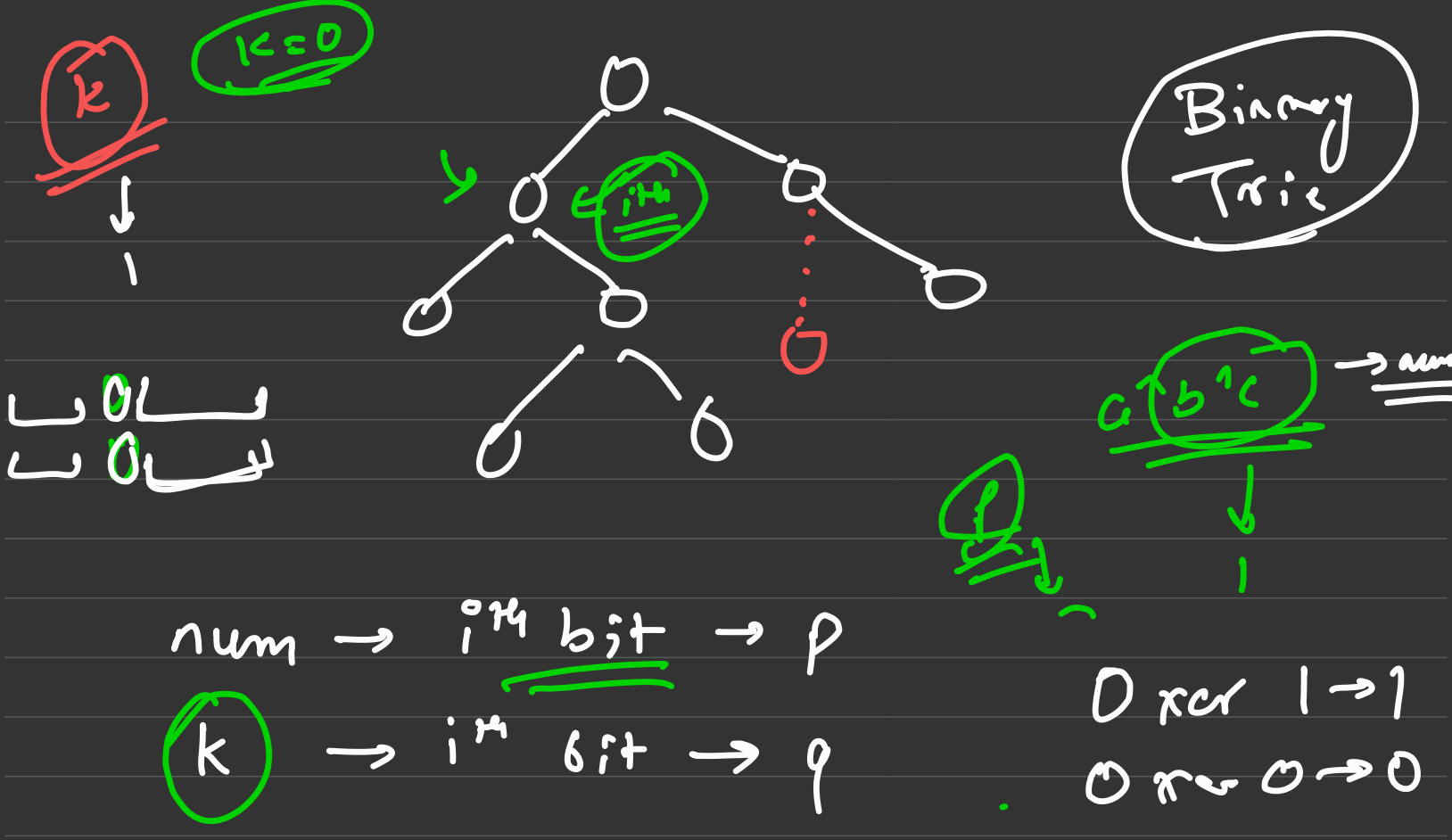
Q: Count subarrays with xor less than K

K

[a, b, c, d, e]

xor prefix array

[a, a^b, a^b^c ....]


k
k=0
1
0
0
i
i^th
0
0
Binary Trie
a b c
num
1
1
num → i^th bit → p
k → i^th bit → q
0 xor 1 → 1
0 xor 0 → 0

ith bit of num

q → 1 → p → 1 → right complete + recurr left

→ 0 →

q → 0 → p → 1 → recurr right

→ 0 → recurr left

Q: Given a list of strings. And q queries. In each query, you get a string str. for each query return how many strings are lexicographically less than str.

