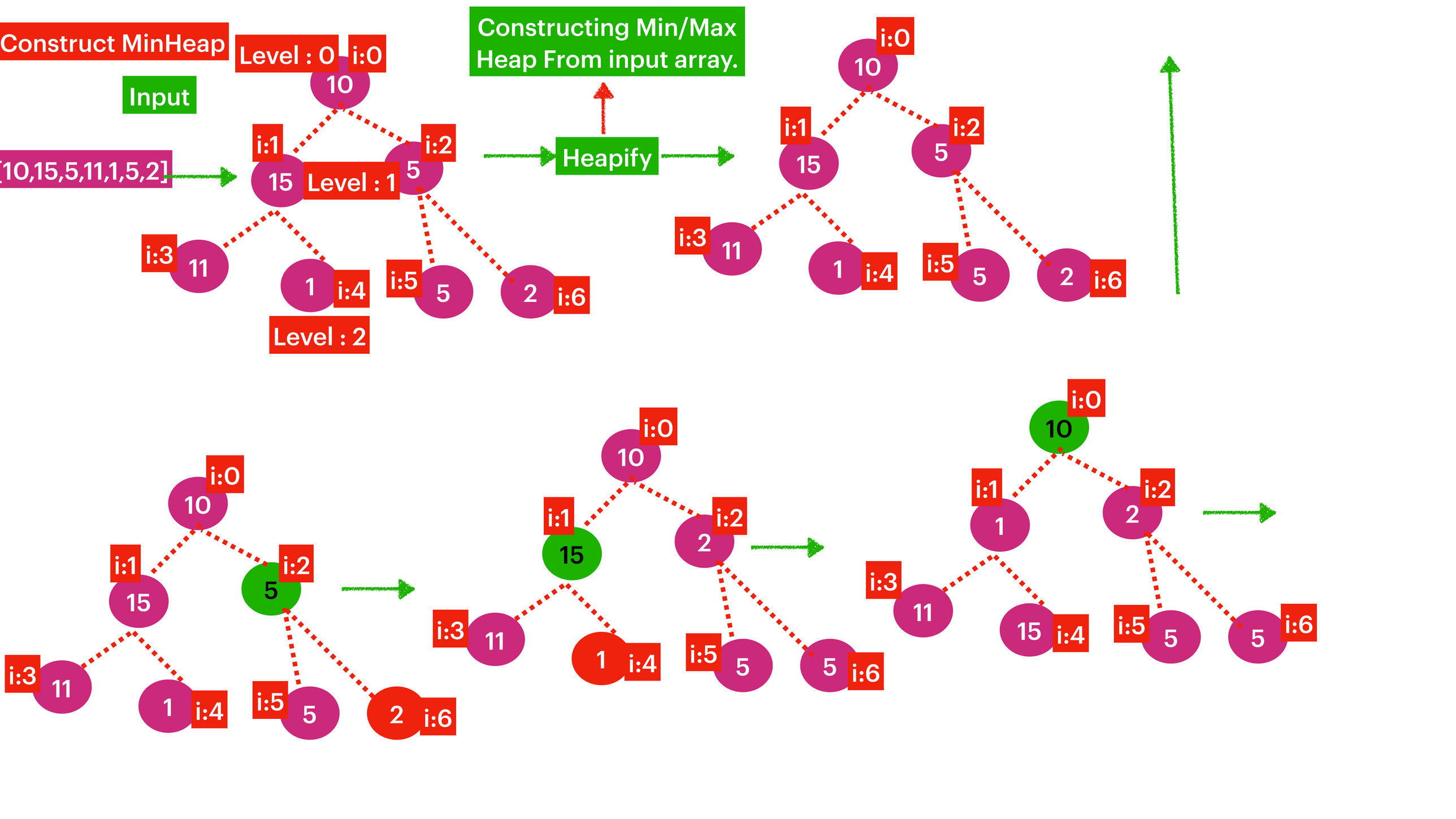
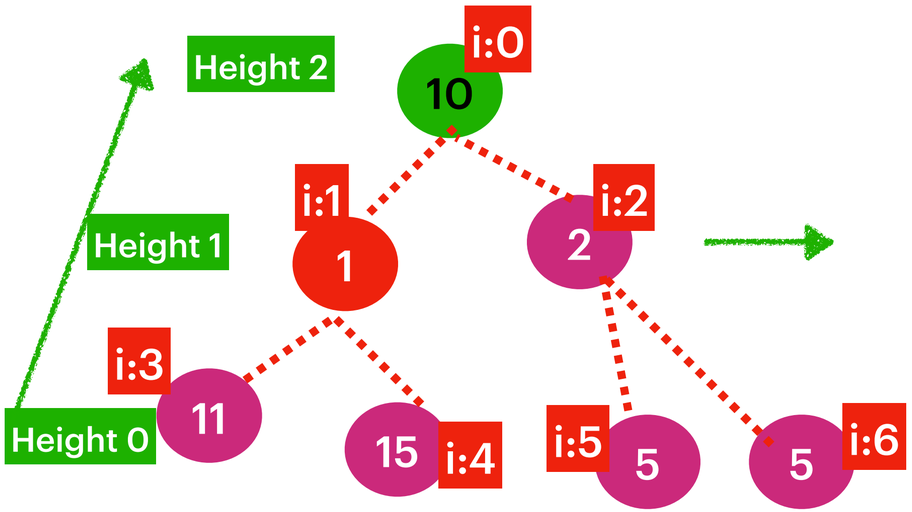
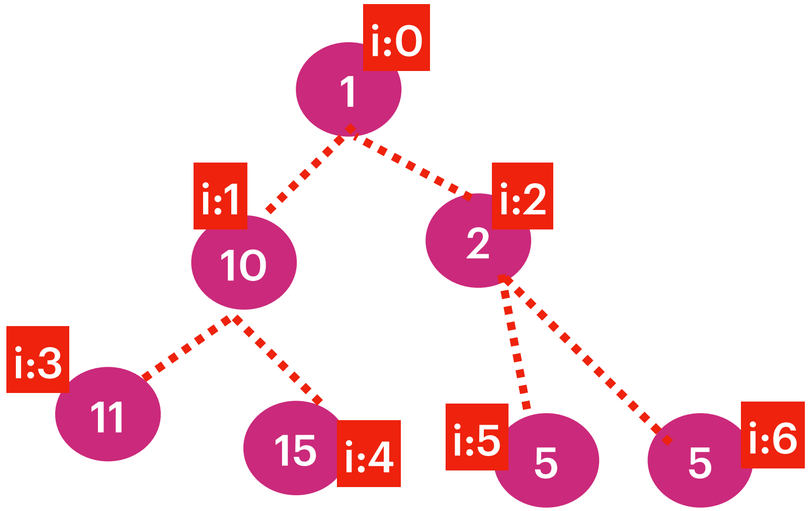

