Advantages and Disadvantages of sort

Bubble Sort

Advantages	Disadvantages
The primary advantage of the bubble sort is that it is popular and easy to implement.	The main disadvantage of the bubble sort is the fact that it does not deal well with a list containing a huge number of items.
In the bubble sort, elements are swapped in place without using additional temporary storage.	The bubble sort requires n-squared processing steps for every n number of elements to be sorted.
The space requirement is at a minimum	The bubble sort is mostly suitable for academic teaching but not for real-life applications.

Insertion Sort

Advantages	Disadvantages
The main advantage of the insertion sort is its simplicity.	The disadvantage of the insertion sort is that it does not perform as well as other, better sorting algorithms
It also exhibits a good performance when dealing with a small list.	With n-squared steps required for every n element to be sorted, the insertion sort does not deal well with a huge list.
The insertion sort is an in-place sorting algorithm so the space requirement is minimal.	The insertion sort is particularly useful only when sorting a list of few items.

Advantages and Disadvantages of sort

Selection Sort

Advantages	Disadvantages
The main advantage of the selection sort is that it performs well on a small list.	The primary disadvantage of the selection sort is its poor efficiency when dealing with a huge list of items.
Because it is an in-place sorting algorithm, no additional temporary storage is required beyond what is needed to hold the original list.	The selection sort requires n-squared number of steps for sorting n elements.
Its performance is easily influenced by the initial ordering of the items before the sorting process.	Quick Sort is much more efficient than selection sort

Quick Sort

Advantages	Disadvantages
The quick sort is regarded as the best sorting algorithm.	The slight disadvantage of quick sort is that its worst-case performance is similar to average performances of the bubble, insertion or selections sorts.
It is able to deal well with a huge list of items.	If the list is already sorted than bubble sort is much more efficient than quick sort
Because it sorts in place, no additional storage is required as well	If the sorting element is integers than radix sort is more efficient than quick sort.

Advantages and Disadvantages of search

Binary Search

Advantages	Disadvantages
It is a much faster algorithm	It can be used only when data is sorted
It works on the divide and conquers principle	It is more complicated
It is efficient	If random access is not supported then efficiency might be lost
It is a simple algorithm to understand	It can be implemented only for two-way transversal data structures

Linear Search

Advantages	Disadvantages
Easy to understand	Time-consuming
No special data structure required	Not suitable for large data sets
Can be used on unsorted data	Not suitable for ordered data
No additional memory required	Not suitable for repetitive task
Not affected by data size	Not suitable for real-time applications

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