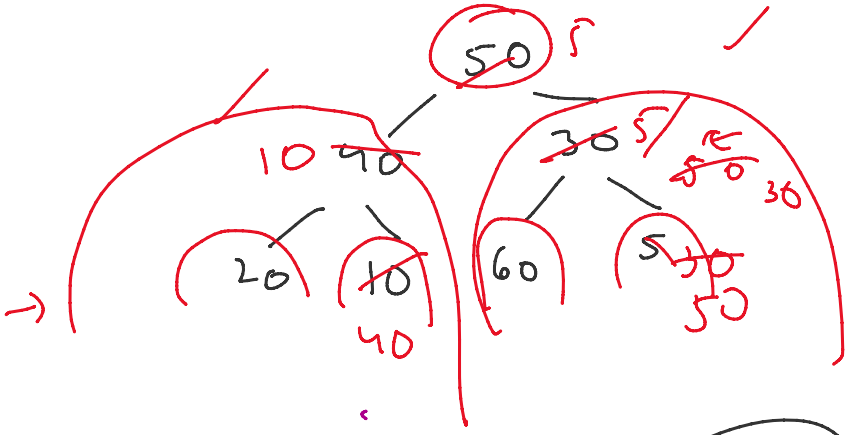
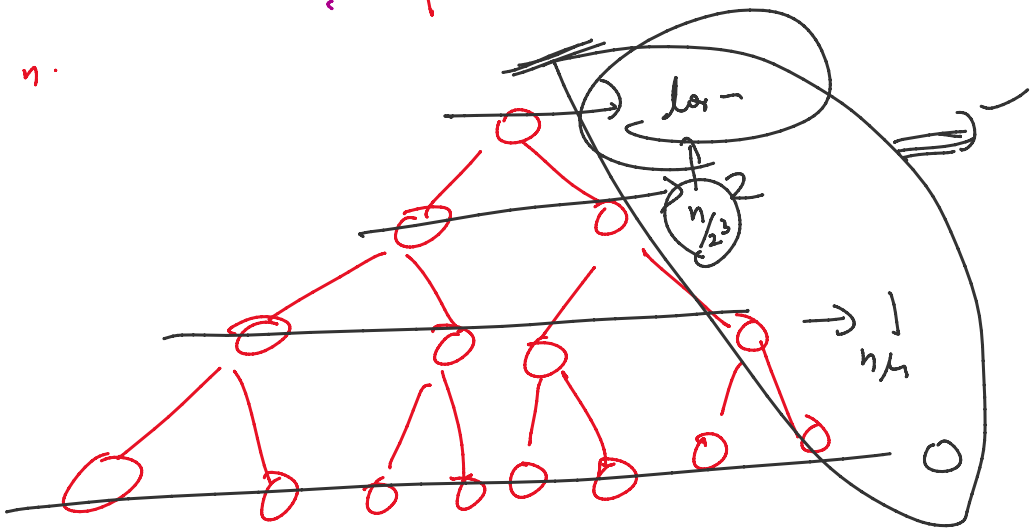
20 May 2023 16:49

{50, 40, 30, 20, 10, 60, 5}



min Heap



log n

n log n → O(n)

$$\Sigma \left(1 \cdot \log n + 2(\log n - 1) + 2^2 \cdot (\log n - 2) + \dots \right)$$

