online offline queue

Q2 n persons standing in a row. at positions [1 - n]. You can do 2 operations

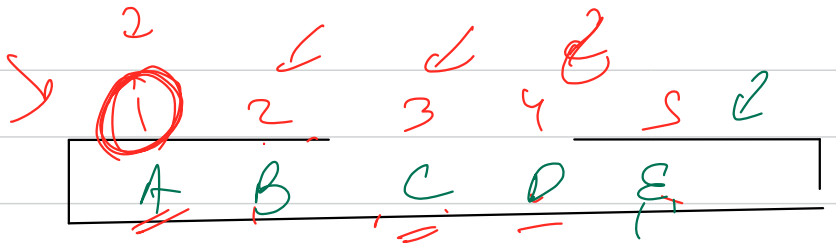
(1) - x → the person at position x left

(2) ? x → find the nearest person to the right of x that is still standing (not left)

↳

$n \leq 10^6$
$q \leq 10^6$

Similar



-1

→ 5 persons

(— 3)

? 3

— 2

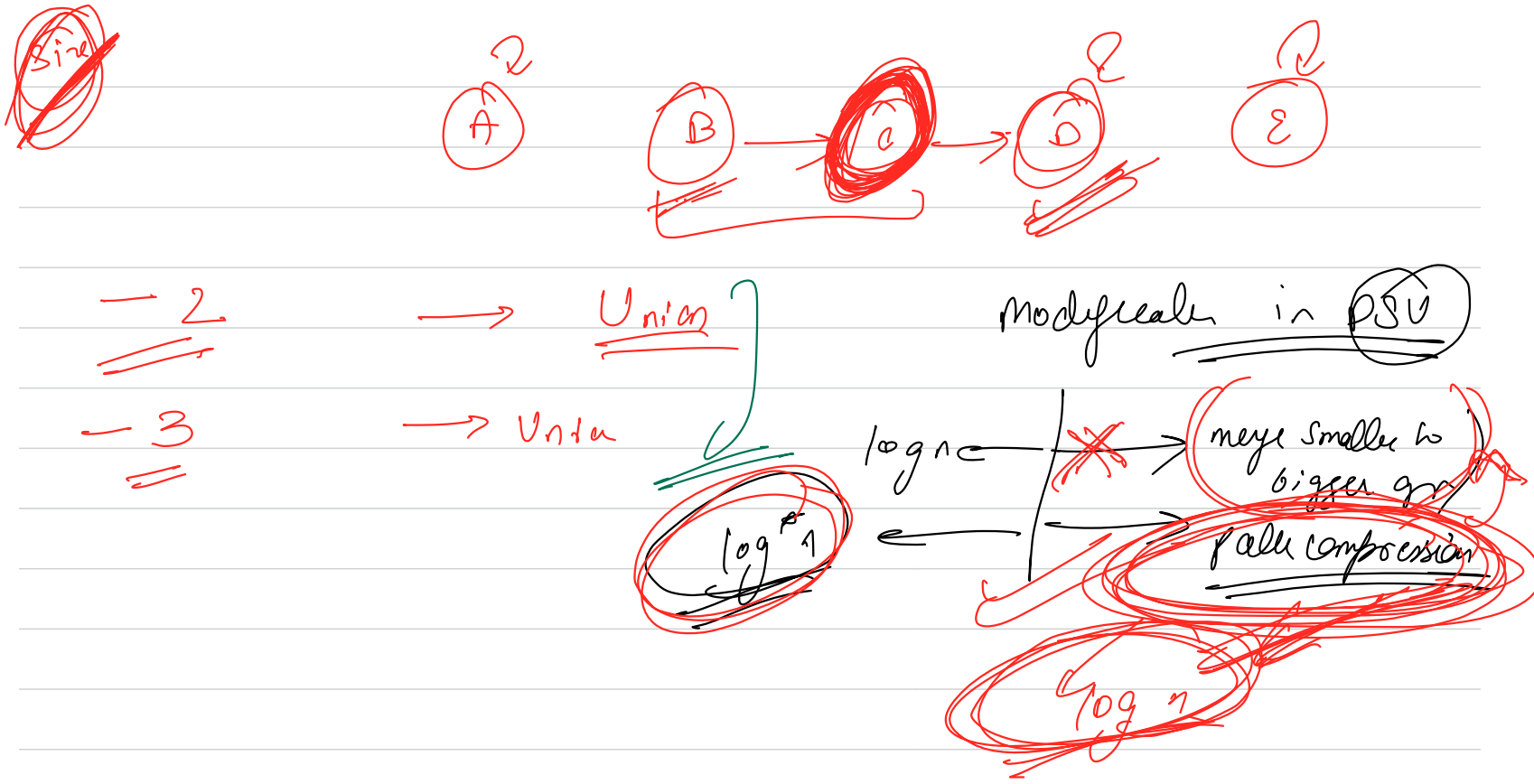
p 1

: 2 -

Get(x)

