

Stable

Can be stable, depends on implementation

↓

Radix & Bucket Sort

Radix Sort was used to sort punch cards, as an example

Bucket sort is essentially a modified counting sort

Both are best suited for some special case inputs (input small, uniform distributions)

- Also need extra space

Radix → time: $O(N)$
space: $O(n+k)$

Bucket Sort → time: best/avg = $O(n+k)$
worst = $O(N \log N)$

Space: $O(N+k)$

Stalin Sort (Not stable)

Time complexity: best/avg/worst: $O(N)$

Space complexity: $O(1)$

"Joke" algorithm, it solves by removing elements to reach a "sorted" array!