

Situations in which Best case and worst case occurs.

Best case

The best case occurs when the partition process always picks the middle element as pivot.

Worst Case

The worst case occurs when the partition process always picks greatest or smallest element as pivot. If we consider above partition strategy where last element is always picked as pivot, the worst case would occur when the array is already sorted in increasing or decreasing order.

Time complexity

Best case: $O(n \log n)$

Worst case: $O(n^2)$