Construct MinHeap
Input
[10,15,5,11,1,5,2]
Level : 0
Level : 1
Level : 2
i:0
i:1
i:2
i:3
i:4
i:5
i:6
10
15
5
11
1
5
2
Heapify
Constructing Min/Max
Heap From input array.





Height 0 → 0 Swaps = n/2 * 0 = 0

Height 1 → 2 Swaps = n/2 * 1/2 = n/4

Height 2 → 1 Swaps =(n/2 * 1/2) * 1/2 = n/8

Sumation = 0 * n/2 + n/2 * 1/2 + n/4* 1/2
= 0 + 7/4 + 7/8
= 2 + 1 = 3swaps

Logn

(i) * (n/ 2^I+1)

I = 0

Sumation = 0 * n/2 + n/2 * 1/2 + n/4* 1/2
= 0 + 7/4 + 7/8
= 2 + 1 = 3swaps

(logn)

(i) * (n/ 2^I+1)

(i) = 0

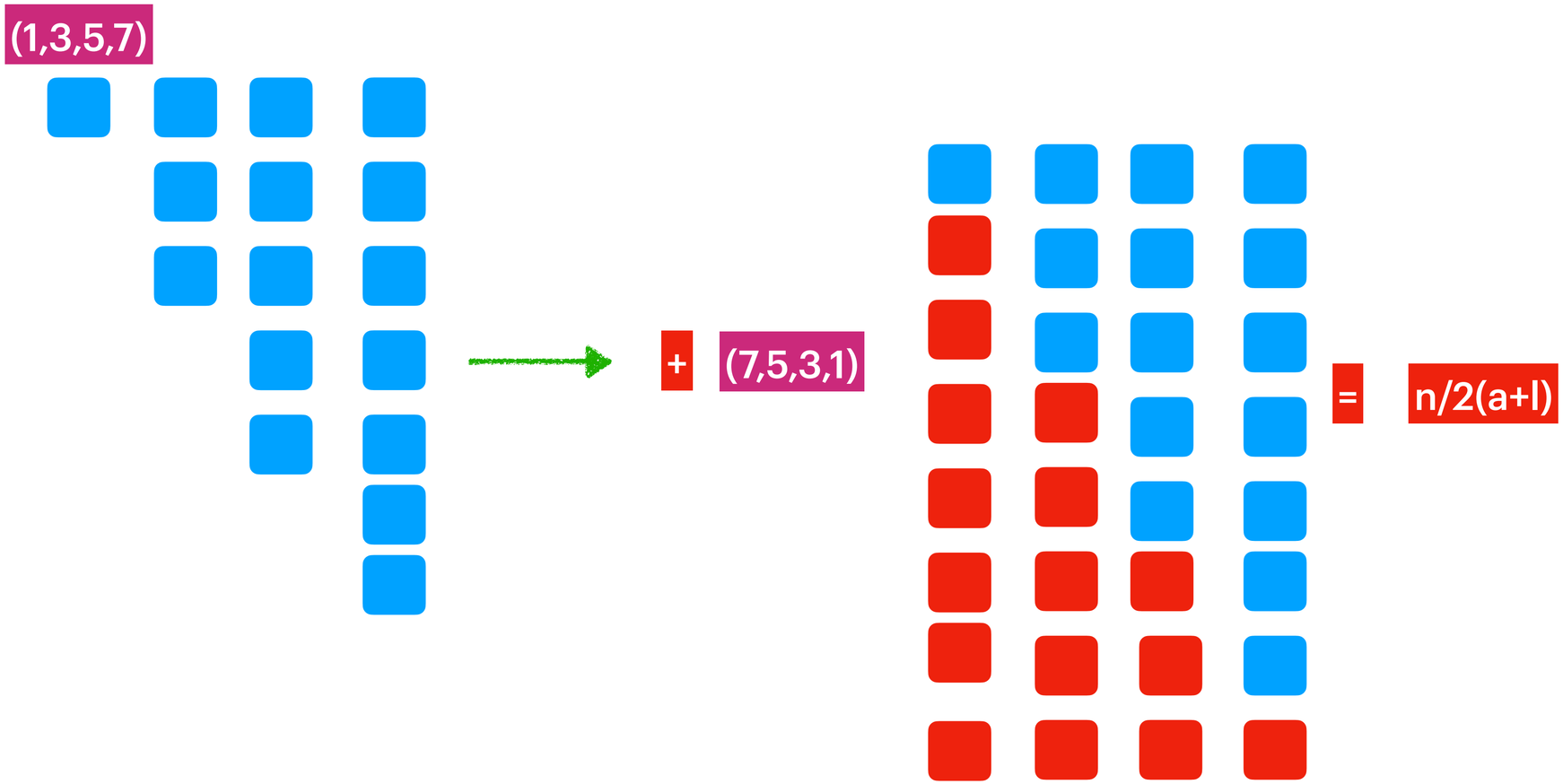
0 * n/2 + n/2 * 1/2 + n/2* 1/4+ .....
