Jessica Navarro
ITAI 1378
A07

1	1	1	0	0	1	1	1
1	1	1	0	0	1	1	1
1	1	1	0	0	1	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	1	0	0	1	1	1
1	1	1	0	0	1	1	1
1	1	1	0	0	1	1	1

Image

1	0	-1
1	0	-1
1	0	-1

Vertical Edge Filter

0	0	0
1	1	1
-1	-1	-1

Horizontal Edge Filter

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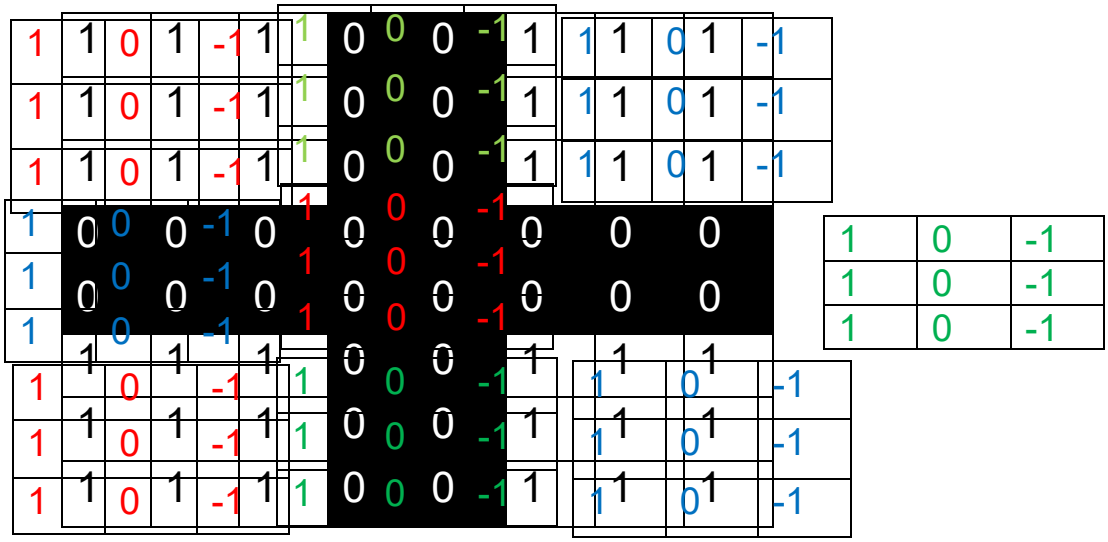
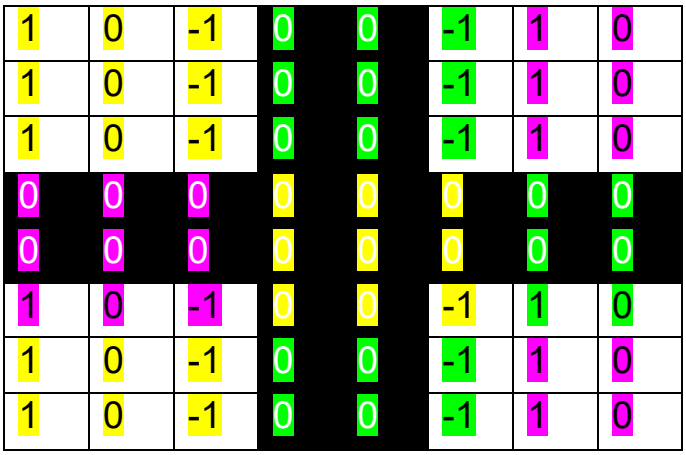


Image with Vertical Edge Filter



Output Image

0 + (-3) + 3 = 0
0 + (-1) + 1 = 0
0 + (-2) + 2 = 0
Total = 0

I applied a 3×3 vertical edge detection filter and performed a convolution operation, multiplying and summing values at each step. Each row summed to 0, meaning this specific region of the image does not show a strong vertical edge, resulting in an output pixel of 0 (no change).

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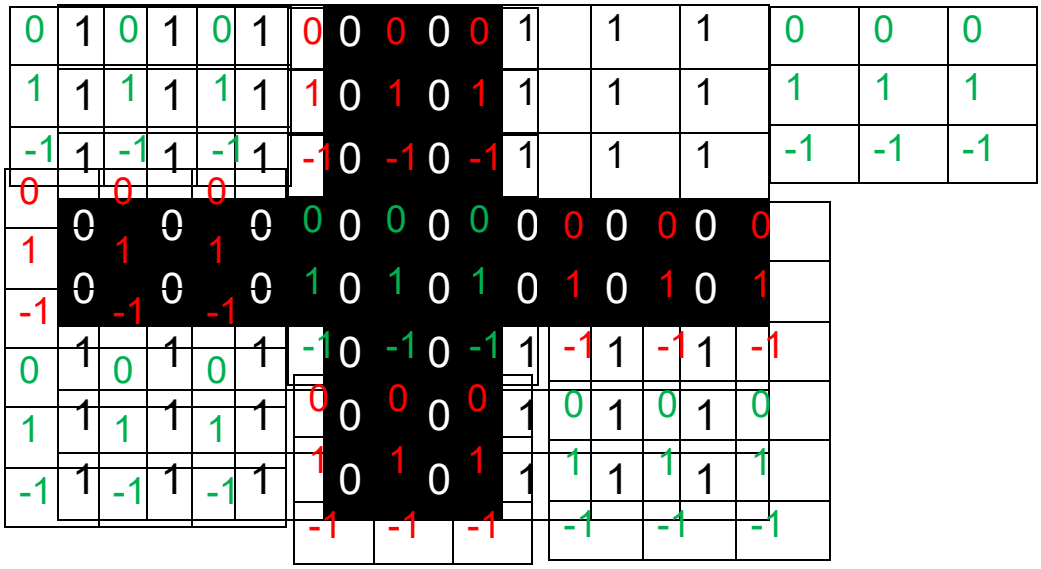
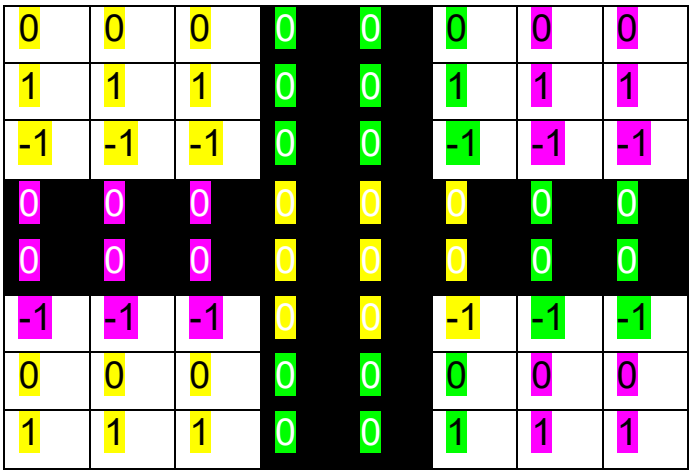


Image with Horizontal Edge Filter



Output Image

0 + 0 + 0 = 0
(-3) + (-1) + (-1) = -6
3 + 1 + 2 = 6
Total = 0

I applied a 3×3 horizontal edge detection filter and performed a convolution operation, multiplying and summing values at each step. The first row summed to 0, meaning there is no change at the top. The second row summed to -6, indicating a strong negative response, which suggests a dark region in the middle. The third row summed to 6, indicating a strong positive response, which suggests a bright region at the bottom. Since the final output is 0, it means the changes are balanced, leading to cancellation when summed. The image doesn't contain a strong horizontal edge.