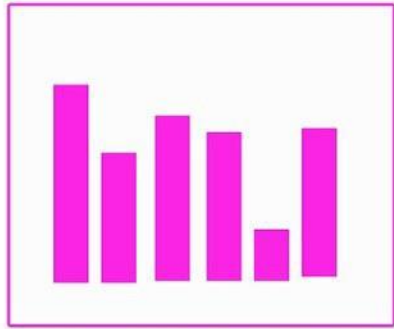


Data Structures

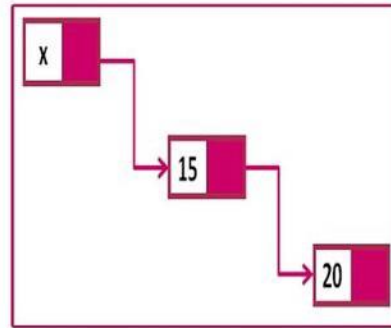


data

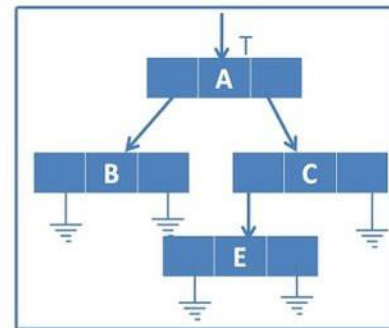




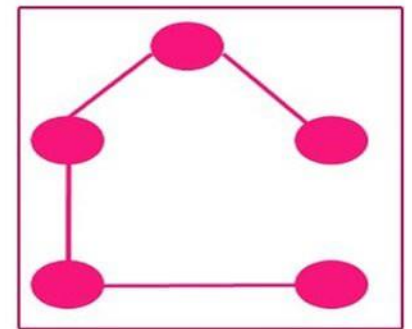
Sorting



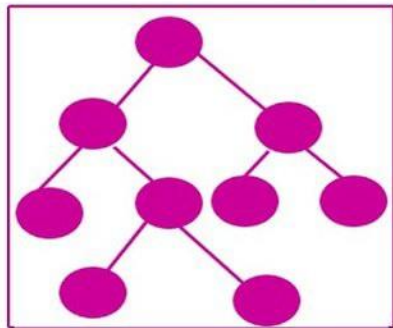
Link list



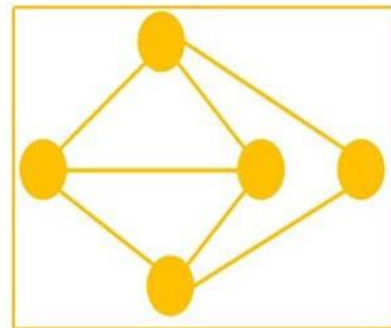
list



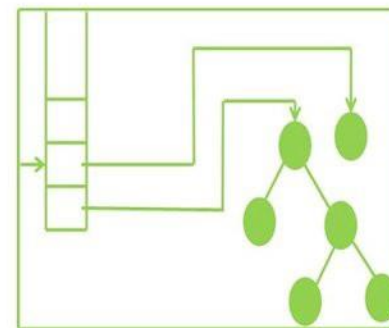
spanning tree



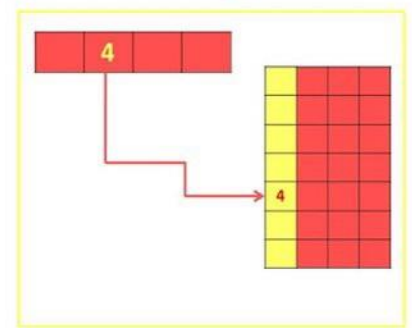
Tree



Graph



Stack



Hashing



[illegible]

Height of attempting unknown question
in an exam...

