

Technical Document: Sorting Algorithms

Sorting algorithms are fundamental in computer science. They arrange data in a particular order (ascending or descending).

Common Sorting Algorithms:

- Bubble Sort: Simple, $O(n^2)$ complexity.
- Merge Sort: Divide and conquer, $O(n \log n)$ complexity.
- Quick Sort: Efficient on average, $O(n \log n)$ complexity.

Use Cases:

- Data analysis
- Database indexing
- Search optimization