| CSE221 : Algorithms : Time Complexity Cheat Sheet [ Last Updated On 09 Dec 2018 ] |
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| Original Sheet Link : https://docs.google.com/spreadsheets/d/18c09KA4ECCmbGp8C7mIruysVdWBUVcEt |
| For Any Correction, Please Do Let Me Know At **shoaibahmeddipu@gmail.com**. Thanks In Advance! |

| Type | Algorithms | Time Complexity | | Remarks |
|---|---|---|---|---|
| | | Worst | Best | |
| Sorting | Bubble Sort | O(n^2) | O(n^2) | In Place / Stable |
| | Selection Sort | O(n^2) | O(n^2) | In Place / Unstable |
| | Insertion Sort | O(n^2) | O(n) | In Place / Stable |
| | Merge Sort | O(nlgn) | O(nlgn) | Out Of Place / Stable |
| | Quick Sort | O(n^2) | O(nlgn) | In Place / Unstable |
| | Heap Sort | O(nlgn) | O(nlgn) | In Place / Unstable |
| | | | | |
| Searching | Binary Search | O(lgn) | O(1) | Sorted Array |
| | Linear Search | O(n) | O(1) | No Condition |
| | | | | |
| | | **List** | **Matrix** | |
| Graph | BFS | O(V + E) | O(V^2) | |
| | DFS | O(V + E) | O(V^2) | |
| | Topological | DFS [O(V+E)] + Sort [O(VlgV)] | | |
| | Kruskal's MST | O(ElgE + V + E) | | |
| | Prim's MST | O(VlgV + ElgV) | | |
| | Dijkstra | O(VlgV + ElgV) | | |
| | Bellman | O(VE) | | |
| | Huffman | O(n) + O(nlgn) + O(n) | | |
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| | | | | |
| DP | LCS DP | | O(m*n) | Array Implementation |
| | 0/1 Knapsack | | O(Max Weight * Item No) | Array Implementation |
| | Coin Change | | O(Max Amount * Types Of | Array Implementation |