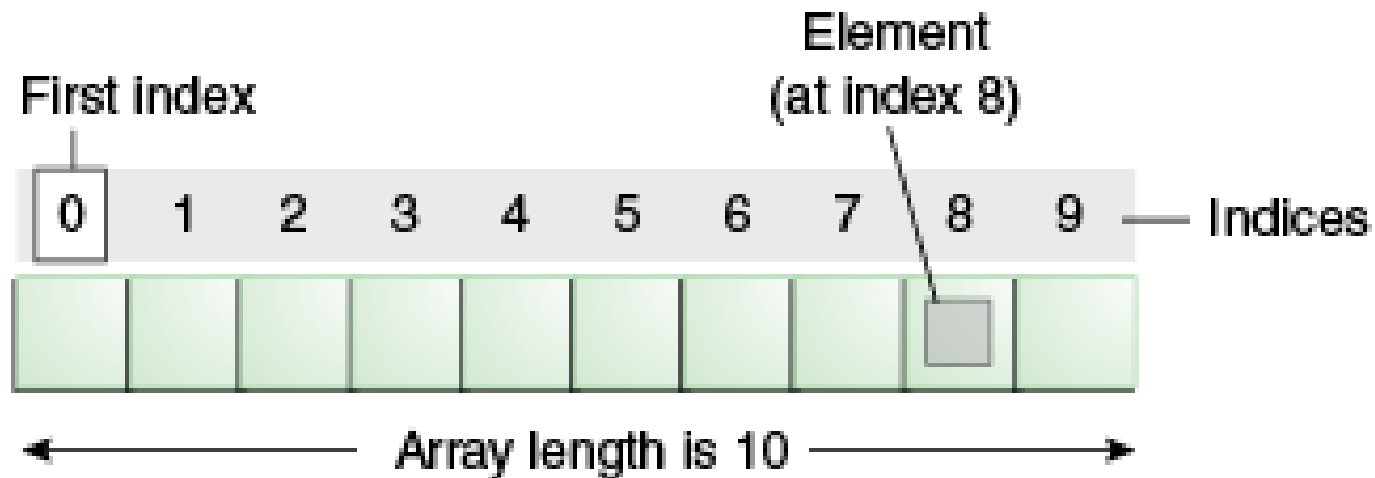
Question: What is an Array..?

Student: ARRAY is the word used
to call a friend.

Eg. "ARRAY BHAI" idhar aa..



