

QuickSort is a sorting algorithm that picks a pivot and sorts the elements around it. It works by dividing the list into two parts. The left part contains elements smaller than the pivot, and the right part has larger elements.

Example:

Sorting [5, 1, 6, 3]

- Pivot: 3
- Partition: [1] (pivot) [5, 6]
- Sorting [5, 6] → [5, 6]
- Final: [1, 3, 5, 6]

QuickSort has $O(n \log n)$ complexity in most cases but can be slow if not optimized. It is widely used in programming for fast sorting.