:k

e(i,j)=0.3\*log10(abs((d(i,j)))+1);

end

end

figure;

imshow(e);

title('Final Image');



