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UTS_Pengolahan Citra Digital

Soal 1

Citra

4	4	3	5	4
6	6	5	5	2
5	6	6	6	2
6	7	5	5	3
3	5	2	4	4

Mask

0	-1	0
-1	4	-1
0	-1	0

Perkalian Baris pertama

$$6 = (4*0) + (4*(-1)) + (3*0) + (6*(-1)) + (6*4) + (5*(-1)) + (5*0) + (6*(-1)) + (6*0)$$

$$= 3$$

$$5 = (4*0) + (3*(-1)) + (5*0) + (6*(-1)) + (5*4) + (5*(-1)) + (6*0) + (6*(-1)) + (6*0)$$

$$= 0$$

$$5 = (3*0) + (5*(-1)) + (4*0) + (5*(-1)) + (5*4) + (2*(-1)) + (6*0) + (6*(-1)) + (2*0)$$

4	4	3	5	4
6	6	5	5	2
5	6	6	6	2
6	7	5	5	3
3	5	2	4	4

$$= 2$$

Perkalian Baris Kedua

$$6 = (6*0) + (6*(-1)) + (5*0) + (5*(-1)) + (6*4) + (6*(-1)) + (6*0) + (7*(-1)) + (5*0)$$

$$= 0$$

$$6 = (6*0) + (5*(-1)) + (5*0) + (6*(-1)) + (6*4) + (6*(-1)) + (7*0) + (5*(-1)) + (5*0)$$

$$= 2$$

$$6 = (5*0)+(5*(-1))+(2*0)+(6*(-1))+(6*4)+(2*(-1))+(5*0)+(5*(-1))+(3*0)$$

$$= 6$$

Perkalian baris ketiga

$$7 = (5*0)+(6*(-1))+(6*0)+(6*(-1))+(7*4)+(5*(-1))+(3*0)+(5*(-1))+(2*0)$$

$$= 6$$

$$5 = (6*0)+(6*(-1))+(6*0)+(7*(-1))+(5*4)+(5*(-1))+(5*0)+(2*(-1))+(4*0)$$

$$= 0$$

$$5 = (6*0)+(6*(-1))+(2*0)+(5*(-1))+(5*4)+(3*(-1))+(2*0)+(4*(-1))+(4*0)$$

$$= 2$$

Maka Hasilnya adalah :

4	4	3	5	4
6	3	0	2	2
5	0	2	6	2
6	6	0	2	3
3	5	2	4	4

Hasil Pembuktian dengan Octave :

```

Command Window
Command Window
h =

    4    4    3    5    4
    6    6    5    5    2
    5    6    6    6    2
    6    7    5    5    3
    3    5    2    4    4

f =

    0   -1    0
   -1    4   -1
    0   -1    0

HasilKovolusi =

    6    3   -2    8    9
    9    3    0    2   -3
    2    0    2    6   -3
    9    6    0    2    1
    1    8   -6    5    9

```

Hasil Konvolusi Gambar

