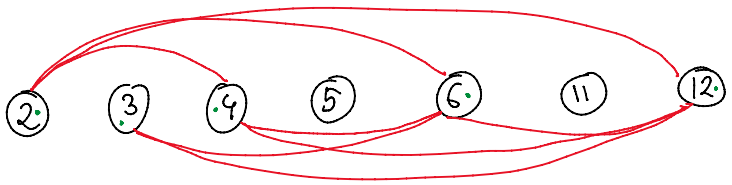
Class 16

Wednesday, November 10, 2021 9:00 PM



2, 3, 4, 6, 12 → component

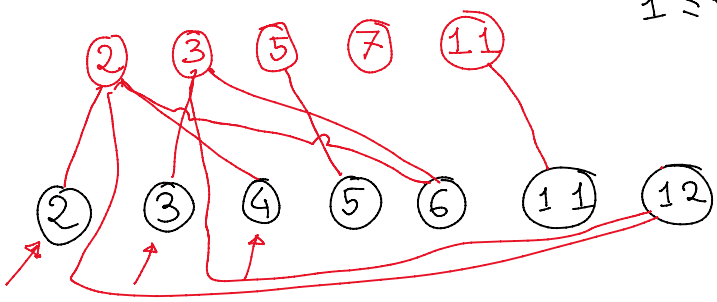
5

11

$1 \le T \le 100$

$1 \le N \le 10^5$

$1 \le v \le 10^6$

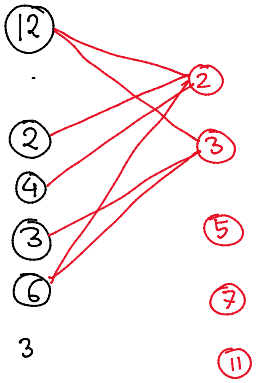


gcd (a,b) = g > 1 gcd > 1

2, 3, 4, 5, 6, 7, 8, ...

12 → 2, 3

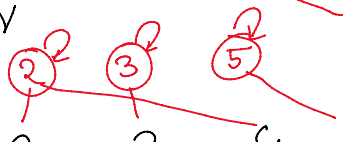
30 → 2, 3, 5



* Connect two groups → O(1)
* Check whether two elements reside in same group → O(1)

8 (eight) connection

8 N



1 2 3 4 5 1

1 1 1 1 1

3 1 5 2 6

K th smallest

i / i

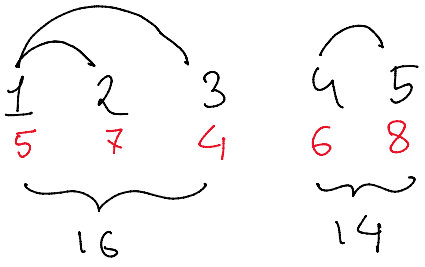
3, 1

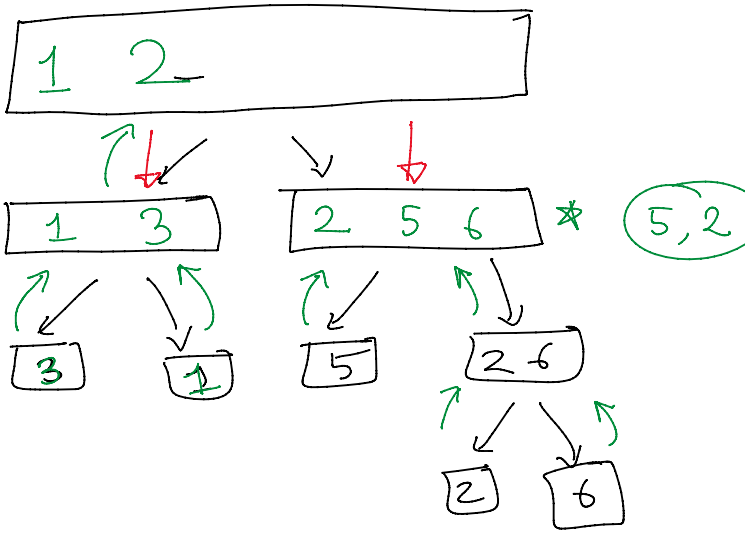
1 1 1 1 1

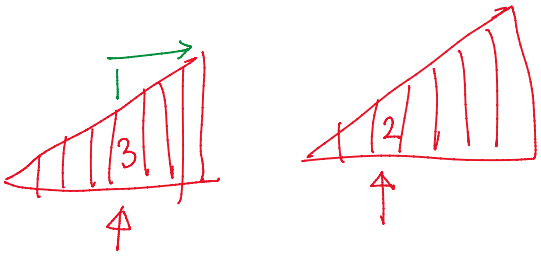
i < j

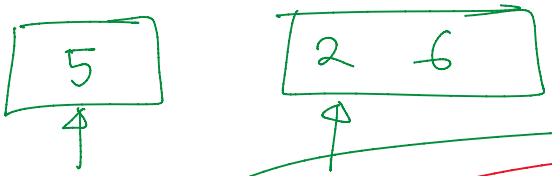
arr[i] > arr[j]

