

Input Matrix:

5 1 1 2 2 2 2
 2 1 1 1 1 1 2
 2 2 2 2 2 1 5
 5 1 1 2 2 2 2
 2 1 1 1 1 1 2
 2 2 2 2 2 1 5

Kernel Matrix:

0 1 0
 0 3 0
 0 1 0

$$\begin{aligned}
 &A[0][3] \cdot K[0][0] + \\
 &A[0][4] \cdot K[0][1] + \\
 &A[0][5] \cdot K[0][2] + \\
 &A[1][3] \cdot K[1][0] +
 \end{aligned}$$

$$\text{Output}[i][j] = \sum_{k=0}^{i-k} \sum_{y=0}^{j-k} A[i+k][j+y] \cdot K[k][y]$$

Output = 6 6 7 7 6 6
 8 8 9 9 6 6
 6 6 9 9 8 8
 6 6 7 7 6 6

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