

Stable vs Unstable Sorting Algorithms

Stable \rightarrow Relative order should be maintained after sorting algorithms.

Dictionary \rightarrow (4, 2) (5, 7) (4, 3) (6, 8) (7, 10)
(Hashing Data Structure) \downarrow sorting algorithm

Output

Stable
Sort

\leftarrow (4, 2) (4, 3) (5, 7) (6, 8) (7, 10)
OR

(4, 3) (4, 2) (5, 7) (6, 8) (7, 10)

\rightarrow Not stable
sort

Stable Sort



[4^a, 5, 7, 3, 4^b, 6, 10] \rightarrow [3, 4^a, 4^b, 5, 6, 7, 10]

OR

[3, 4^b, 4^a, 5, 6, 7, 10]



\leftarrow Unstable sort

{ Quick Sort,
Selection Sort,
Heap Sort