| **S.No** | **Technique** | **Best Case** | **Average Case** | **Worst Case** | **Space Complexity** |
| --- | --- | --- | --- | --- | --- |
| 1 | Bubble Sort | Ω(n) | θ(n^2) | O(n^2) | O(1) |
| 2 | Selection Sort | Ω(n^2) | θ(n^2) | O(n^2) | O(1) |
| 3 | Insertion Sort | Ω(n) | θ(n^2) | O(n^2) | O(1) |
| 4 | Merge Sort | Ω(n log(n)) | θ(n log(n)) | O(n log(n)) | O(n) |
| 5 | Quick Sort | Ω(n log(n)) | θ(n log(n)) | O(n^2) | O(n) |
| 6 | Radix Sort | Ω(nk) | θ(nk) | O(nk) | O(n+k) |
| 7 | Heap Sort | Ω(n log(n)) | θ(n log(n)) | O(n log(n)) | O(1) |
| 8 | Binary Tree Search | Ω(1) | θ(log n) | O(n) | O(1) |
| 9 | Binary Tree Insertion | Ω(1) | θ(log n) | O(n) | O(1) |
| 10 | Binary Tree Deletion | Ω(1) | θ(log n) | O(n) | O(1) |
| 11 | BST Search | Ω(1) | θ(log n) | O(n) | O(1) |
| 12 | BST Insertion | Ω(1) | θ(log n) | O(n) | O(1) |
| 13 | BST Deletion | Ω(1) | θ(log n) | O(n) | O(1) |
| 14 | AVL Tree Search | Ω(1) | θ(log n) | θ(log n) | O(1) |
| 15 | AVL Tree Insertion | Ω(1) | θ(log n) | θ(log n) | O(1) |
| 16 | AVL Tree Deletion | Ω(1) | θ(log n) | θ(log n) | O(1) |