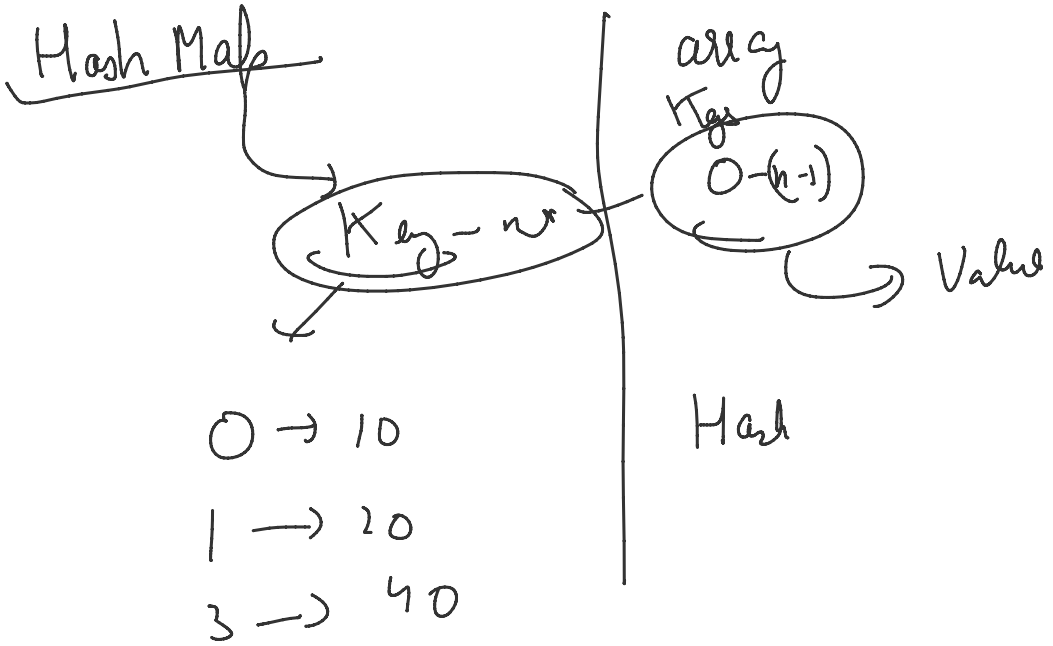
↳ O(n)

$$\log n + 2 \log n + 2^2 \log n + \dots \quad 2^n \log n$$

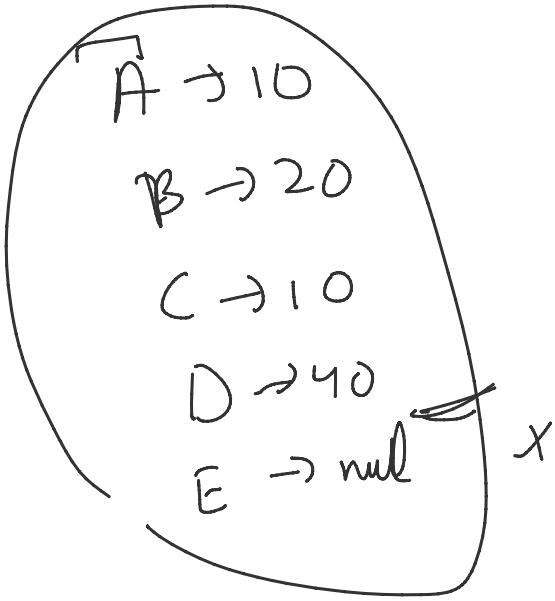
(log N) − N

$N \lg N - N$

Heap



< Key, Value >



nums = [2,7,11,15], target = 9

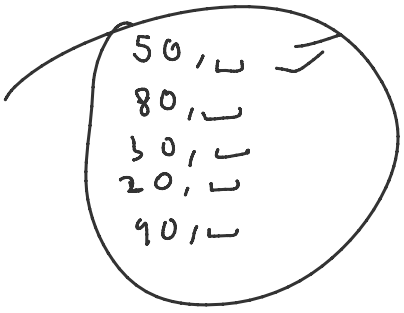
From <https://leetcode.com/problems/two-sum/>

HM <ele, i>

2, 7

0

int[] arr1 = { 30, 20, 40, 50, 70, 30, 20, 20, 50, 50 };
int[] arr2 = { 50, 80, 30, 20, 20, 20, 90, 50, 20 };



