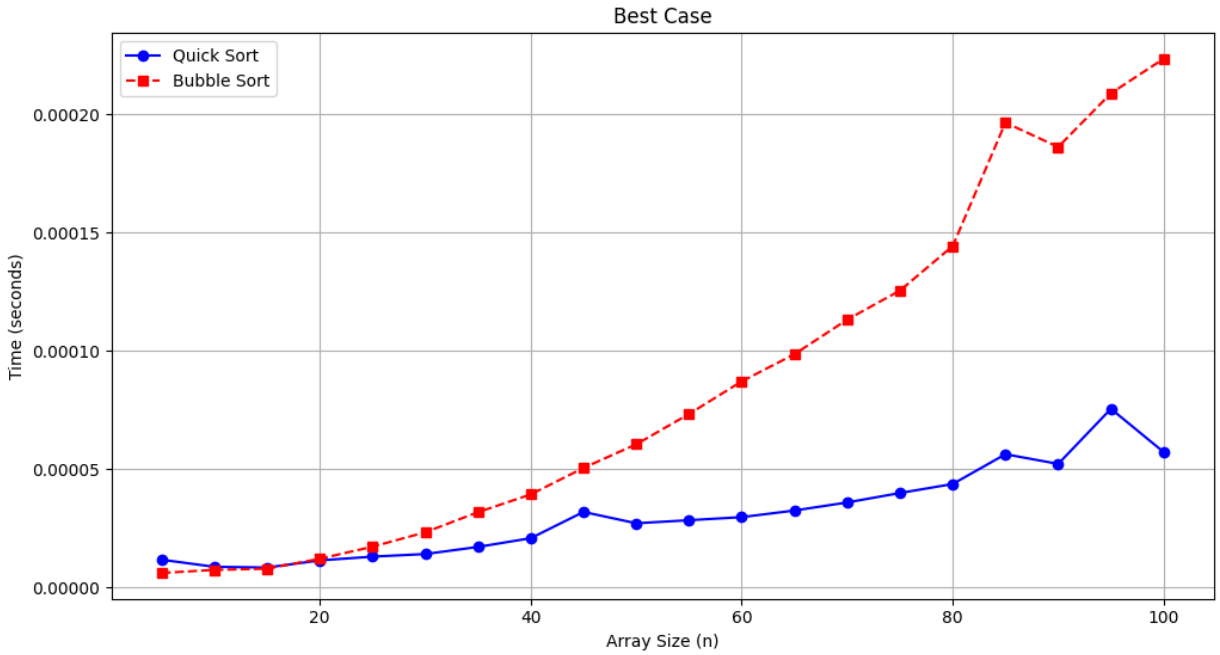
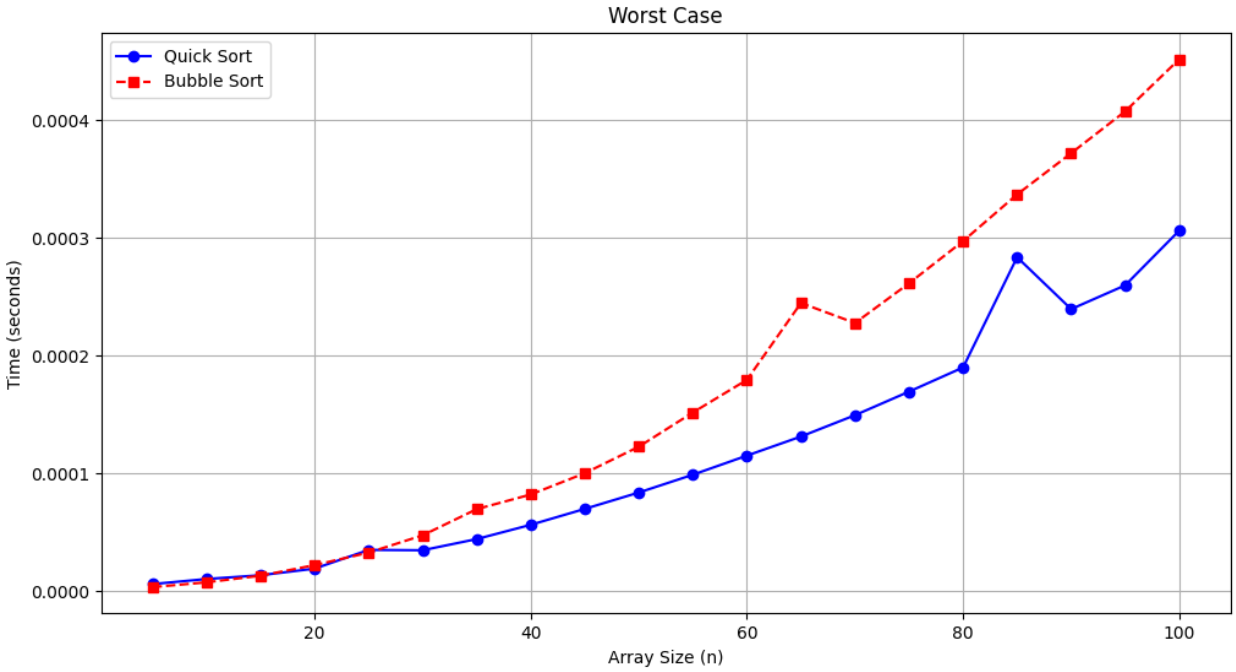
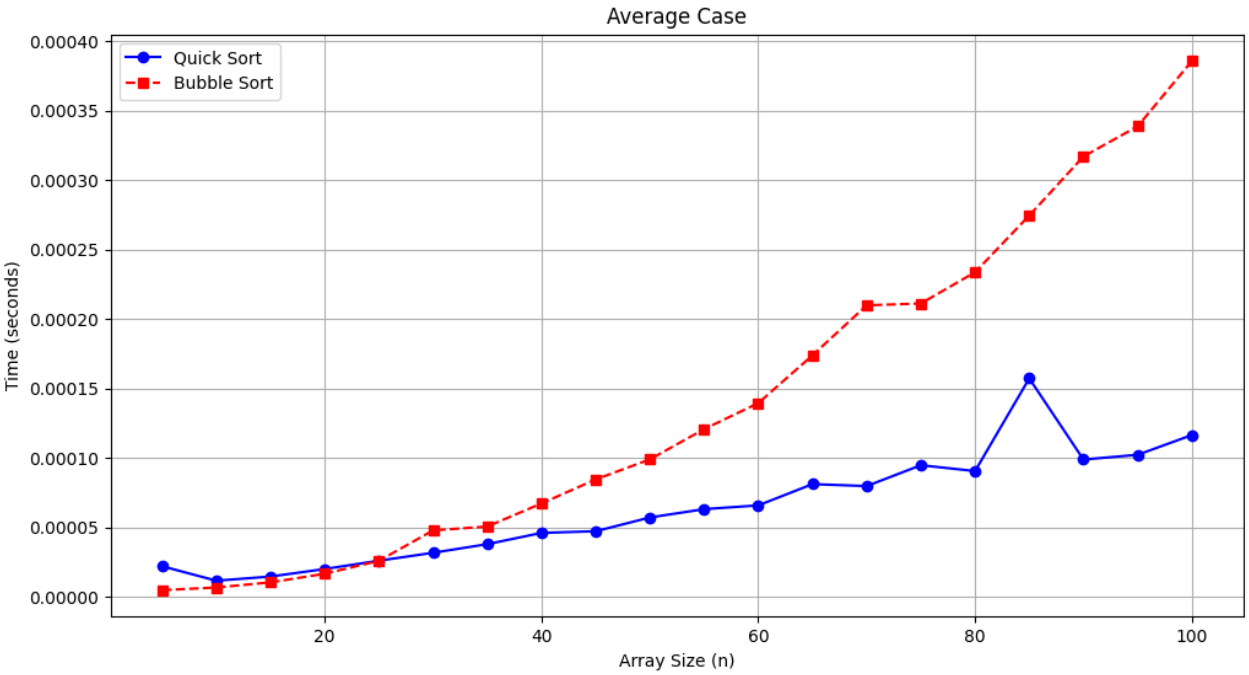
Exercise 2



Best case: At input of size 15 and below, bubble sort performs better than quick sort. Around size 20, it performs the same. At size 25 and above, quick sort performs better than bubble sort.



Worst case: At input of size 10 and below, bubble sort performs slightly better than quick sort. From 15 to 25, it performs about the same. At size 30 and above, quick sort performs better than bubble sort.



Average case: At input of size 20 and below, bubble sort performs better than quick sort. At size 25, it performs the same, and at size 30, quick sort performs better than bubble sort.

It is evident that at input sizes of 30 and above it is guaranteed that quick sort performs significantly better than bubble sort. Input size of 25 show that in the best-case scenario of both algorithms, quick sort still performs better than bubble sort. However, input size of 20 shows that both algorithms perform the same. Thus, bubble sort should be used for arrays of size 20 or lower.