1. **Derive the formulas for (i) number of comparisons, and (ii) average-case number of swaps for bubble sort**

   $\frac{[n(n-1)]}{4}$ → o(n^2)

   Number of comparisons → o(n^2)

   Average-case number of swaps based on random order → o(n^2)

4. Separately plot the results of #comparisons and #swaps by input size, together with appropriate interpolating functions. Discuss your results: do they match your complexity analysis?