

5. Will it effect your results from #1?

Yes, the modification in the function will likely affect the results obtained from the analysis conducted in question 1.

In question 1, we analyzed the time complexity of the original function, which only had one operation within the nested loops:

$x = x + 1;$

The time complexity analysis was based on the number of iterations of this operation within the nested loops. Now, with the modified function, an additional operation has been introduced within the nested loops:

$y = i + j;$

This extra step increases the computing overhead in the loops, which could change how the algorithm behaves when it is run.

The time complexity analysis of the modified function may therefore be different from the original function's. Changes in the algorithm's runtime properties could result from the addition of the additional operation, thereby influencing the algorithm's growth rate and execution time behaviour in relation to input size (n). As such, it's possible that the outcomes of the study carried out in response to question 1 won't apply directly to the altered function.