

linear probing $\Theta(1)$ Average $O(n)$ worst
quadratic probing $\Theta(1)$ Average $O(n)$ worst
separate chaining $\Theta(1)$ Average $O(n)$ worst

* Sorts

- (1) Bubble sort \rightarrow Best $O(n)$ Average $O(n^2)$
Worst $O(n^2)$
- (2) Selection sort \rightarrow Best $O(n^2)$ Average $\frac{1}{4}$
Worst $O(n^2)$
- (3) Insertion sort \rightarrow Best $O(n)$ Average $\frac{1}{4}$
Worst $O(n^2)$
- (4) Merge sort \rightarrow Best $O(n \log n)$,
Average $\frac{1}{4}$ Worst $\Theta(n \log n)$
- (5) Quick sort \rightarrow Best $\frac{1}{4}$ Average $O(n \log n)$
Worst $O(n^2)$
- (6) Heap sort \rightarrow Best, Worst, Average $O(n \log n)$
- (7) Counting sort \rightarrow Best $(n+k)$ $R \rightarrow$ range of i/p
Average $\frac{1}{4}$ Worst $O(n+k)$
- (8) Radix sort \rightarrow Best, Worst, Average
 $O(n * k) \rightarrow k \rightarrow$ no. of digits
- (9) Bucket sort $\rightarrow O(n+k)$ $R \rightarrow$ no. of buckets
Average $\frac{1}{4}$ Best
Worst $O(n^2)$

	Best	Worst	Average
Linear search	$O(1)$	$O(n)$	$O(n)$
Binary search	$O(1)$	$O(\log n)$	$O(\log n)$
BST (AVL, Red-Bl)	$O(1)$	$O(\log n)$	$O(\log n)$
Unbalanced BST	$O(1)$	$O(n)$	$O(\log n)$
Hash table	$O(1)$	$O(n)$	$O(1)$
DFS/BFS	$O(V+E)$	$O(V+E)$	$O(V+E)$
Heap	$O(1)$	$O(\log n)$	$O(\log n)$
Kruskals	$O(E \log E)$ $O(E \log V)$		
Prim's binary heap	$O((V+E) \log V)$		
Prim's Fibonacci heap	$O(E + V \log V)$		
longest common subsequence	$O(mn)$		
Fibonacci	$O(mn)$		
Knapsack	$O(nw)$ w \rightarrow capacity		
Rat in a chain	$O(n^3)$ n \rightarrow no. of matries		
shortest path	Floyd Warshall $O(V^3)$ Bellman Ford $O(VE)$		
subset sum	$O(n \times \text{sum})$ sum \rightarrow target sum		