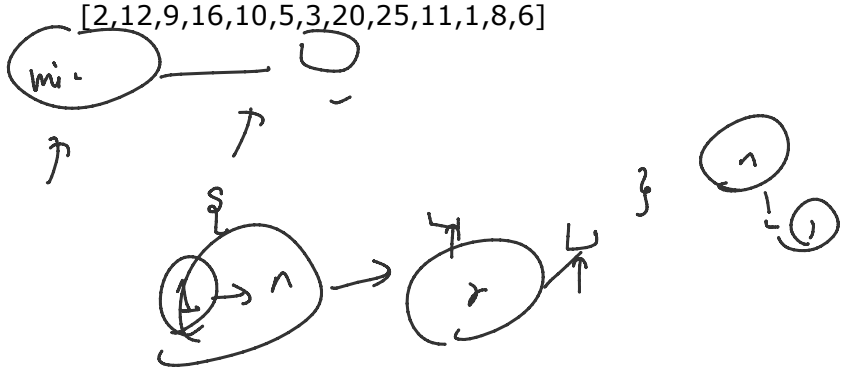
Sol1) (n log n + n log n)

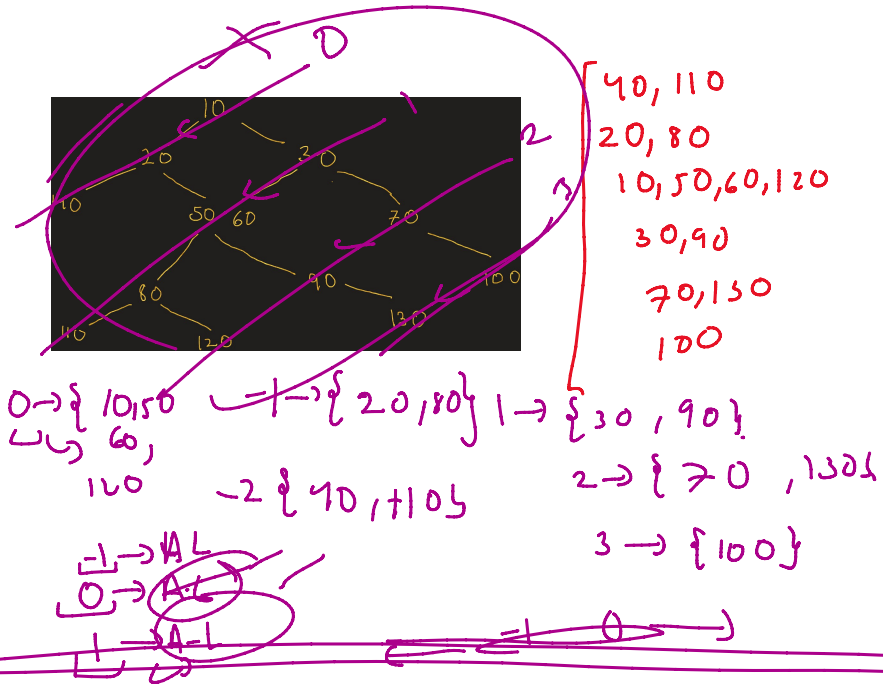
Sol2) O(N + M)

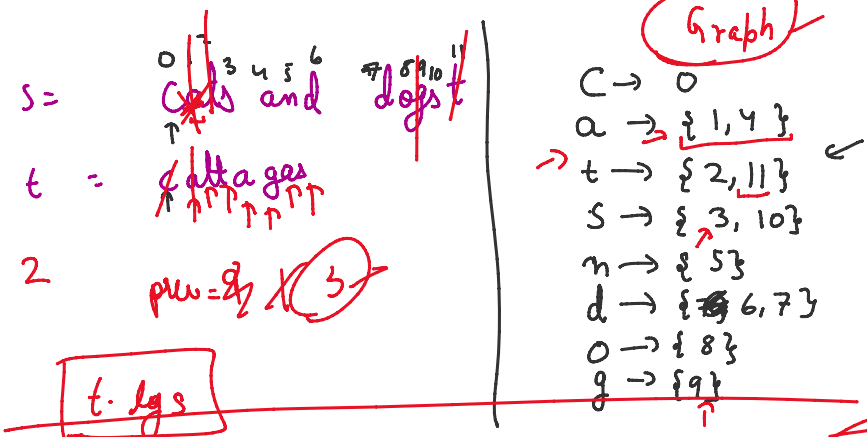
You are given an array of Integers in no particular order. Write a Program to find the longest possible sequence of consecutive numbers using the numbers from the array.
Target O(n)
Input : [2,12,9,16,10,5,3,20,25,11,1,8,6]
Output : [8,9,10,11,12]
Input : [15,13,23,21,19,11,16]
Output : [15,16]