=> n/2(0+1/2+1/4+....)

Arithmetic Series
(-4 , 3 , 10, 17)
(1,3,5,7)

(-4 , 3 , 10, 17) = 26
n/2(a+l) = 4/2(-4+17)
= 2(13) = 26

(1,3,5,7) = 16

(1,3,5,7,9,11) = 36
N/2(a+l) = 6/2(1+11) = 36


(1,3,5,7)
+
(7,5,3,1)
=
n/2(a+l)

1+1/2+1/4+1/8+.... = 1 * 1/2^0 + 1* (1/2^1) + 1 * 1/2^2 + 1 * 1/2^3

Geometric Series

r = 1/2

Sn = a r^0 + a r^1 + a*r^2 + ... + a*r^n-3 + a*r^n-2 + a*r^n-1

rSn = ar^1+ a r^2+ a*r^3 +.... + a*r^n-2+a*r^n-1 + a*r^n

Sn - rSn = a - ar^n

Sn(1-r) = a (1 -r ^n)

Sn = a (1-r^n) / (1-r)

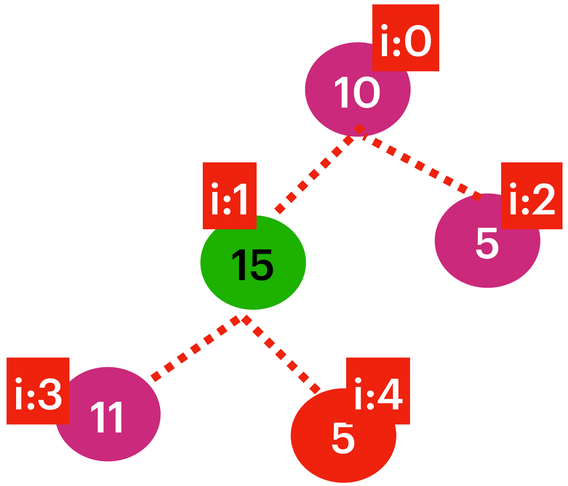
0 * n/2 + n/2 * 1/2 + n/2* 1/4+ .....

