

Q. Given 'n' strings, sort them lexicographically.

abc < bat

we start comparing letters from the start, and whichever is less, comes first in lex. order.

↓ t
aa

t
aaa
↑ t
prefix

if one of the strings is prefix of another, then the prefix - comes first.

Q. Given two strings find out which one is lexicographically smaller?
only consist of
lower case a-z.

Q. Merge two sorted arrays?

a = {1, 2, 2, 3, 4, 5}, b = {1, 1, 2, 4, 4, 6, 8, 9}

merge array = {1, 1, 1, 2, 2, 2, 3, 4, 4, 4, 5, 6, 8, 9}

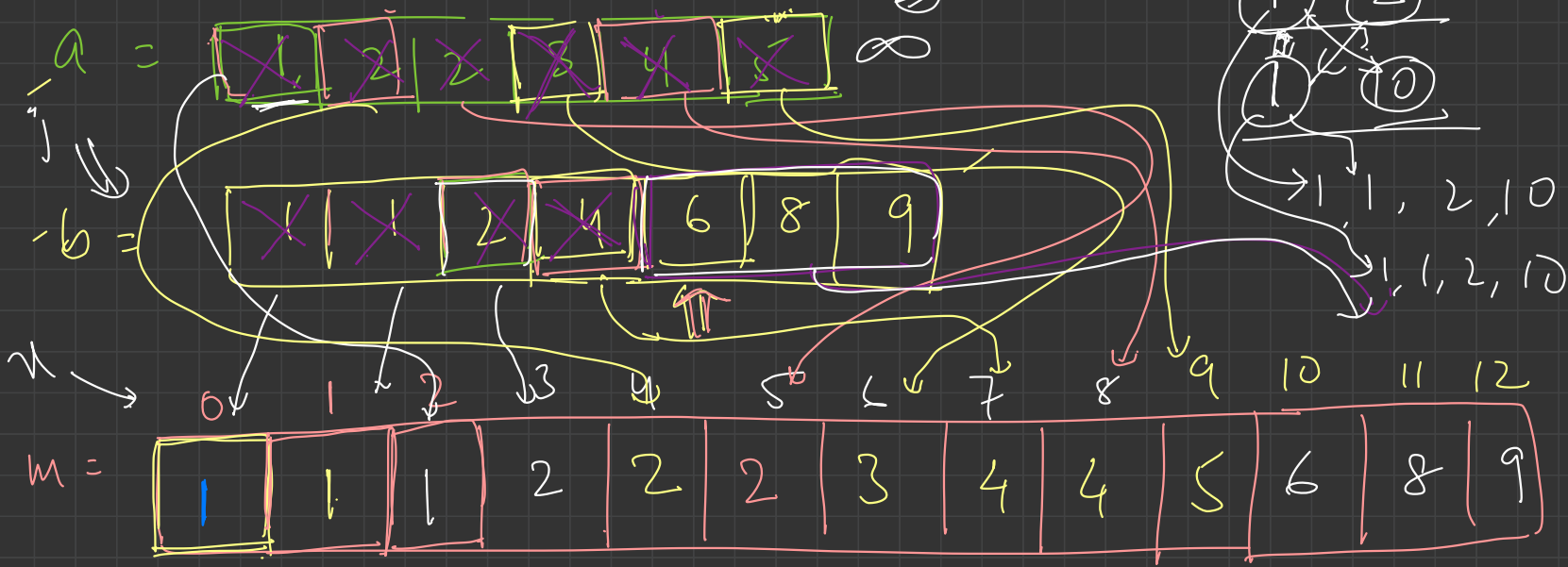
one-way: brute force

- create a new array of size $n+m$
- copy values of $a[]$ from 0 to $n-1$
- copy values of $b[]$ from n to $n+m-1$
- sort the combined array??
↳

Q Do we have a better way??

it doesn't
matter whether
 $a[]$ and $b[]$
were sorted

merged_arr[n+m] =



it will be smallest of all elements

$a[i]$

$b[j]$

is overall. we compared elements $n+m$ times to merge the arrays

if ($a[0] < b[0]$)

$merge[0] = a[0]$

else
 $merge[0] = b[0]$

if ($a[0] < b[1]$)

$merge[0] = a[0]$

else

$merge[0] = b[1]$

↓
first element
of a , $a[0]$

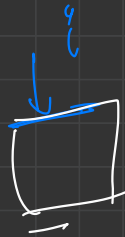
↓
first of element
of b , $b[0]$

compare the smallest elements
of $a[]$ and $b[]$, append it
to the merged array, and
delete the element from the
original array used.

Break till 9:50

$a = \{1, 1, 2, 3\}$

$b = \{1, 2, 2, 4, 5\}$



Q. alternate rectangles

Q. less or equal elements

→ pick the min element from i and j , and place it at n .

→ then change, n , i or j accordingly

✓ $m = \{1, 1, 1, 2, 2, 2, 3, 4, 5\}$



n, m

$n=5, m=5 \rightarrow$ create a matrix of

$n \times m$

X	X	X	X	X
X	0	0	0	X
X	0	X	0	X
X	0	0	0	X
X	X	X	X	X

??

\rightarrow we have top-row, bottom-row,
left-col, right-col.
and ans

Q. Given a sorted array, find the no of elements less
or equal to X.

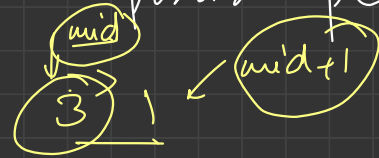
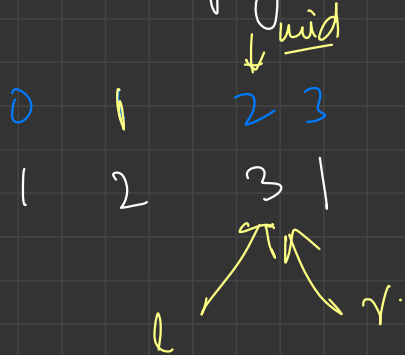
1, 1, 2, 2, 3, 4, 5, 89.

$X=5$

output \rightarrow 7

- iterate over the array and keep a count variable, init to 0
- if $(a[i] \leq x)$ count++;
- output count??

both l and r are trying to point to the possible peak element—

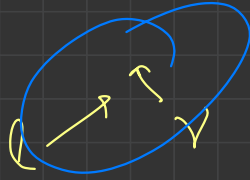
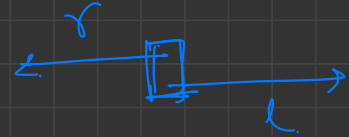


can 1 be
peak element?

Can 3 be a peak element—

$$\text{mid} = \frac{0+3}{2} = 1$$

$$\text{mid} = \frac{2+3}{2} = 2$$



we have

no element before which
can be peak

there's no element
after which can be
peak