

All three algorithms are in place and are thereby very memory efficient.

Insertion sort

Very easy to implement and is sufficient when working with smaller lists. However with bigger data it will suffer and won't be fast compared to other sorting algorithms.

Quick sort

Compared to insertion sort, quick sort is much faster. It will handle a large list without much effort. Quick sort is generally regarded as the quickest sorting algorithm, but if the array has a length of less than 20 it is very heavy and insertion sort is more suitable.

Heap sort

This is also a very fast sorting algorithm when working with larger arrays. The main difference however is that heap's time complexity is consistent with its worst, average and best case being the same. This will guarantee its efficiency. Its inherent flaw is that heap sort will do unnecessary swap even though the list is kind of already ordered, this is less of a problem for quick sort.