Mini HW 3 for Module 1:

1. In the provided Sobel.c code, the dimensions of the xmask is 3x3, and hence MR is 1. Suppose the dimensions of xmask had been 7x7, what would the value of MR need to be?

mr indicates the number of neighbor woes that are considered while calculating the output values, if I consider that with a 3x3 matrix mr is equals to 1, I can consider the neighbors for the 7x7 on the left top, right, and bottom, I can say that mr would be equals to 3.

1. In the provided Sobel.c code, what is the purpose of the “b” in “wb” and “rb” for fopen?

In C programming the b represents a flag that is used when we want to deal with binary files.

1. In the provided Sobel.c code, why does the double-for loop process have the mr in the code? i.e., why do the loops go for

for (i=mr;i<256-mr;i++)

for (j=mr;j<256-mr;j++)

the mr represents the number of neighboring row or columns to be present around that are considered while calculating the weighted values.

1. In the provided Sobel.c code, what is the purpose of maxival, and explain why the code has the line

ival[i][j] = (ival[i][j] / maxival) \* 255;

The values of the iteration are calculated from output and output matrix and then the highest of all values is stores in maxival. What the code is doing here is converting the maping to one of tehe color values between 0 and 255.