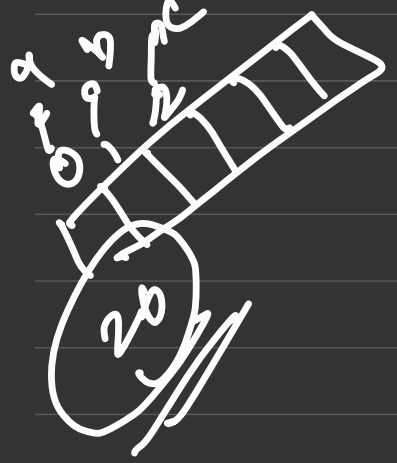
BS

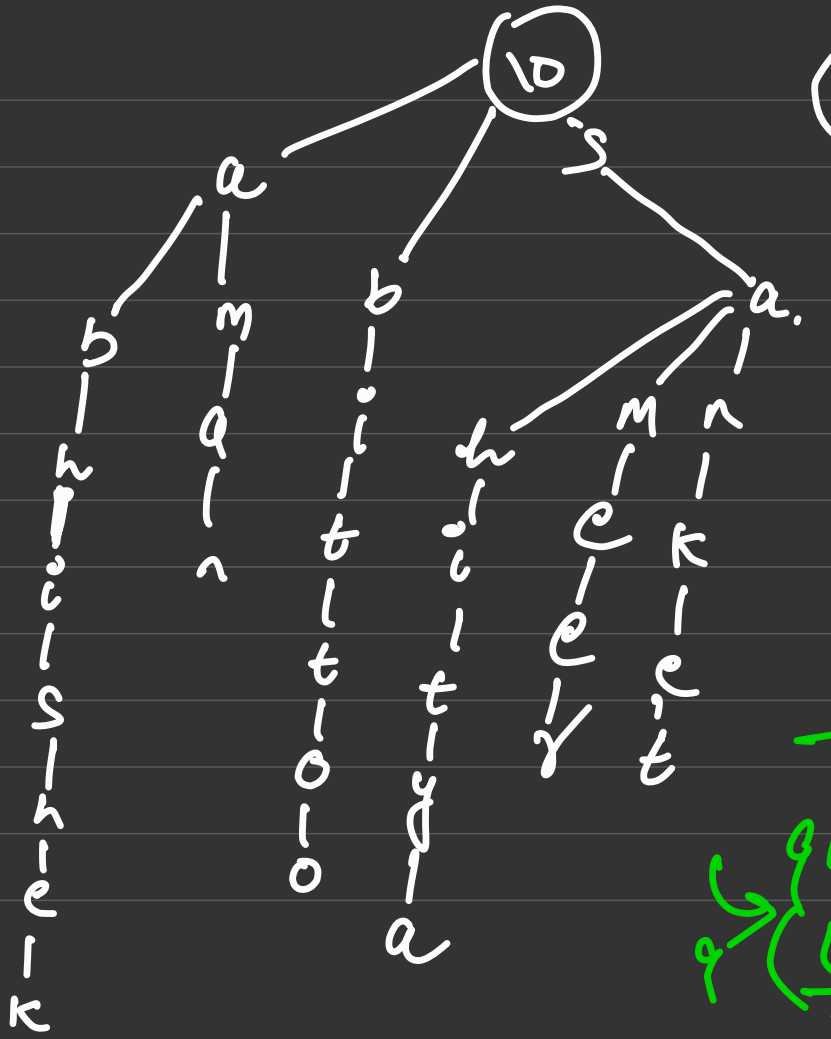
sort → [— , — , — , —] n

$(n \log n + q \log n \times l)$

q
↳ str

↳ sanket
↳ sameer
↳ sahitya
↳ aman
↳ abhishek
↳ bittoo





gaurav

samyak

$O(n \times l + q \times l)$

query → insert

$q \left(\log n \times l + \log n \times l \right)$

Q:) [zebra, dog, duck, dove] → arr

find the shortest unique prefix for each word.

ans → [z, dog, du, dov]

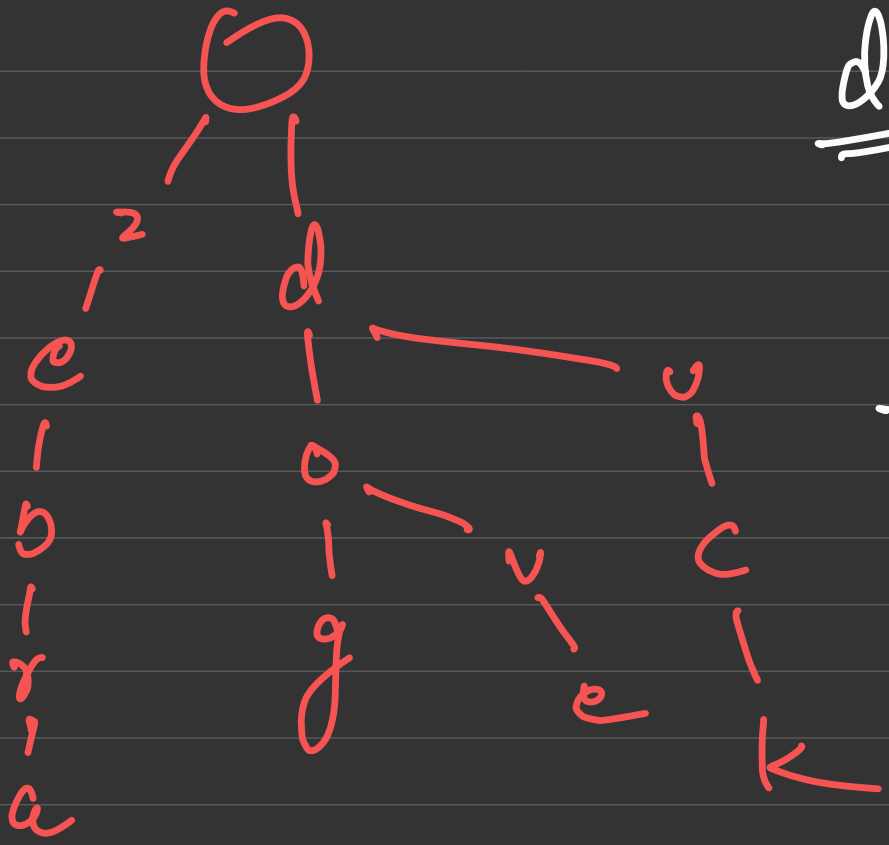
TRIE

zebra

z

dog

dog



dove

dov

dv