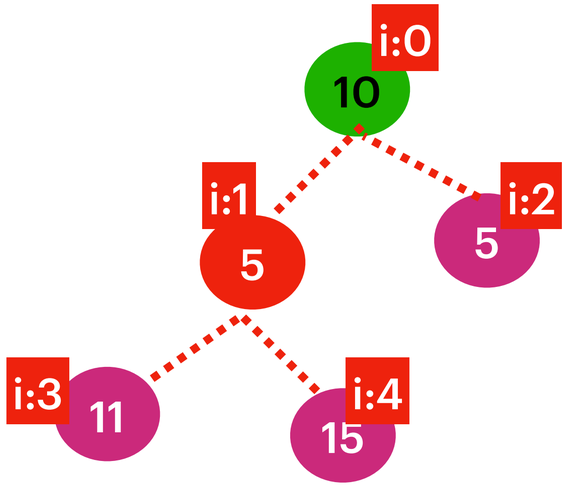
=> n/2(0+1/2+1/4+....)

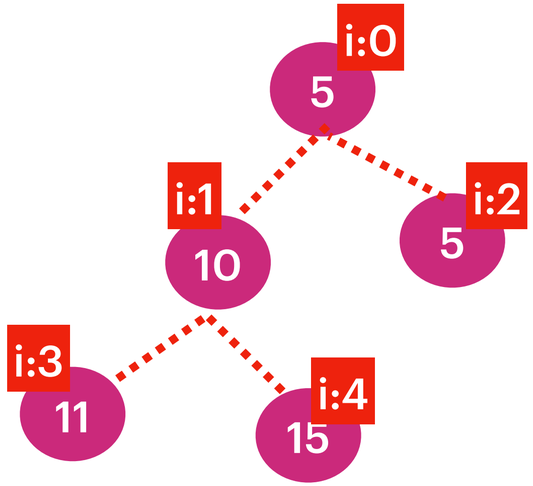
=> n/2(a (1-r^n) / (1-r))

=> n/2 * 2 = n

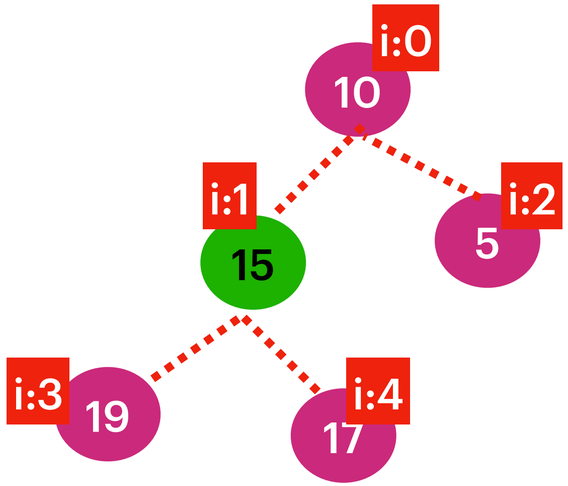
O(n)

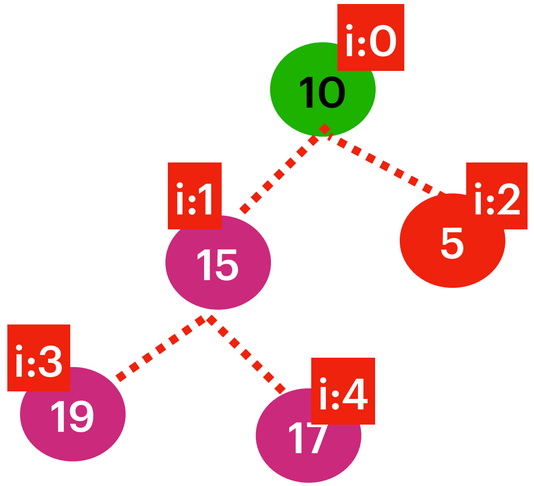


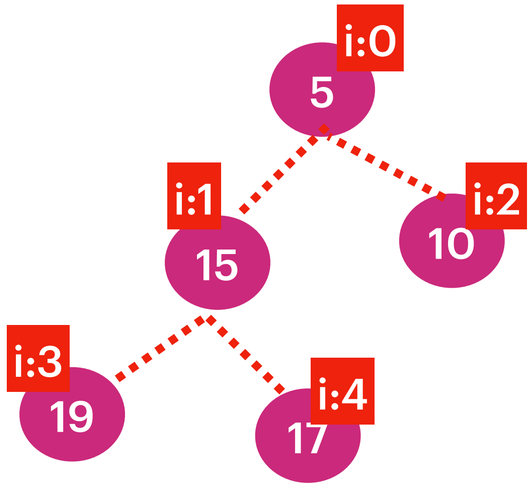




hepifyStartIndex = N/2 - 1;
leftIndex = 2*index + 1
rightIndex = 2*index + 2


i:0
10
i:1
15
i:2
5
i:3
19
i:4
17


i:0
10
i:1
15
i:2
5
i:3
19
i:4
17


i:0
5
i:1
15
i:2
10
i:3
19
i:4
17