```matlab
a=imread('A:/mouse/lion.jpg');

imshow(a)

af=fftshift(fft2(a));   %% using 2D DFT and fftshift✓
command.

fftshow(af)

g= highpass(af);        %% calling highpass filter✓
function.

conv=af.*g;             %% convolution in frequency✓
domain is simply the.
                        %% multiplication of the✓
corresponding.
                        %% elements of two matrix.

fftshow(conv)           %% calling fftshow function.

convi=ifft2(conv);      %% inverse fourier transform.

ifftshow(convi)         %% calling ifftshow function.


%% highpass function's code

function [ c ] = highpass(im)

h=size(im,1);        %% height and width of the input✓
image.
w=size(im,2);
```

```matlab
[x,y] = meshgrid(-floor(w/2):floor((w-1)/2),-floor
(h/2):floor((h-1)/2));
                    %% mesh using height and width
of the image.
z= sqrt(x.^2+y.^2);
                    %% radial distance z from origin
(0,0).
c= z>30;
                    %% applying a cutoff value on z.

end
```

```matlab
%% fftshow function's code
function [] = fftshow(f)

f1=log (1+abs(f));   %% DC value is quite high in
comparison with others..,thats why log scale)

fm = max(f1(:));     %% taking maximum value of fm
across all elements.

figure, imshow(f1/fm);

end
```

```matlab
%% ifftshow function's code
function [] = ifftshow(f)
```

```matlab
f1 = abs(f);                %% taking absolute value↙
bcz ifft gives complex result.

fm = max(f1(:));

figure, imshow(f1/fm);
end
```