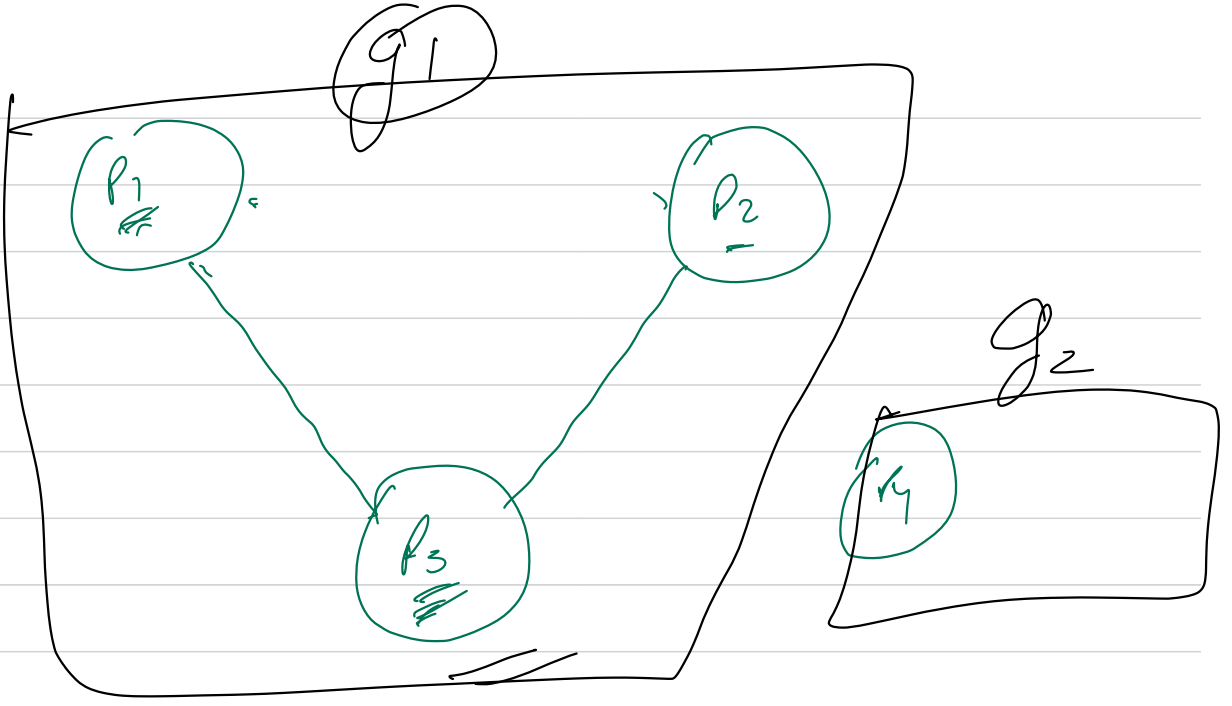
Union(x, x+1)

Leader of group will be the rightmost element


Sink
A
B
C
D
E
2
3
Union
Union
modifiable in DSU
log n
merge smaller to bigger group
path compression
log* n
log n

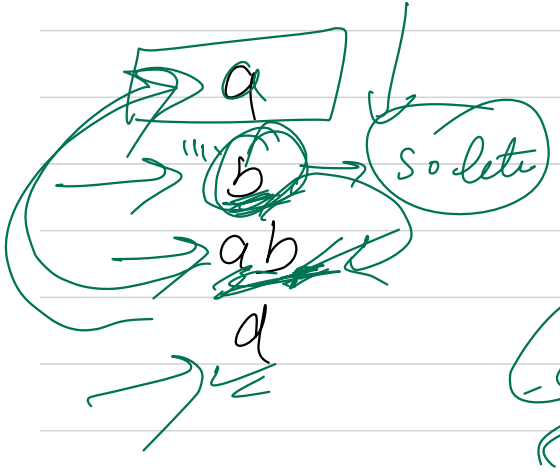
Union ()
Cut () → calls just base
Compress

