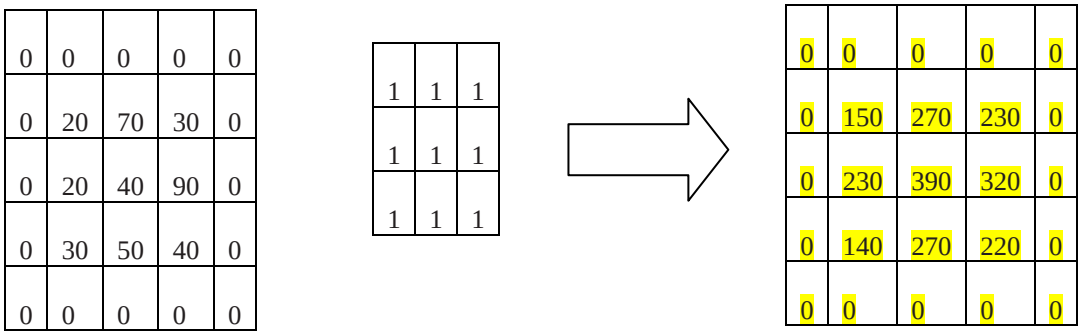
Q1) [15 puan] Thresholding (Eşikleme) operasyonunu birkaç cümleyle alttaki boşluğa sığacak şekilde açıklayınız. *(Explain thresholding operation briefly and write your answer only in the below space)*

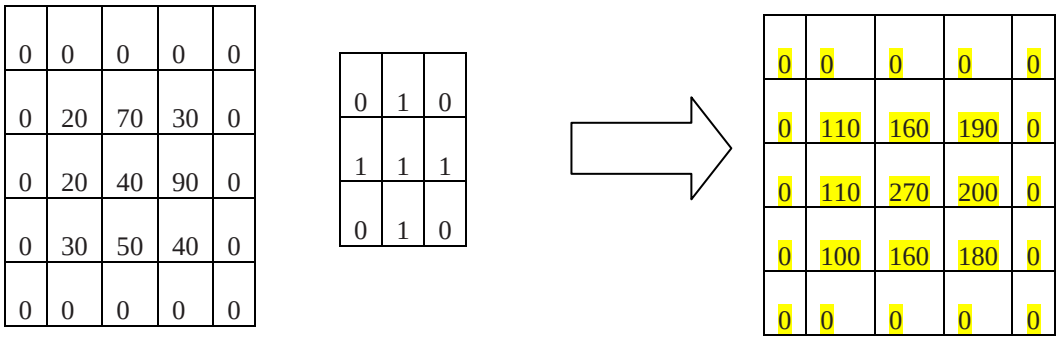
Thresholding separates the intensity values of the pixels into two groups. The pixels having intensity values higher than the threshold correspond to foreground and the ones that are lower correspond to background.

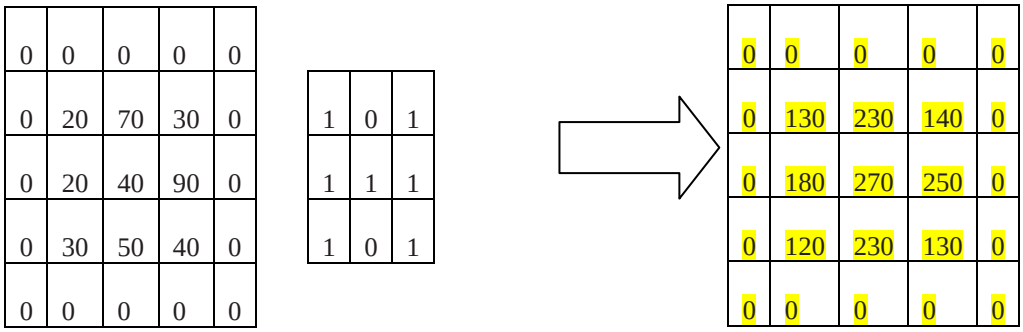
I(x,y) > T form a group (generally foreground)
I(x,y) < T form a group (generally background)

Q2) [45 puan] 5x5'lik resim (image) için 3x3'lük yapısal elemanlar ile BOX filter ve MEDIAN filter işlemlerini gösteriniz. *(Show BOX filter and MEDIAN filter operations with 3x3 structures on the 5x5 image.)*

