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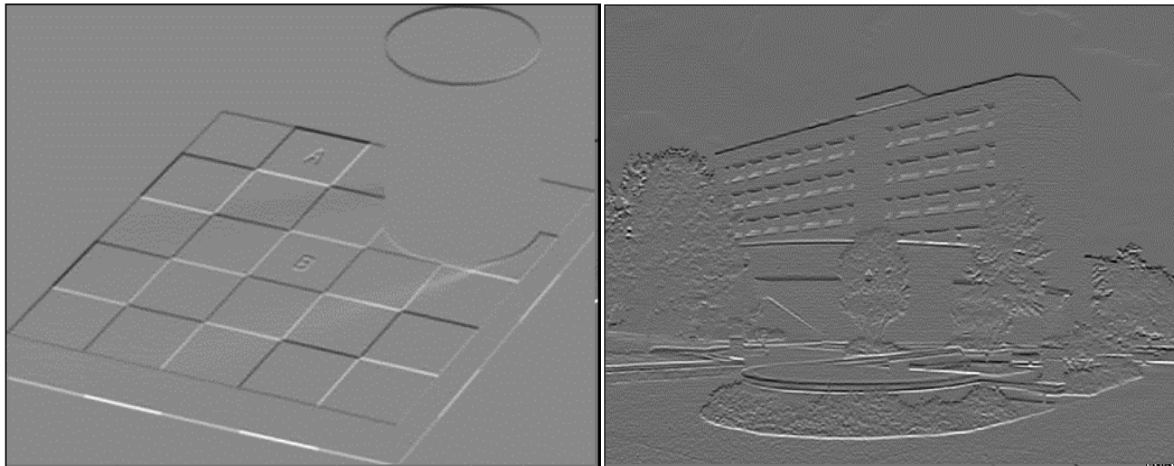
Homework 3

Task 1

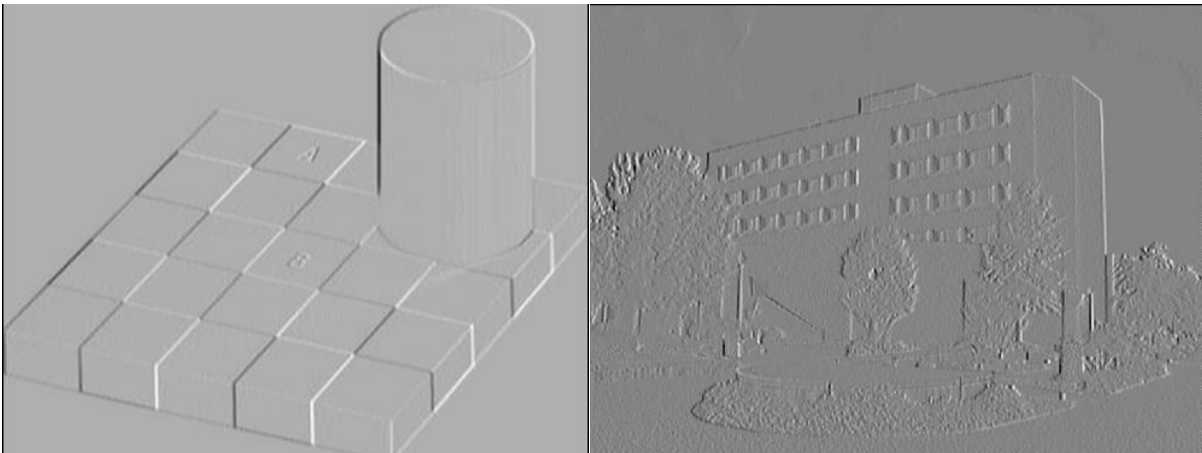
Description: The code is called process_image1.c change it to process_image.c for it to work

Depending on the chosen Sobel equation, I applied a 3x3 Sobel filter template to the input image matrix in this code to detect edges. Convolution with the selected Sobel filter was carried out by iterating through the picture matrix. To make later normalization easier, I kept track of both the lowest and maximum values during this convolution. Following the convolution process, I recalculated and normalized the convolution results, ultimately generating a processed image matrix that highlights edges and features in the input image based on the selected Sobel equation.

