7/8/21

Class-3

val = 3 val = (3, 4, 5, 8).

a = [3, 2, 2, 3], val = 3

result = []

for element in a:

    if element != val:

        result.append(element)

time Complexity - O(n)

Space " - O(n)

O(1)

K

[3, 2]

[ ]

# Sorting Complexity → O(n log n) → T.C.

(সবচেয়ে ভালো Sorting complexity)

If arr_size = 8

O(8 log 8) = O(24) operation লাগবে.

বসাও 8 log 2^3 = O(8.3 log 2)

(2)

Shorting करना?

[3,2,2,3], val=3

s e

[3,2,2,3]

| s | e | result |
|---|---|---|
| 0 | 1 | |

s r e

| 3 | 2 | 2 | 3 |
|---|---|---|---|

Result tracking

s e

| 3 | 2 | 2 | 3 | |
|---|---|---|---|---|

```
n=0
i=0
while i<len(a):
    if a[i]!=val:
        a[n]=a[i]
        n+=1
    i+=1
```

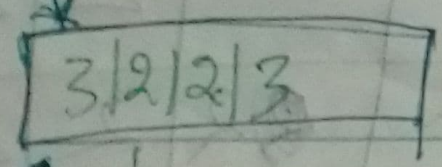
③

| 3 | 2 | 2 | 3 |
|---|---|---|---|
| 0 | 1 | 2 | 3 |

```
r=0
i=0
while i< len(a):
    if a[i] != val:
        a[r] = a[i]
        r+=1
    i+=1
```

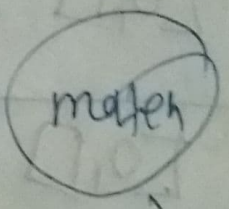
| r | i | a[r] | a[i] | val |
|---|---|---|---|---|
| 0 | 0 | 3 | 3 | 3 |
| 0 | 1 | 3 | 2 | 3 |
| | | | | |

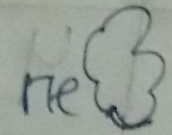
*

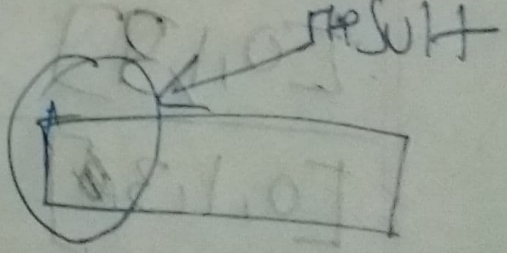


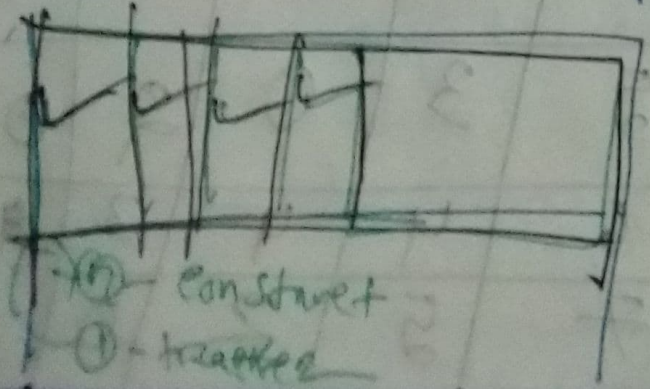



val=3.

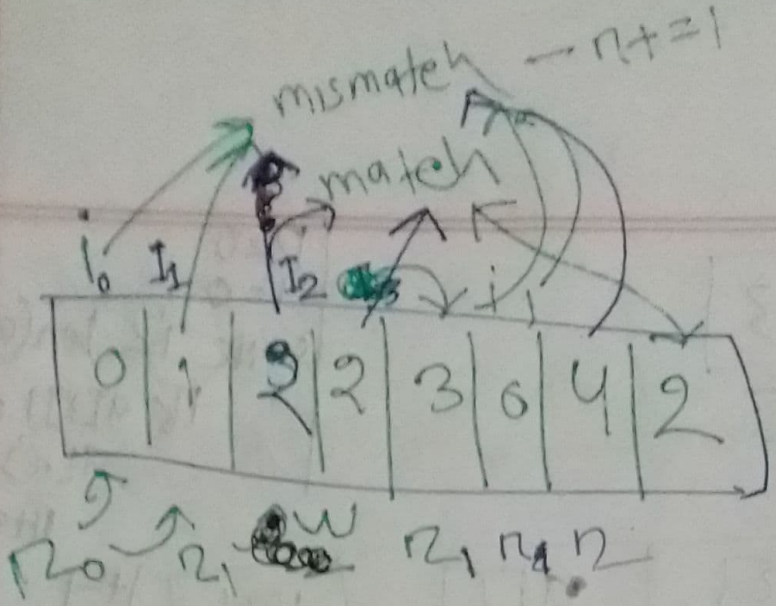


(4)




arr[r] = arr[i]

| 0 | 1 | 2 | 2 | 3 | 0 | 4 | 2 |
|---|---|---|---|---|---|---|---|

| result AR | i | r | arr[i] | arr[r] | val |
|---|---|---|---|---|---|
| [0] | 0 | 0 | 0 | 0 | 2 |
| [0,1] | 1 | 1 | 1 | 1 | 2 |
| [0,1] | R | 2 | 2 | 2 | 2 |
| [0,1] | 3 | 2 | 2 | 2 | 2 |
| [0,1,3] | 4 | 2 | 3 | 2 | 2 |
| [0,1,3] | 5 | 3 | 0 | 2 | 2 |
| [0,1,3,0] | 6 | 4 | 4 | 3 | 2 |
| [0,1,3,0,4] | 7 | 5 | 2 | 0 | 2 |

(9)

(53) Maximum Subarray.

| -2 | 1 | -3 | 4 | -1 | 2 | 1 | -5 | 4 |
|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Contiguos

| -2 | 1 | -3 |
|---|---|---|

$$C(n,r) = \frac{\lfloor n}{\lfloor r \lfloor n-r}$$

$$= \frac{\lfloor 3}{\lfloor 3 \lfloor 1}$$

factorial / combination

Keyword.
→ Subarray
→ Contiguos

* what is contiguos?

1,3 (-2,3) not contiguos →

(3,-2) 11

(6)

| -2 | 1 | 3 | = n

S = 0

[-2, 1, 3] sub array

{-2, 1} ||

{1, 3} ||

{-2, 1, 3} ||

Power set বের করা → $2^n$.

n = 3

| -2 | 1 | 3 | →

{} = 0

{-2} = -2

{1} = 1

{3} = 3

{-2, 1} = -1

{1, 3} = 4

{-2, 1, 3} = 2

← sub array