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PCD A

TUGAS PCD :

1. Carilah gambar/citra, dan tampilkan output dari citra sebelum dan sesudah perbaikan citra, serta tampilkan coding Matlab untuk melakukan proses perbaikan citra tersebut, jika citra tersebut dilakukan operasi deteksi tepi dengan konvolusi :
    a. Sobel
        - Coding Matlab

```
>> a = imread('lena.bmp');
SxSobel = [ -1 0 1 ; -2 0 2; -1 0 1 ]
SySobel = [ 1 2 1 ; 0 0 0 ; -1 -2 -1 ]
sobelSx = conv2(a, SxSobel);
sobelSy = conv2(a, SySobel);
sobel = abs(sobelSx) + abs(sobelSy);

SxSobel =

    -1     0     1
    -2     0     2
    -1     0     1


SySobel =

     1     2     1
     0     0     0
    -1    -2    -1
```

    b. Prewitt
        - Coding Matlab

```
>> perX = [ -1 0 1 ; -1 0 1; -1 0 1 ]
perY = [ 1 1 1 ; 0 0 0 ; -1 -1 -1 ]
perwitX = conv2(a, perX);
perwitY = conv2(a, perY);
perwitt = abs(perwitX) + abs(perwitY);

perX =

    -1     0     1
    -1     0     1
    -1     0     1


perY =

     1     1     1
     0     0     0
    -1    -1    -1
```

c. Robert

- Coding Matlab

```
>> robX = [ 1 0 ; 0 -1 ]
robY = [ 0 1 ; -1 0 ]
robertX = conv2(a, robX);
robertY = conv2(a, robY);
roberts = abs(robertX) + abs(robertY);

robX =

     1     0
     0    -1


robY =

     0     1
    -1     0
```

d. Laplacian of Gaussian (LoG)

- Coding Matab

```
>> Log = edge(a,'log');
```

➢ Hasil Deteksi Tepi

- Coding Output atau imshow

```
>> subplot(2,3,1), imshow(a);title('Asli');
subplot(2,3,2), imshow(uint8(sobel));title('Sobel');
subplot(2,3,3), imshow(uint8(roberts));title('Roberts');
subplot(2,3,4), imshow(uint8(perwitt));title('Perwitt');
subplot(2,3,5), imshow(Log);title('Laplacian of Gaussian (LoG)');
```

- Gambar hasil
  Lanjutannya ada dibawah