Linear Structures: Arrays



Linear Structures: Lists



Linear Structures: Linked-Lists



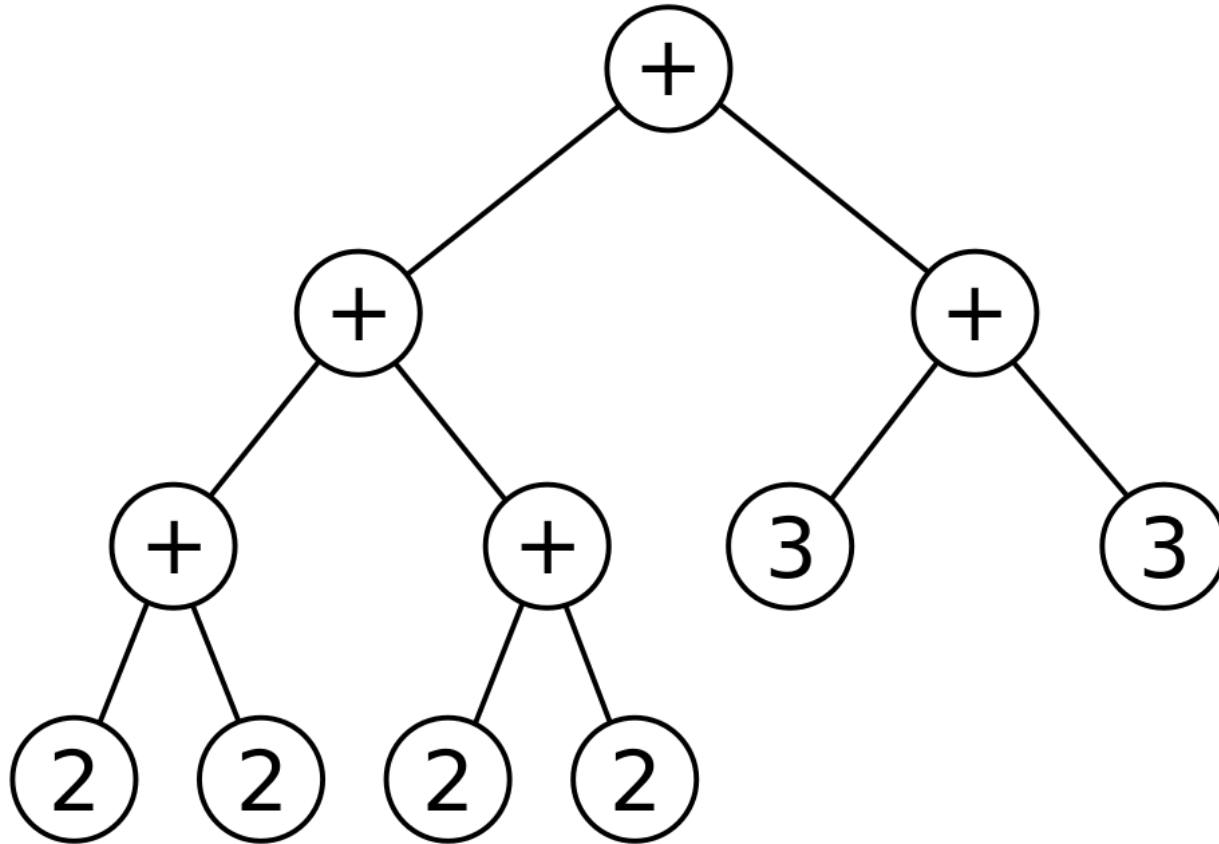
Linear Structures: Stacks



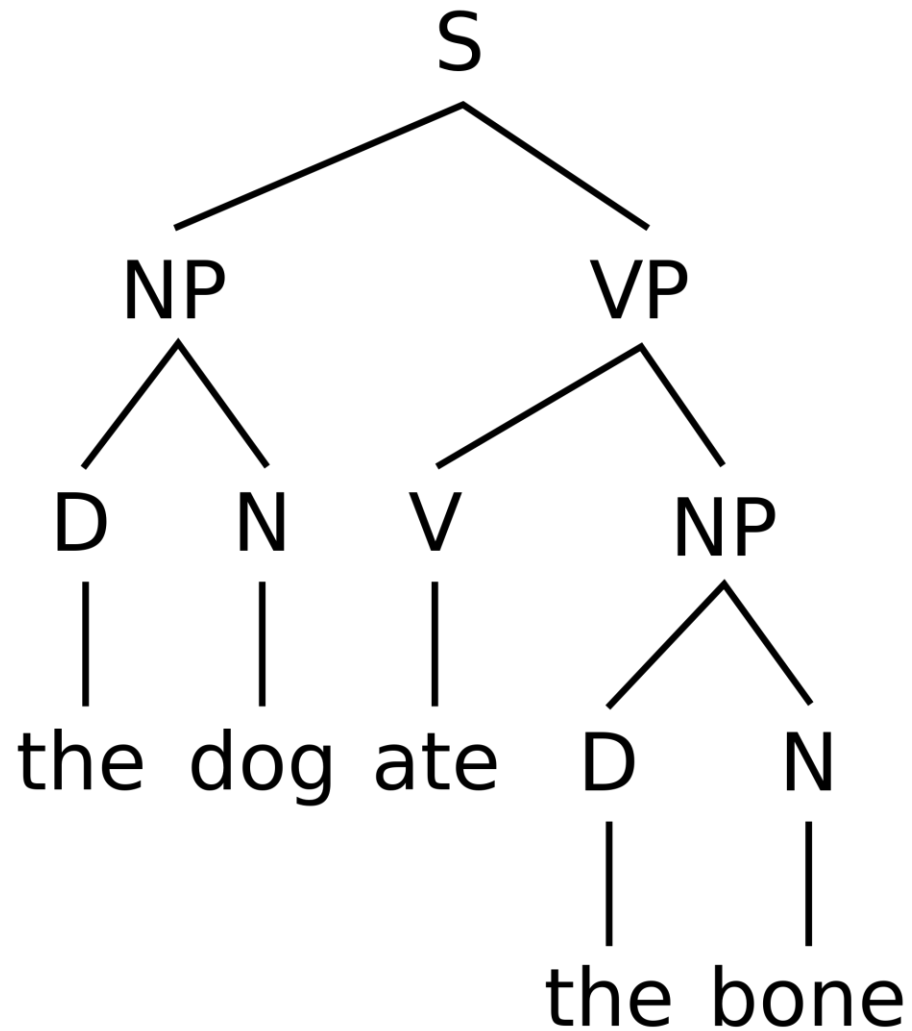
Linear Structures: Queues



Non-Linear Structures: Trees



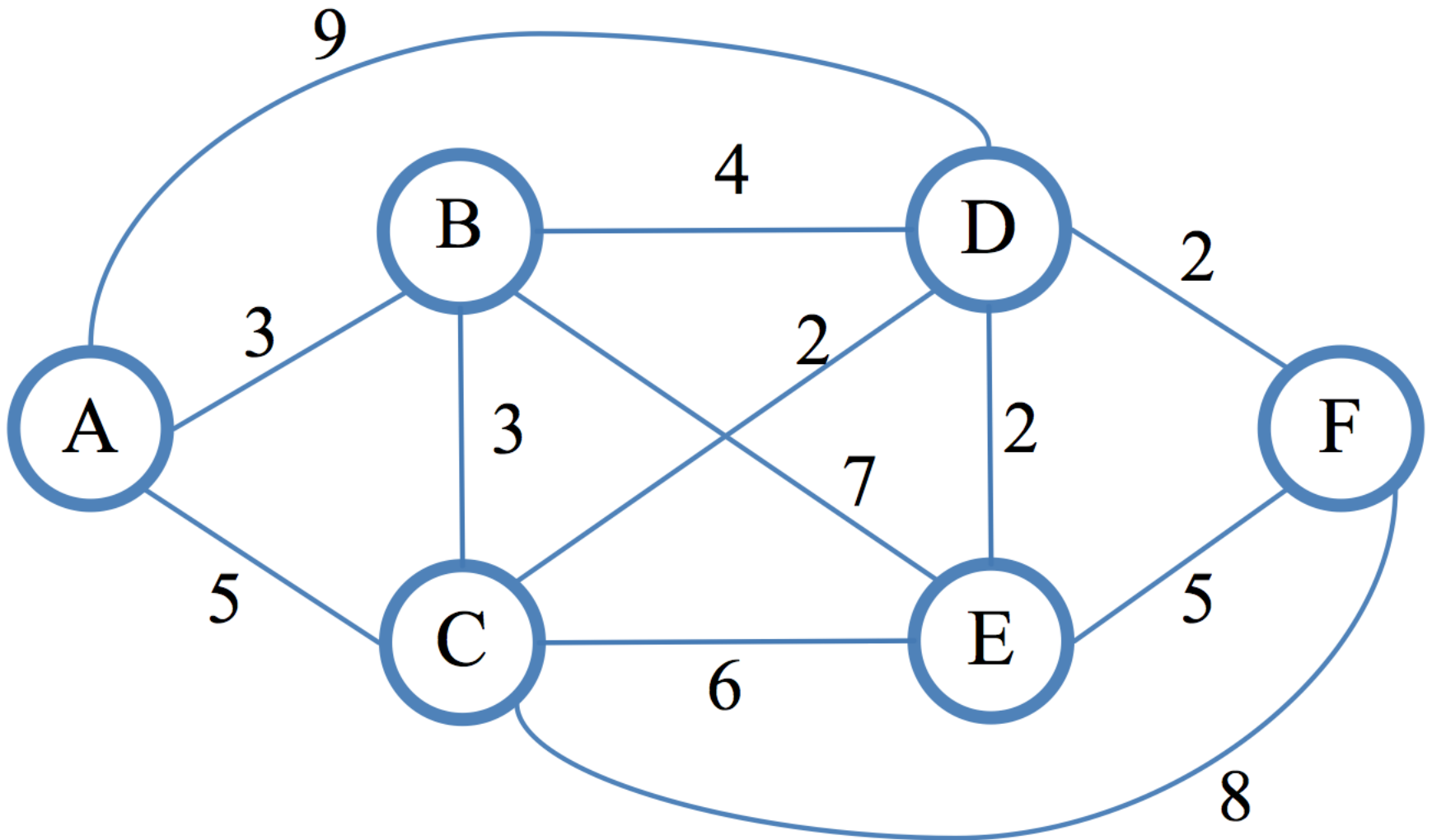
Non-Linear Structures: Trees