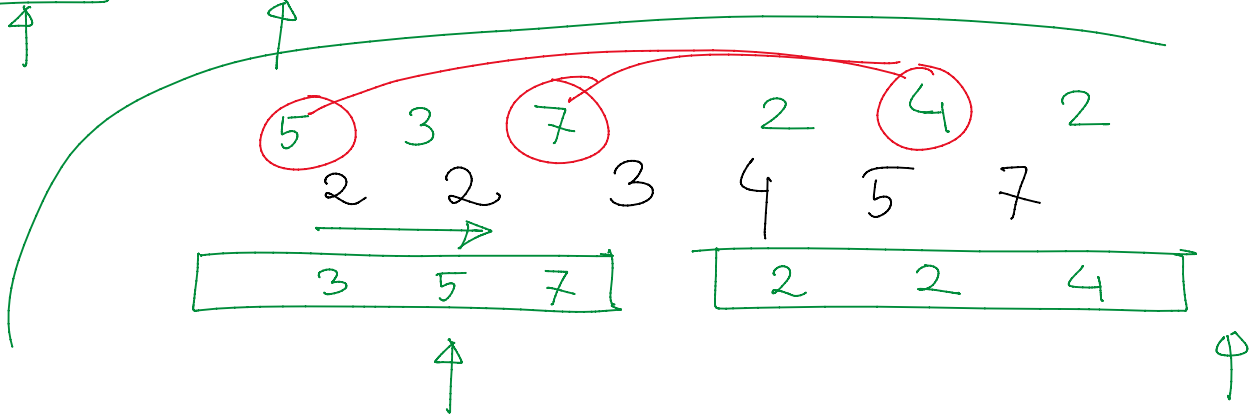
3, 1
3, 2
5, 2









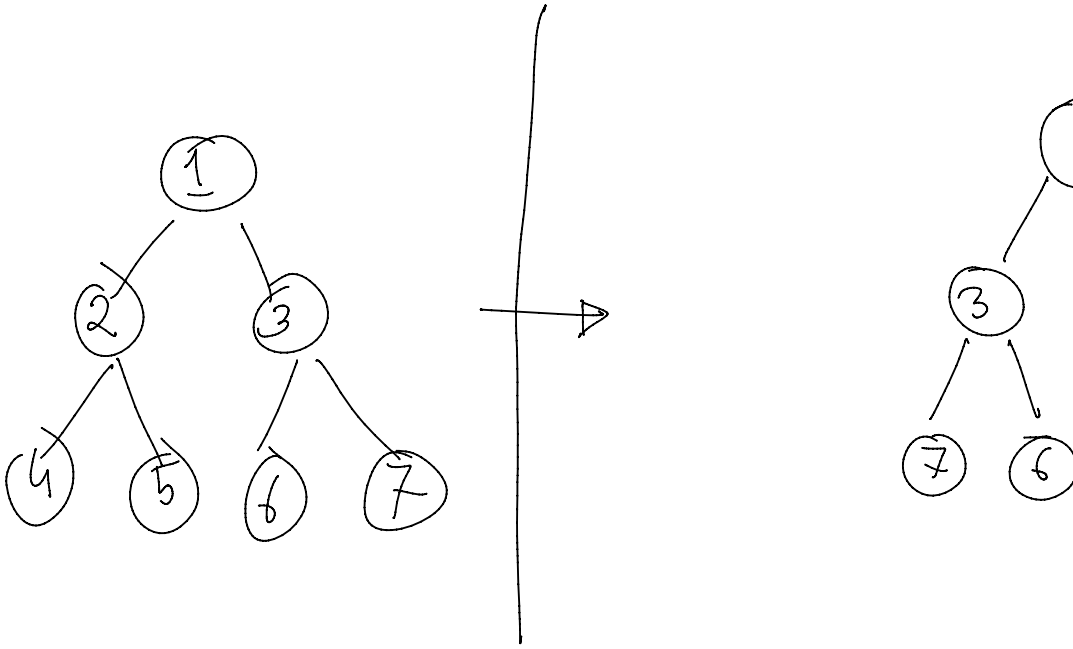


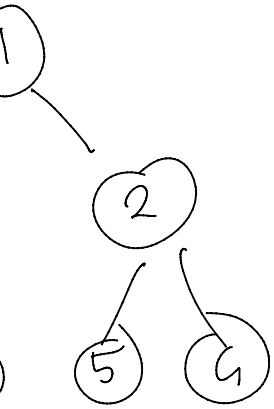
invCount += (~~~) & = 3+3+2

Implicit Segment Tree → O(N log N)

Treap →

homebrew




1
2
5
4