Permutations Analysis



Note: that in the equation above is the number of times the loop will be executed and is the recursive call to the next subsequent elements. If we expand this equation using a recurrence relation we get the following:



Letting , we get the following polynomial (note I break the factoring up to show an interesting observation made. I don’t one hundred percent understand the significance of my finding at this point though I hope to make a connection between the permutations and what is found bellow.



This implies that the complexity of the algorithm is .



Note that the last coefficient for each of the polynomials is the factorial for that specific. What is the significance of this? And how could one find out when an actual permutation is printed.