20 25

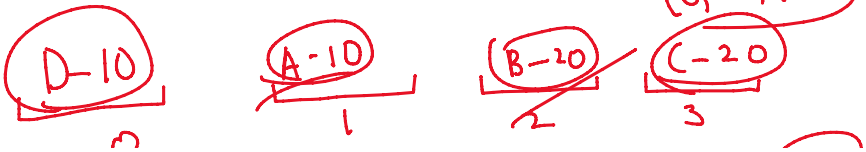
[2,12,9,16,10,5,3,20,25,11,1,8,6]

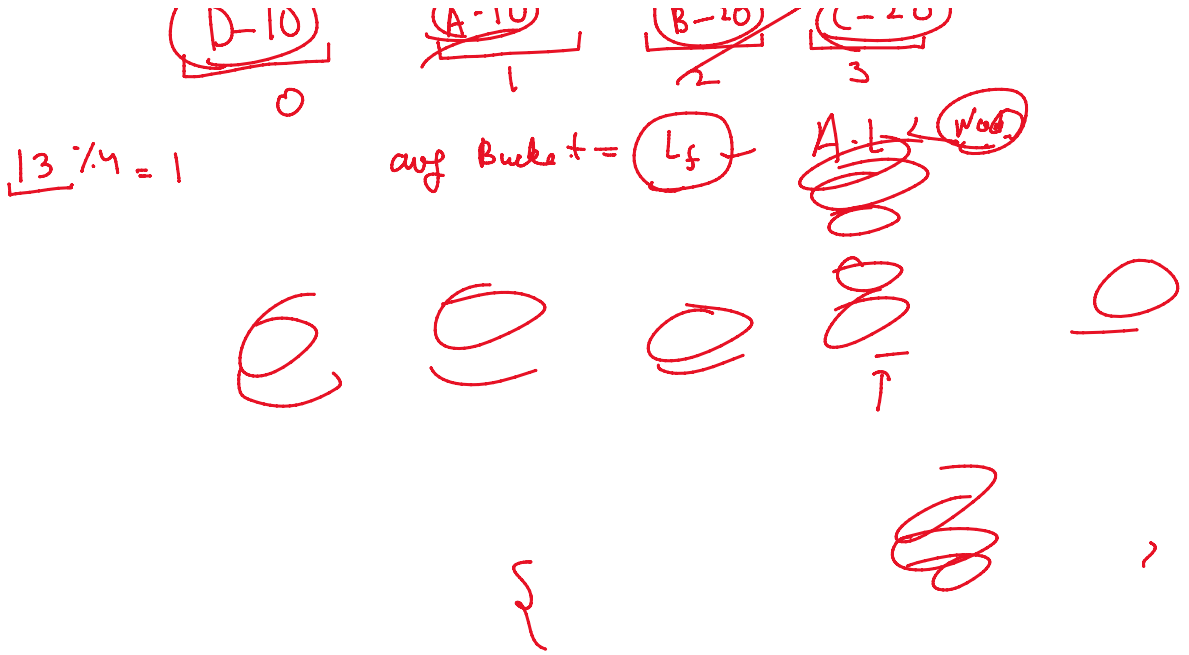






Load factor = $\frac{\text{no. of nodes}}{\text{total buckets}} = 2$




D-10
0
A-10
1
B-20
2
C-20
3
13 % 4 = 1
avg Bucket += Ls
A.L
WOB