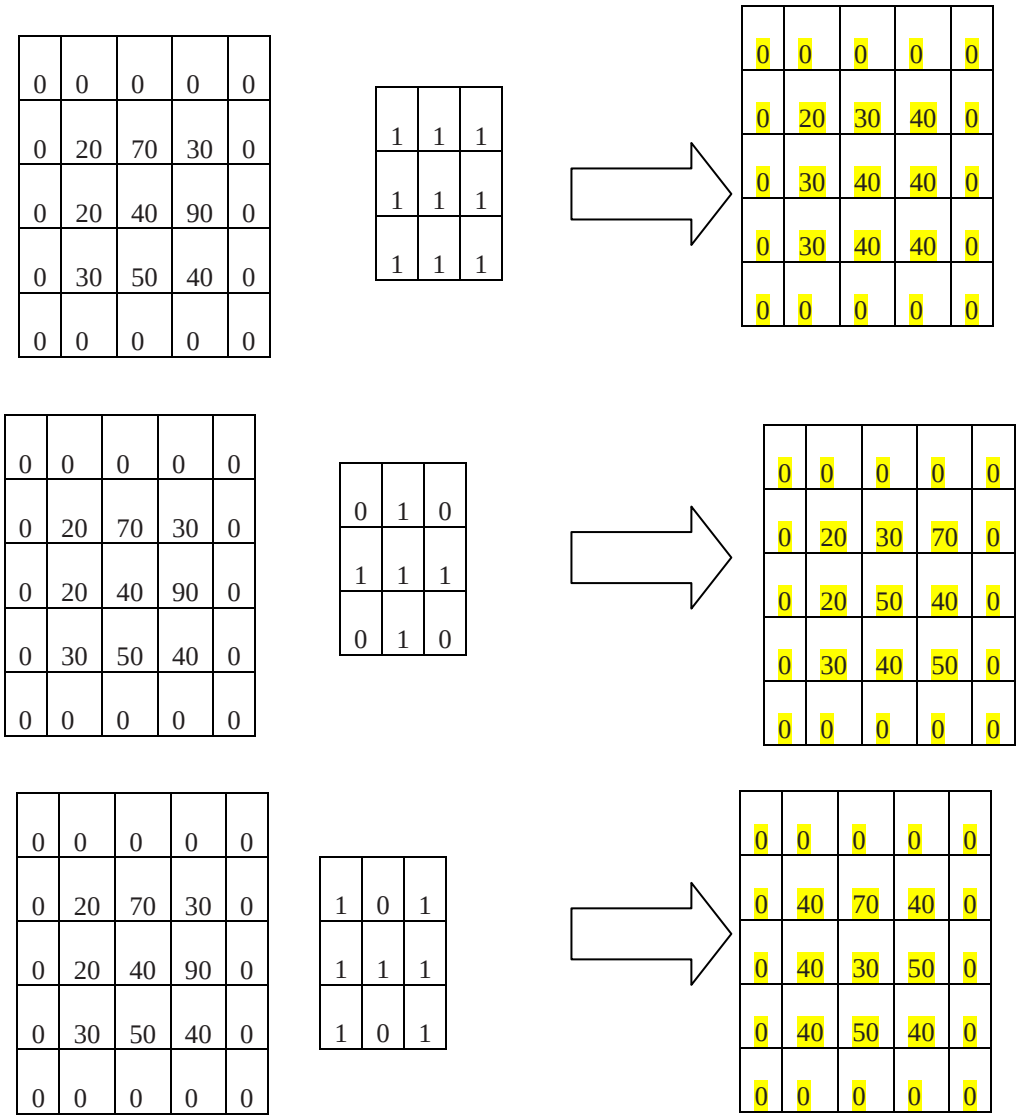
Box Filter: *(5 x 3 = 15 puan)*







Median Filter: *(10 x 3 = 30 puan)*



Q3) [40 puan] (Write down a 3x3 filter that returns a positive value if the average value of the 4-adjacent neighbors is less than the center (origin) and a negative value otherwise.)

0	-0,25	0
-0,25	1	-0,25
0	-0,25	0

OR

0	-1	0
-1	4	-1
0	-1	0