# Twitter Thread by Saurav Jain



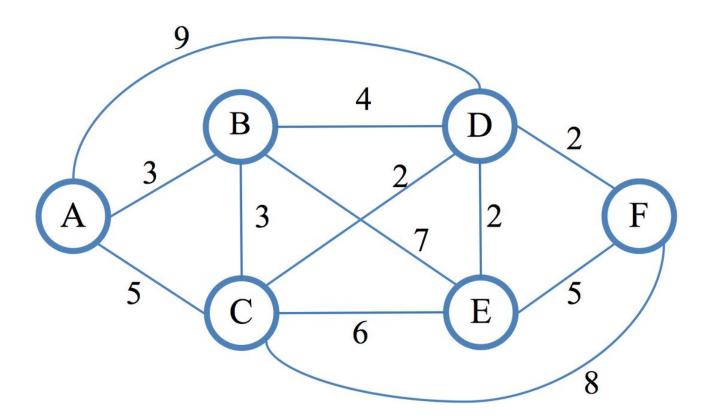


# SEVEN Algorithms that every software developer should know about ■

### Thread **■**■

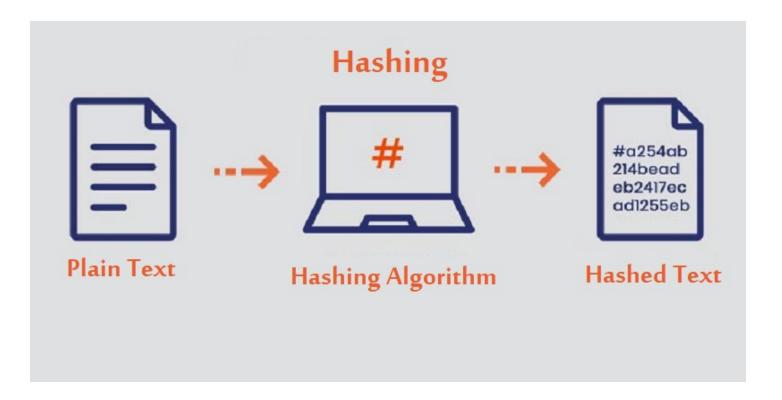
#### 1. Shortest Path

Distance of one particular point to another, one particular point to all other points, and each point to other points.



### 2. Hashing

Hashing helps in retrieving the items in a complex database easily by simple indexing rather than through original value which takes a lot of time.



## 3. Sorting

- Quick Sort
- Bubble Sort
- Selection Sort
- many more

Algorithm	Time Complexity			
	Best	Average	Worst	
Selection Sort	© Ω(n^2)	θ(n^2)	O(n^2)	
Bubble Sort	Ω(n)	θ(n^2)	O(n^2)	
Insertion Sort	Ω(n)	θ(n^2)	O(n^2)	
Heap Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	O(n log(n))	
Quick Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	O(n^2)	
Merge Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	O(n log(n))	
Bucket Sort	Ω(n+k)	$\theta(n+k)$	O(n^2)	
Radix Sort	Ω(nk)	θ(nk)	O(nk)	

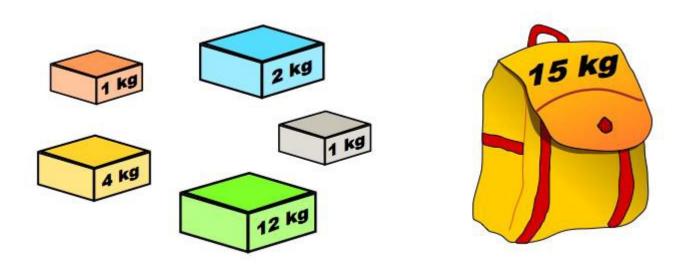
#### 4. Searching

- Binary Search
- Linear Search
- etc.

	Time Complexity
Linear Search	O (n)
Binary Search	O ( log (n) )
Jump Search	O (√ n)
Interpolation Search	O (log (log n))-Best   O (n)-Worst
Exponential Search	O ( log (n) )
Sequential search	O (n)
Depth-first search (DFS)	O (  V  +  E  )
Breadth-first search (BFS)	O (  V  +  E  )

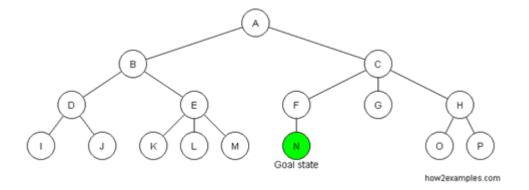
## 5. Knapsack Problem

The items are either completely or no items are filled in a knapsack.



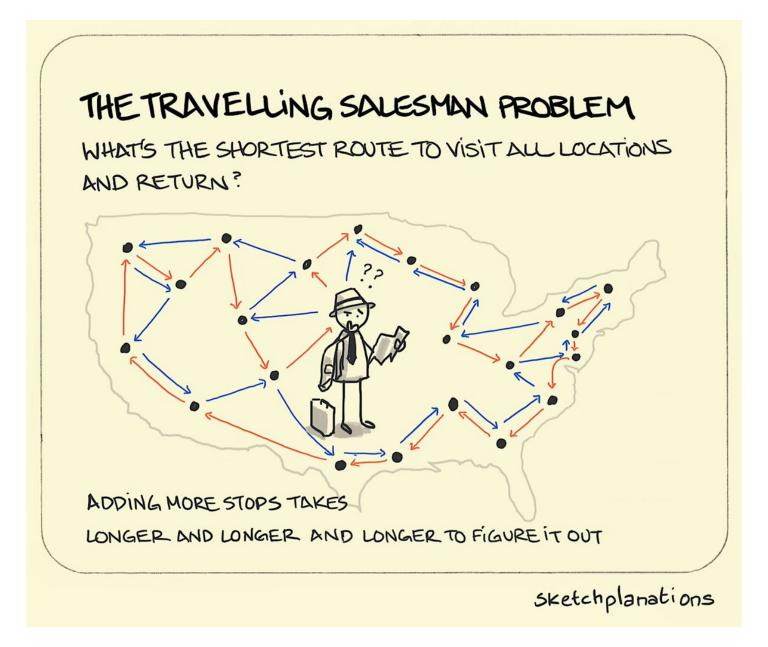
#### 6. Search Tree

With the help of tree algorithms, one can find an item in a reasonably balanced time.



#### 7. Travelling Salesman

Optimization is the key to success. This helps in solving a problem through the quickest, most efficient, and cheapest possible solution.



That's a wrap!

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- Saurav Jain (@Sauain) March 31, 2022