

## Smallest distinct window

String S = A A B B B C B B A C

$$\text{length} = S.\text{size}() = 10$$

Count unique character and store in

$$\text{dibb} = 3$$

| Vector                  | 0 | 1 | 2 | - - - | 65 | 66 | 67 | - - 255 |
|-------------------------|---|---|---|-------|----|----|----|---------|
| $\uparrow \text{Count}$ | 0 | 0 | 0 | 0     | 0  | 0  | 0  | 0       |

Note:- If dibb not equal to 0 (

jab tak jis window ke size mere ka karna ha)

→ If dibb become zero than decrease the ~~window~~ window size from start.

→ dibb = 0 mean it count every 1 each unique character

→ dibb = 1 mean it does not take inside window character

$S = A A B B B C B B A C$

$$\text{len} = 10 - b$$

$$-dibb = 8 \times 10$$

Count = 

|   |   |   |   |    |    |    |   |   |     |
|---|---|---|---|----|----|----|---|---|-----|
| 0 | 1 | 2 | - | 65 | 66 | 67 | - | - | 255 |
| 0 | 0 | 0 | 0 | 1  | 1  | 1  | 0 | 1 | 0   |
| x | x | x |   | 1  |    |    |   |   |     |
| 2 | 2 | 3 |   |    |    |    |   |   |     |
|   |   |   |   |    |    |    |   |   |     |

→ every char exist in b length window  
then decrease from start of window

Count = 

|    |    |    |   |   |   |   |   |   |   |
|----|----|----|---|---|---|---|---|---|---|
| 65 | 66 | 67 | - | - | - | - | - | - | - |
| 2  | 3  | 1  |   |   |   |   |   |   |   |
| x  |    |    |   |   |   |   |   |   |   |
| 0  |    |    |   |   |   |   |   |   |   |

 $\text{len} = b$   
 $-dibb = 0$

$A \overbrace{B B}^1 B C \Rightarrow \text{Count of } A = 1$  ↑ dibb below  
 $B \overbrace{B B}^1 C \Rightarrow \text{Count of } A = 0$

Now met all char present in window  
because  $dibb = 1$  then increase  
the size of window

→ Repeat the both the steps  
again and again at last  
you find smallest distinct  
window.

## Steps:-

- Count ~~all~~ Unique Character present in String and store in diff. Variable.
- Until difference become 0 take increase the size of window
- When diff become 0 then decrease the size of Window from starting of Window just take diff.  $\rightarrow$  I wa jya jaya.

|                        |
|------------------------|
| diff : $\rightarrow$ 0 |
| diff : $\rightarrow$ 1 |



repeat this steps again and again until ~~you stop~~ iterate over String become step and at last you get the Smallest distinct Window.