A=imread('peppers.png');  
B=rgb2gray(A);  
  
C=double(B);  
  
  
for i=1:size(C,1)-2  
    for j=1:size(C,2)-2  
        %Sobel mask for x-direction:  
        Gx=((2\*C(i+2,j+1)+C(i+2,j)+C(i+2,j+2))-(2\*C(i,j+1)+C(i,j)+C(i,j+2)));  
        %Sobel mask for y-direction:  
        Gy=((2\*C(i+1,j+2)+C(i,j+2)+C(i+2,j+2))-(2\*C(i+1,j)+C(i,j)+C(i+2,j)));  
        
        %The gradient of the image  
        %B(i,j)=abs(Gx)+abs(Gy);  
        B(i,j)=sqrt(Gx.^2+Gy.^2);  
        
    end  
end  
figure,imshow(B);

title('Sobel gradient');