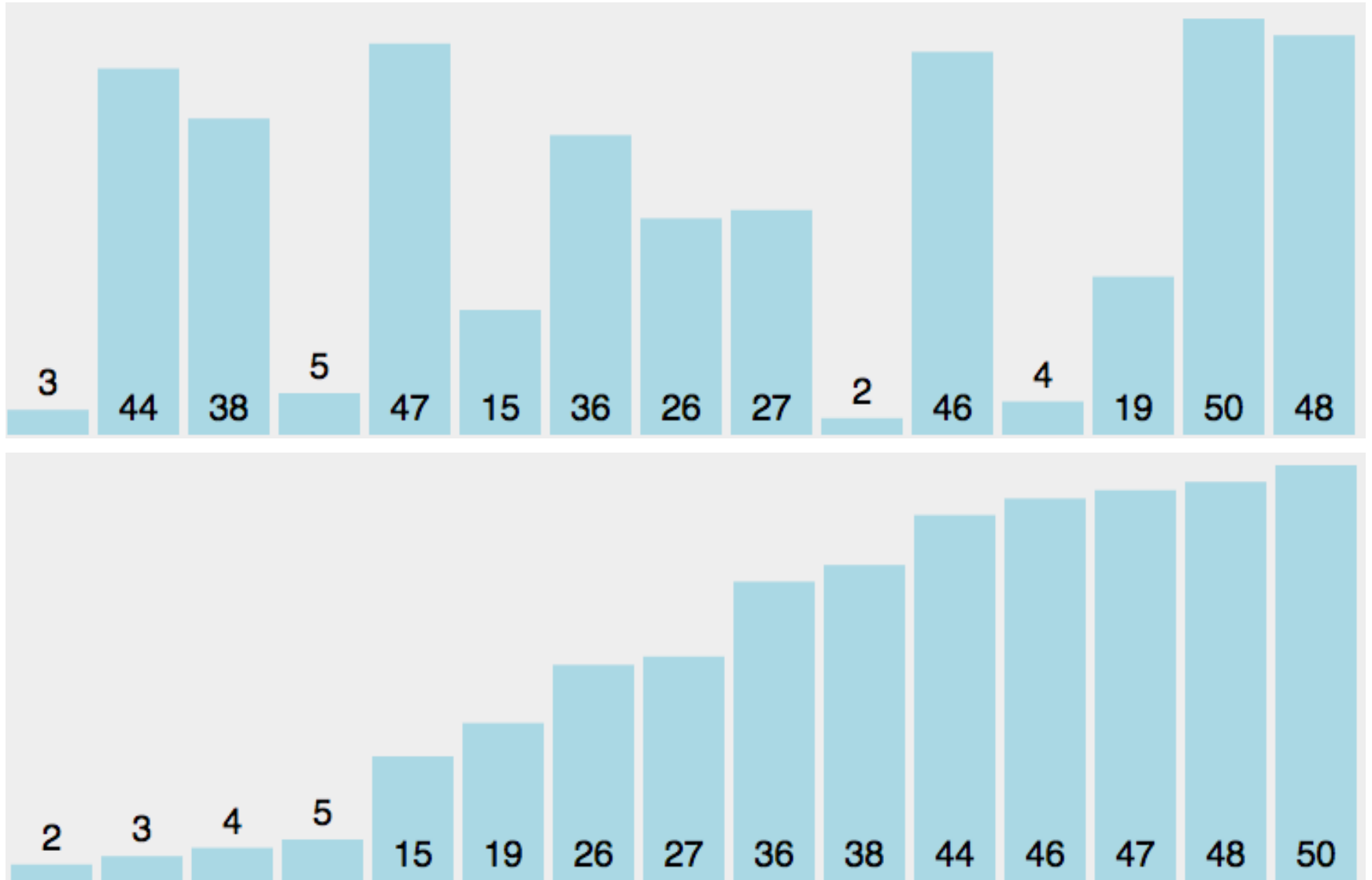
Non-Linear Structures: Graphs



Non-Linear Structures: Graphs



Algorithms: Sorting



Algorithms: Sorting

Array Sorting Algorithms

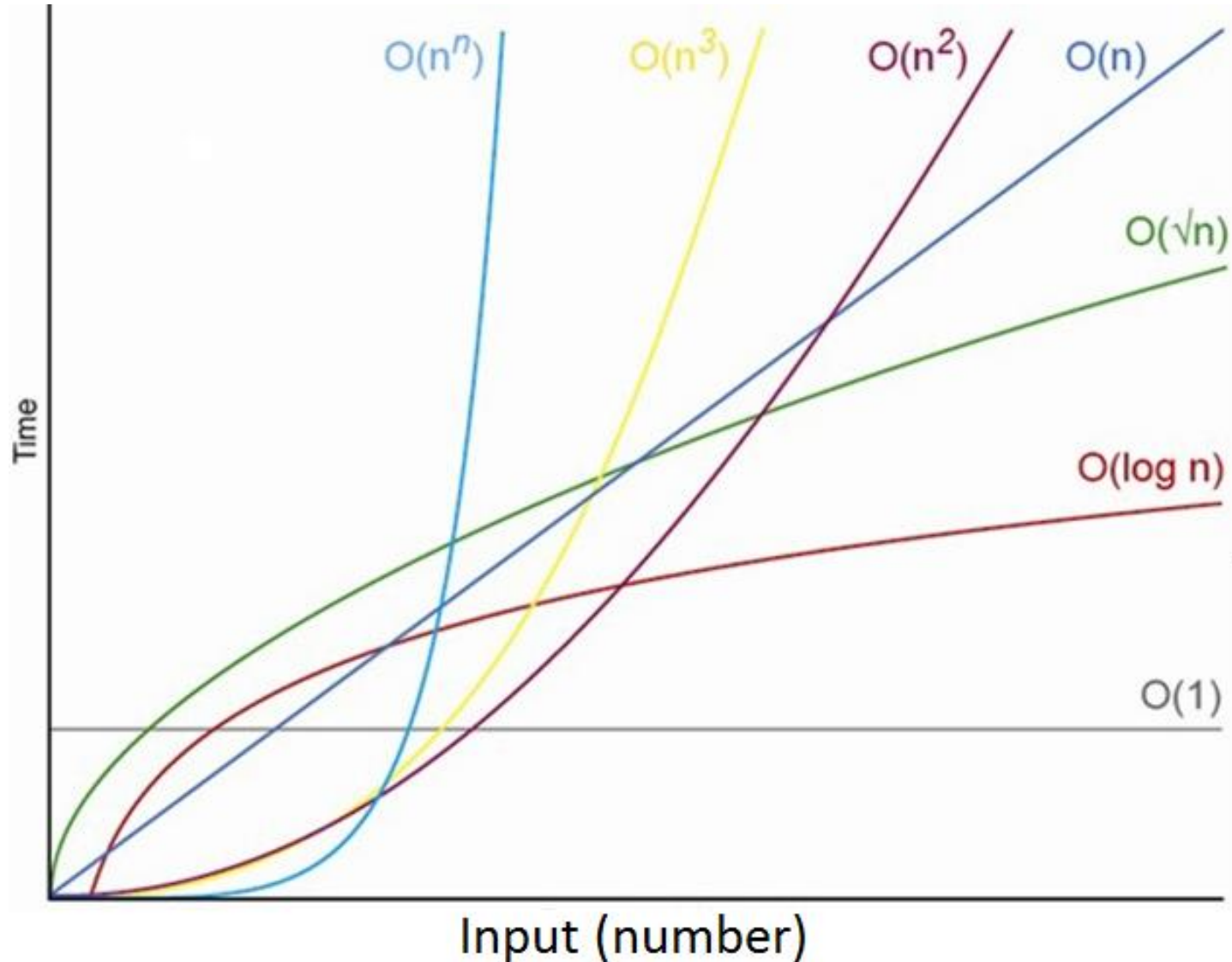
Algorithm	Time Complexity			Space Complexity
	Best	Average	Worst	Worst
Quicksort	$O(n \log(n))$	$O(n \log(n))$	$O(n^2)$	$O(\log(n))$
Mergesort	$O(n \log(n))$	$O(n \log(n))$	$O(n \log(n))$	$O(n)$
Timsort	$O(n)$	$O(n \log(n))$	$O(n \log(n))$	$O(n)$
Heapsort	$O(n \log(n))$	$O(n \log(n))$	$O(n \log(n))$	$O(1)$
Bubble Sort	$O(n)$	$O(n^2)$	$O(n^2)$	$O(1)$
Insertion Sort	$O(n)$	$O(n^2)$	$O(n^2)$	$O(1)$
Selection Sort	$O(n^2)$	$O(n^2)$	$O(n^2)$	$O(1)$
Shell Sort	$O(n)$	$O((n \log(n))^2)$	$O((n \log(n))^2)$	$O(1)$
Bucket Sort	$O(n+k)$	$O(n+k)$	$O(n^2)$	$O(n)$
Radix Sort	$O(nk)$	$O(nk)$	$O(nk)$	$O(n+k)$

Algorithmic Complexity

Write algorithm(s) in order to pick the smallest value in the given list of random numbers:

3, 6, 1, 7, 9, 5, 0

Algorithmic Complexity



Reference Books

