Report

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Laplace Mask1 (0, 1, 0, 1, -4, 1, 0, 1, 0): Threshold=15

Laplace Mask2 (1, 1, 1, 1, -8, 1, 1, 1, 1) Threshold=15

Minimum variance Laplacian: Threshold=20

Laplace of Gaussian: Threshold=3000

Difference of Gaussian: Threshold=1

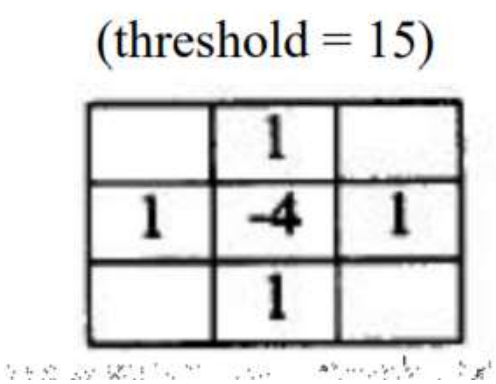
Function:

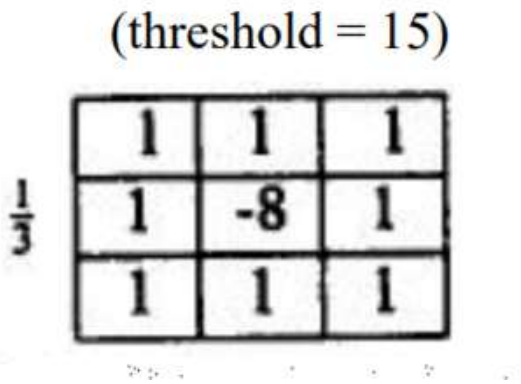
(1) This is use for 3x3 matrix.

```
void Laplacian(Mat &img, Mat src, double threshold, int kernel[3][3], double plus_n
umber)
```

(2) This is use for 11x11 matrix.

```
void Laplacian_kernel11(Mat &img, Mat src, double threshold, int kernel[11][11])
```





Mask for first and second image.

$\frac{1}{3}$

2	-1	2
-1	-4	-1
2	-1	2

The Mask for the third image.

0	0	0	-1	-1	-2	-1	-1	0	0	0
0	0	-2	-4	-8	-9	-8	-4	-2	0	0
0	-2	-7	-15	-22	-23	-22	-15	-7	-2	0
-1	-4	-15	-24	-14	-1	-14	-24	-15	-4	-1
-1	-8	-22	-14	52	103	52	-14	-22	-8	-1
-2	-9	-23	-1	103	178	103	-1	-23	-9	-2
-1	-8	-22	-14	52	103	52	-14	-22	-8	-1
-1	-4	-15	-24	-14	-1	-14	-24	-15	-4	-1
0	-2	-7	-15	-22	-23	-22	-15	-7	-2	0
0	0	-2	-4	-8	-9	-8	-4	-2	0	0
0	0	0	-1	-1	-2	-1	-1	0	0	0

The kernel for fourth image.

-1	-3	-4	-6	-7	-8	-7	-6	-4	-3	-1
-3	-5	-8	-11	-13	-13	-13	-11	-8	-5	-3
-4	-8	-12	-16	-17	-17	-17	-16	-12	-8	-4
-6	-11	-16	-16	0	15	0	-16	-16	-11	-6
-7	-13	-17	0	85	160	85	0	-17	-13	-7
-8	-13	-17	15	160	283	160	15	-17	-13	-8
-7	-13	-17	0	85	160	85	0	-17	-13	-7
-6	-11	-16	-16	0	15	0	-16	-16	-11	-6
-4	-8	-12	-16	-17	-17	-17	-16	-12	-8	-4
-3	-5	-8	-11	-13	-13	-13	-11	-8	-5	-3
-1	-3	-4	-6	-7	-8	-7	-6	-4	-3	-1

The kernel for fifth image.

```
void zco(Mat &img, Mat src)
```

The function use in Laplacian function, make the Laplacian's result to the final imagine.