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Assignment - 2

Input

Padding - 1   Stride - 1

$$
\begin{array}{ccccc}
0 & 1 & 1 & 0 & 1 \\
0 & 1 & 1 & 0 & 1 \\
0 & 1 & 1 & 0 & 1 \\
0 & 1 & 1 & 0 & 1 \\
0 & 1 & 1 & 0 & 1 \\
\end{array}
$$

$$
\begin{array}{ccccccc}
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
$$

Padding + Filter 1

$$
\begin{array}{ccc}
1 & 0 & 1 \\
1 & 1 & 1 \\
0 & 0 & 1 \\
\end{array}
\quad = \quad
\begin{array}{ccccc}
2 & 3 & 2 & 3 & 1 \\
3 & 4 & 3 & 5 & 1 \\
3 & 4 & 3 & 5 & 1 \\
3 & 4 & 3 & 5 & 1 \\
2 & 3 & 3 & 4 & 1 \\
\end{array}
$$

Padding * Filter 2

$$
\begin{array}{ccccccc}
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
\quad * \quad
\begin{array}{ccc}
0 & 0 & 1 \\
1 & 0 & 0 \\
0 & 1 & 1 \\
\end{array}
$$

After filter -2   Filter -1

1   2   2   2   1   2   3   2   3   1
1   3   2   3   1   +   3   4   3   5   1
2   3   2   3   1   3   4   3   5   1
2   3   2   3   1   3   4   3   5   1
1   1   1   2   0   2   3   3   4   1

        3   5   4   5   2
  =   5   7   5   8   2
        5   7   5   8   2
        5   7   5   8   2
        3   4   4   6   1

max   pooling   2x2   stride = 1

    7   7   8   8
    7   7   8   8
    7   7   8   8
    7   7   8   8

                        Ans: