

---

```

clc;
close all;
clear all;

% Read Colour Image and convert it to a grey level Image
% Display the original Image
mycolourimage = imread('image1.jpg');
myimage = rgb2gray(mycolourimage);
subplot(3,3,1);
imshow(myimage); title('Original Image');

% Apply Sobel Operator
% Display only the horizontal Edges
sobelhz = edge(myimage,'sobel','horizontal');
subplot(3,3,2);
imshow(sobelhz,[]); title('Sobel - Horizontal Edges');

% Apply Sobel Operator
% Display only the vertical Edges
sobelvrt = edge(myimage,'sobel','vertical');
subplot(3,3,3);
imshow(sobelhz,[]); title('Sobel - Vertical Edges');

% Apply Sobel Operator
% Display both horizontal and vertical Edges
sobelvrthz = edge(myimage,'sobel','both');
subplot(3,3,4);
imshow(sobelvrthz,[]); title('Sobel - All edges');

% Read Colour Image and convert it to a grey level Image
% Display the original Image
mycolourimage = imread('image1.jpg');
myimage = rgb2gray(mycolourimage);
subplot(3,3,1);
imshow(myimage); title('Original Image');

% Apply Prewitt Operator
% Display both horizontal and vertical Edges
Prewittsedg = edge(myimage,'prewitt');
subplot(3,3,6);
imshow(Prewittsedg,[]); title('Prewitt - Edges');

% Read Colour Image and convert it to a grey level Image
% Display the original Image
mycolourimage = imread('image1.jpg');
myimage = rgb2gray(mycolourimage);
subplot(3,3,1);
imshow(myimage); title('Original Image');

% Apply Roberts Operator
% Display both horizontal and vertical Edges
robertsedg = edge(myimage,'roberts');

```

---

---

```

subplot(3,3,5);
imshow(robertsedg,[]); title('Roberts - Edges');

% Read Colour Image and convert it to a grey level Image
% Display the original Image
mycolourimage = imread('image1.jpg');
myimage = rgb2gray(mycolourimage);
subplot(3,3,1);
imshow(myimage); title('Original Image');

% Apply Laplacian Filter
f=fspecial('laplacian');
lapedg = imfilter(myimage,f,'symmetric');
subplot(3,3,7);
imshow(lapedg,[]); title('Laplacian Filter');

% Read Colour Image and convert it to a grey level Image
% Display the original Image
mycolourimage = imread('image1.jpg');
myimage = rgb2gray(mycolourimage);
subplot(3,3,1);
imshow(myimage); title('Original Image');

% Apply Canny edge detection
cannyedg = edge(myimage,'canny');
subplot(3,3,9);
imshow(cannyedg,[]); title('Canny Edge');

```

