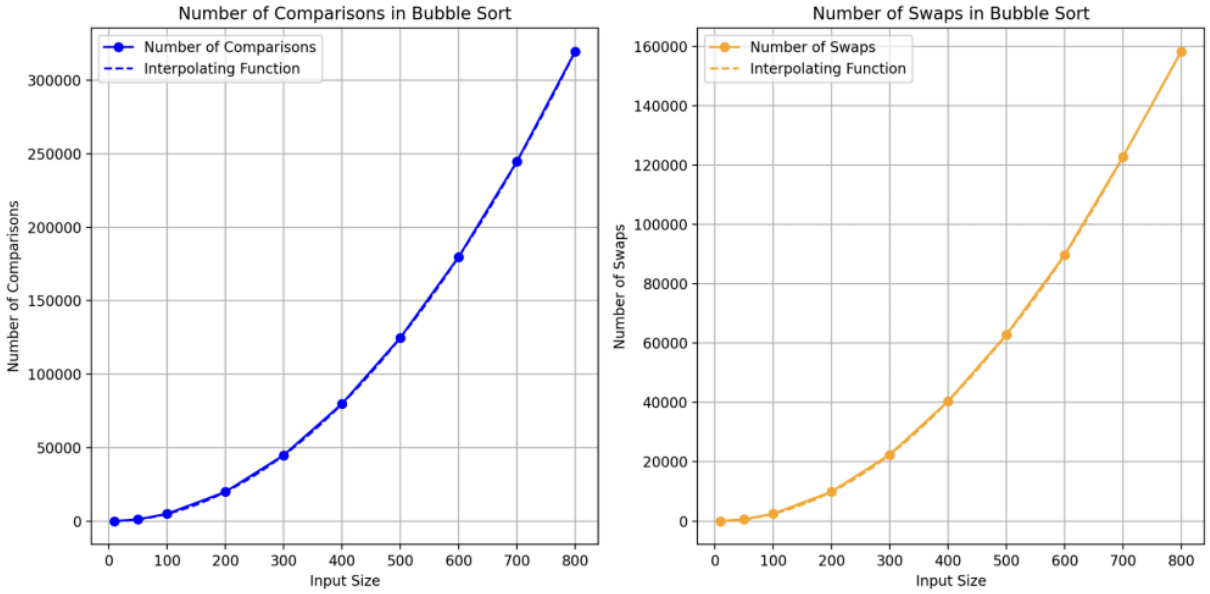
1. i) The comparison count in bubble sort is intricately linked to its iterative process. As the algorithm progresses, it conducts fewer comparisons, discerning that each pass places the largest element in its rightful position. If the array size stands at n, then the comparison count follows the formula: n*(n-1)/2.

ii) In bubble sort's average scenario, every element undergoes a shift halfway towards its eventual sorted location during a swap. With n elements at play, the anticipated number of swaps conforms to n*(n-1)/4, capturing the essence of each element's progression towards alignment within the sorted sequence.

4.



For an input size of n = 700, the comparison between the calculated and graphed values remained consistent with the expectations. Specifically, the calculated number of comparisons (244650) closely approximated the plotted data (approx 245000), while the average number of swaps 122325 exhibited a close correspondence with the graphical estimate (approx 122000). These findings underscore the reliability of the interpolation methods utilized for comparisons and swaps, reaffirming and showing the characteristic of bubble sort((O(n^2)) time complexity.