# IN PLACE AND OUT OF PLACE

## IN PLACE

- Aims to reduce memory usage.
- Overwrites input with output.
- An algorithm which is not in place is called out of place.
- In place examples: Quick Sort, Heap Sort, etc.
- Out of place examples: Merge Sort.

# BUBBLE SORT

- Simple, but inefficient.
- Compares each pair of adjacent elements and swaps them if they are in the wrong order.
- Practical in cases where the list is mostly sorted with a few unsorted elements.
- Time complexity of O(n^2), which is much slower than most other sorting algorithms.