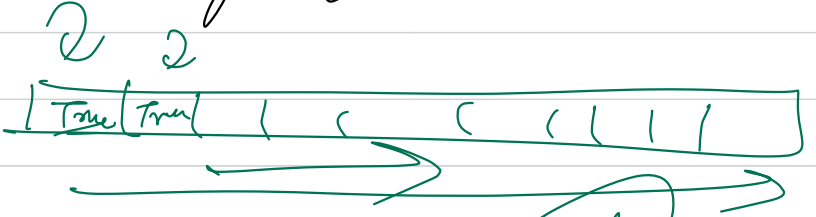
DFS

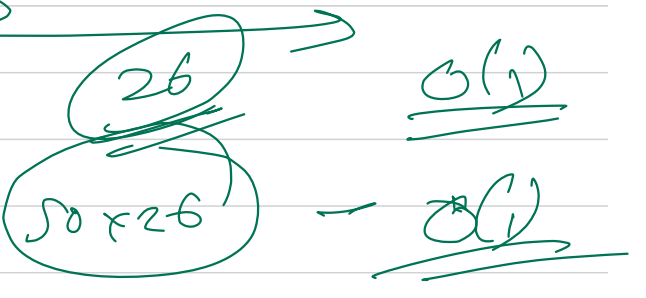


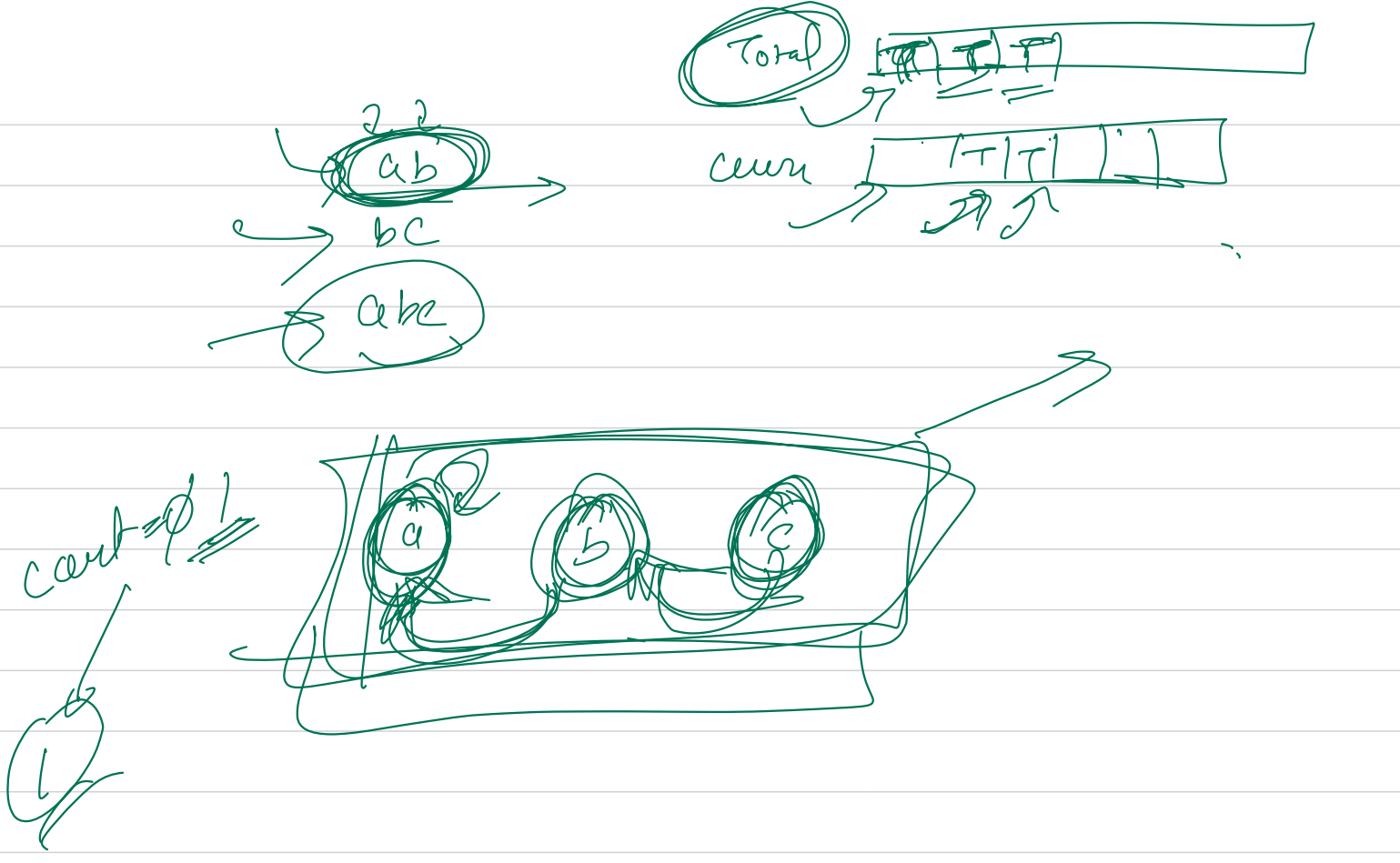
Calculate Connected components | DSU

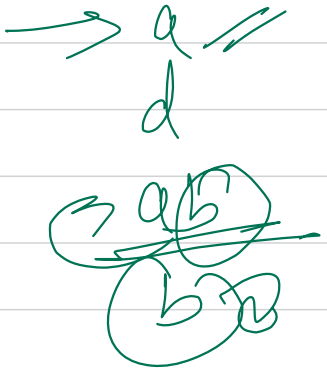
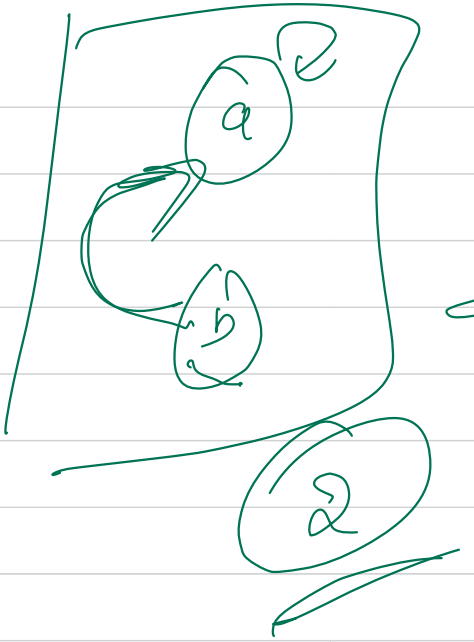
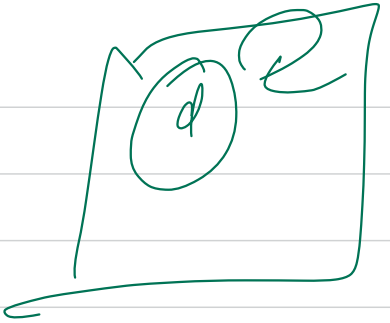
↳ We will union the strings into groups & calculate total no. of groups








Total
curr
ab
bc
abc
a
b
c
count = 1
1

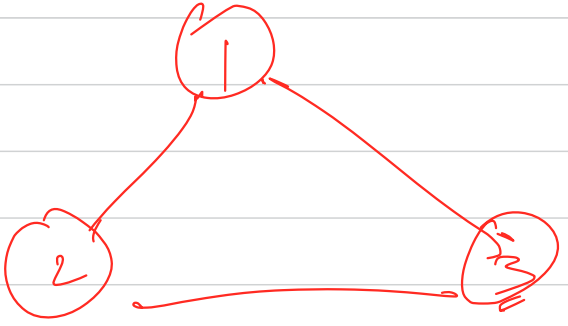




no of vertices $\leq 5 \times 10^3$ no. of edges $\leq 10^5$ ques $\leq 10^5$

Q) Undirected graph & a pair operations that each edge will be cut one

→ cut a b → remove edge A & B

Get a b → whether a & b are in same connected component or not?



Get 3 3 → Yes

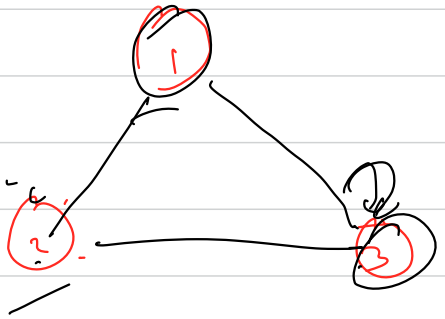
cut 1, 2

Get 1 2 → Yes

cut 1 3

Get 2 1 No

cut 2 3 Yes



V = 3 C = 3 Q = 7

Offline Queries

Yes ⟸ find 3 3

⟹ cut 1 2

Yes ⟸ find 1 2

Wonder ⟹ cut 1 3

NO ⟸ find 2 1

⟹ cut 2 3

NO find 3 1

Before this for all above queries 2-3 will be an edge