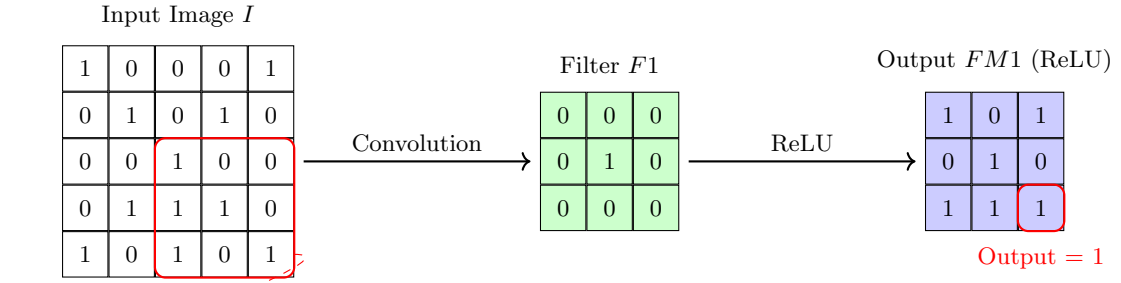
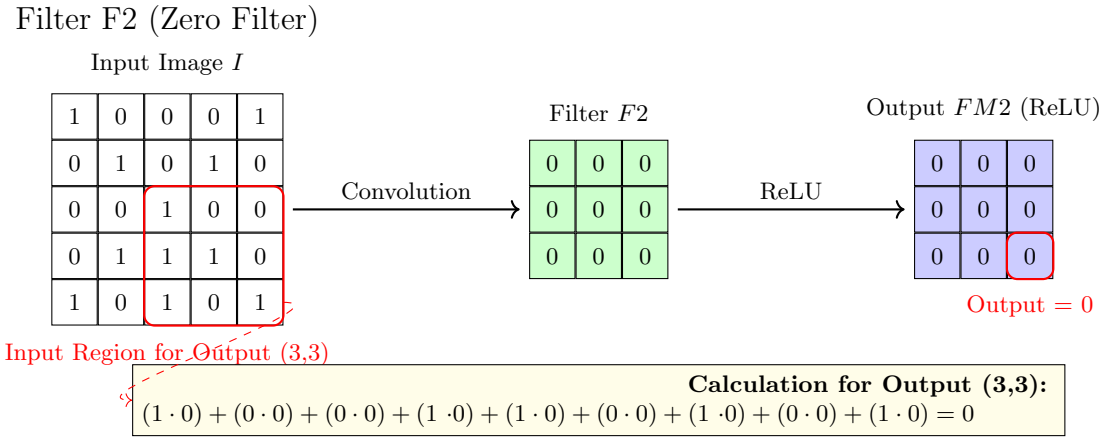
Filter F1 (Identity Filter)

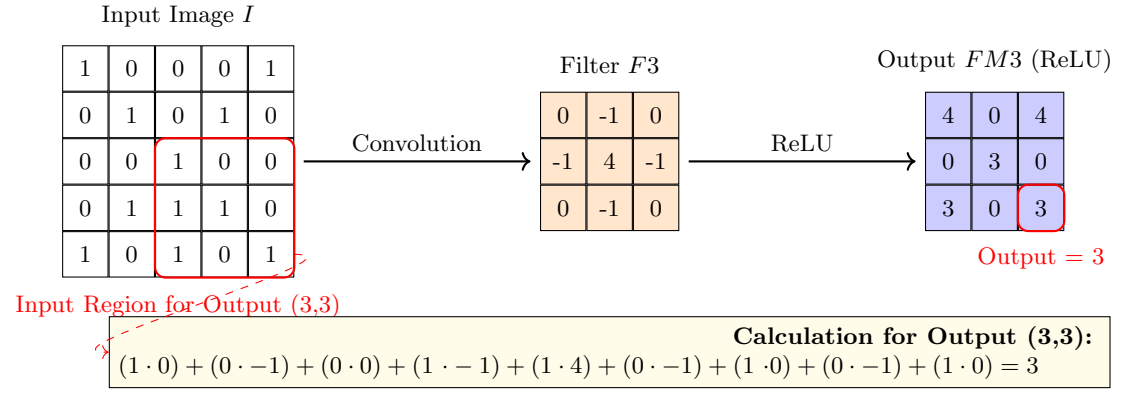


Calculation for Output (3,3):

$$(1 \cdot 0) + (0 \cdot 0) + (0 \cdot 0) + (1 \cdot 0) + (1 \cdot 1) + (0 \cdot 0) + (1 \cdot 0) + (0 \cdot 0) + (1 \cdot 0) = 1$$


Filter F2 (Zero Filter)
Input Image I
1 0 0 0 1
0 1 0 1 0
0 0 1 0 0
0 1 1 1 0
1 0 1 0 1
Convolution
Filter $F2$
0 0 0
0 0 0
0 0 0
ReLU
Output $FM2$ (ReLU)
0 0 0
0 0 0
0 0 0
Output = 0
Input Region for Output (3,3)
Calculation for Output (3,3):
$(1 \cdot 0) + (0 \cdot 0) + (0 \cdot 0) + (1 \cdot 0) + (1 \cdot 0) + (0 \cdot 0) + (1 \cdot 0) + (0 \cdot 0) + (1 \cdot 0) = 0$

Filter F3 (Edge Detector)



Calculation for Output (3,3):

$$(1 \cdot 0) + (0 \cdot -1) + (0 \cdot 0) + (1 \cdot -1) + (1 \cdot 4) + (0 \cdot -1) + (1 \cdot 0) + (0 \cdot -1) + (1 \cdot 0) = 3$$