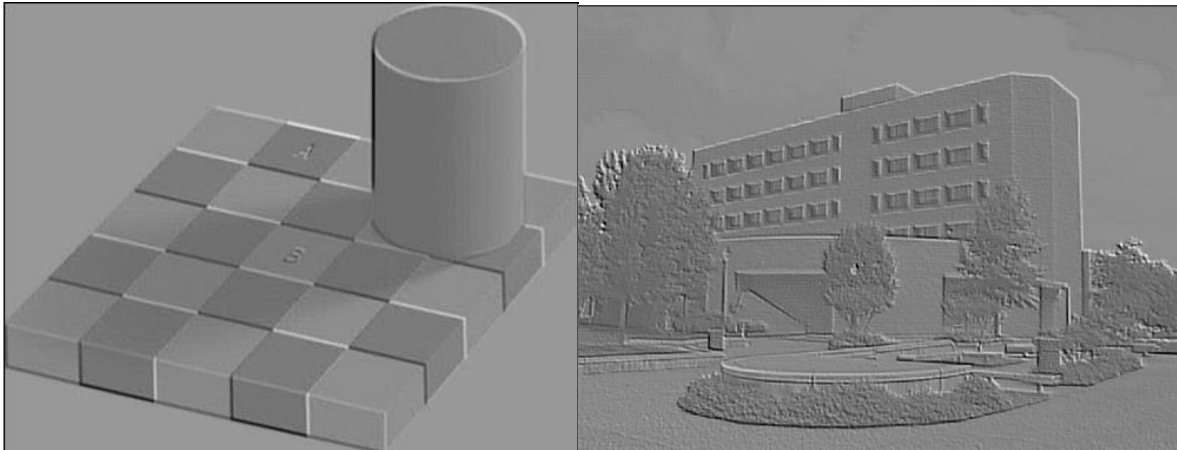
Vert



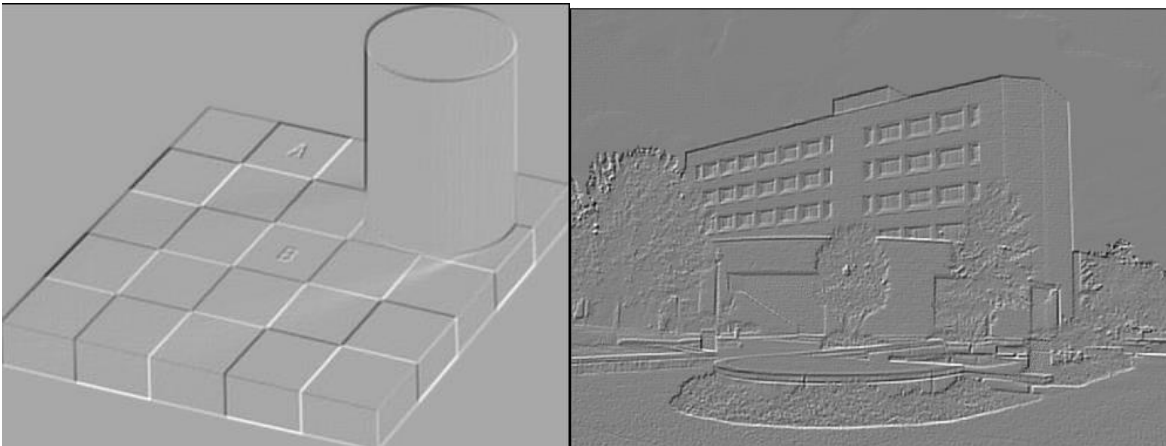
Horz



majDiag



minDiag

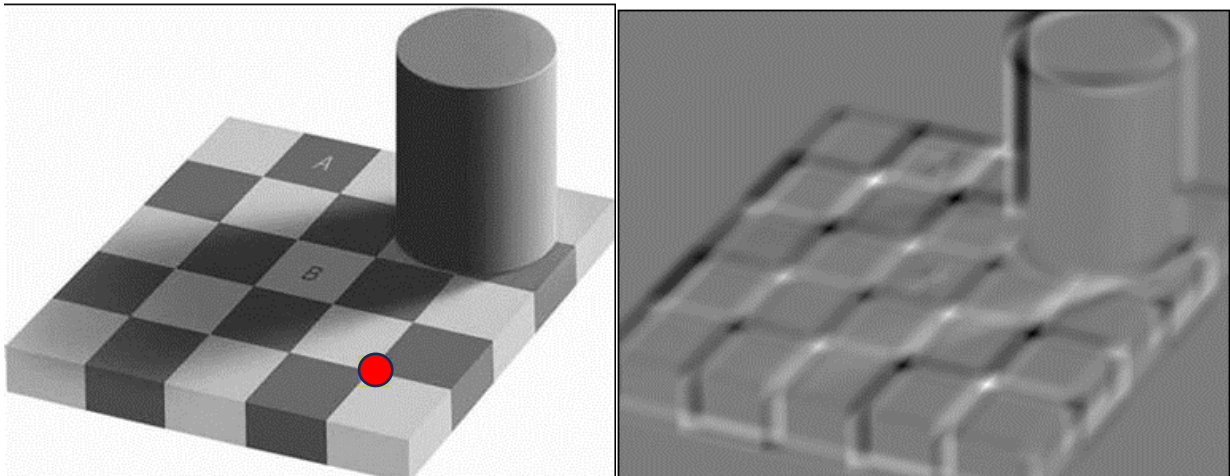


Task 2

Description: The code is called process_image2.c change it to process_image.c for it to work

I use the input image to extract a region of interest (ROI), and then I use its measurements to construct a template array. Next, it determines the template's mean and the input image's overall standard deviation. The main process entails utilizing the template to perform convolution at various locations within the input image and calculating the normalized cross-correlation values for each point. The lowest and maximum correlation values are monitored throughout this procedure. To produce the processed image that is suitable for display or additional analysis, the computed correlation values are finally normalized to the range $[0, 255]$ depending on the minimum and maximum values discovered. The results are then placed in the proc_img array.

Chess:



Nedderman:

