Sorting Algorithm	Time Complexity			Space Complexity	Stable
	Best	Average	Worst	Worst	
Quicksort	O(n log n)	O(n log n)	O(n^2)	O(log n)	No
Merge Sort	O(n log n)	O(n log n)	O(n log n)	O(n)	Yes
Heapsort	O(n log n)	O(n log n)	O(n log n)	O(1)	No
Timsort	O(n)	O(n log n)	O(n log n)	O(n)	Yes
Bubble Sort	O(n)	O(n^2)	O(n^2)	O(1)	Yes
Insertion Sort	O(n)	O(n^2)	O(n^2)	O(1)	Yes
Selection Sort	O(n^2)	O(n^2)	O(n^2)	O(1)	No *
Shellsort	O(n log n)	-- (depends on gap sequence)	O(n^2)	O(1)	No
Bucket Sort	O(n + k)	O(n + k)	O(n^2)	O(nk)	Yes
Radix Sort	O(nk)	O(nk)	O(nk)	O(nk)	Yes
Counting Sort	O(n + k)	O(n + k)	O(n + k)	O(k)	Yes

*Selection sort can be implemented as a stable sort if, rather than swapping the minimum value with its current value, the minimum value is inserted into the first position and the intervening values shifted up. However, this modification either requires a data structure that supports efficient insertions or deletions, such as a linked list, or it leads to O(n^2) writes.