[9 3 11 -2 1 2]

find a subatilary with maxim length such that it doesn't contain any ree elements.

Ans: (9 3 11)

Edea: Generale all subarrays, and keep track of max length subarray with no -ve

[9 3 11 -2 1 2]

Steads with 9. Steads with 3 steads with 11 Steads with -2 Steads with 1 Steads with 1 Steads with 1 Steads with 1 Steads with -2 Steads with 1 Steads with -2 Steads with 1 Steads with 2 Steads with 1 Steads with 2 Steads with

(9 3 11)

Idea 21 My and is from (1.-r), Both Land r must be on the side of any negative number in the array.

[9 3 11 -2 1 2]

(9)

(9 3)

(9 3 11)

しつ

(1 2)

```
max Positivity (arr, N)
def
                                           -> This will store final Subastay.
1
        1=0, j=0, Stat =0, end =0.
        while (ich db jch)
               if (arr(j) 7,0)
                                                            O(N)
                                                            0(1)
                     j = j + 1
                else
                                                       To make sure we written the first
                   if (11-1) > (erd-stat+1))
                                                       subarray, in case of overlap.
                         erd = j
          retain arr(stat: end)
         the permutation. [All the elements in the away will be from I-N].
   The nos that can be sorted among themselves independent of others
```

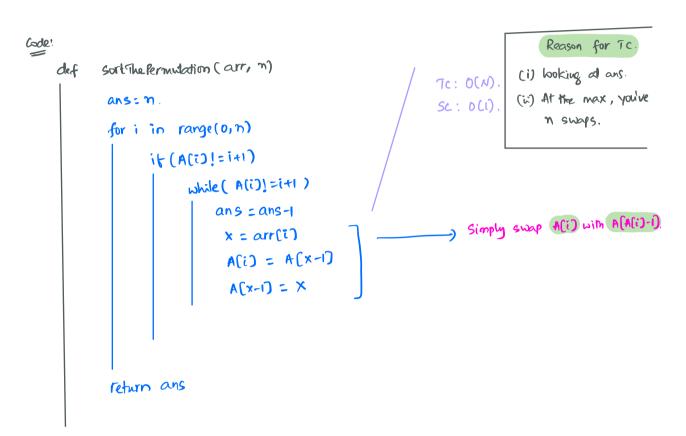
B2: Should be colored the same.

5 groups. (chibbing 441) > 4. (chibbing 345) -) 3.

(dubbing 542) + 2.

Observation: Ideal position for A(i) is (i+1) index, If its not in that position then this leads to a new group.

Idea: Assume that there are 'N' independent groups, and you can decrementing the value of 'N' as you club the nois (swap the nois).



Q3: Bus Dilemma.

B -) max no. of people that his can accommodate.

500 5

2 2 2 3 -3

Possible values for no. of people in the bus initially, in-order for the above data to be valid.

Q: (i) Can we've 0 people in the bus \rightarrow 2,3,0 \checkmark "" " " " " " \rightarrow 3,4,1 \checkmark "" 2 " " " \rightarrow 4,5,2 \checkmark "" 3 " " " \rightarrow 5,6 \checkmark .

(ii) No. of people carit be negative initially, start with 0.

The possible values lies from (0-- B).

Idea: Try checking for every value from [0-8) as shown above,

The running sum you get shouldn't exceed B, and shouldn't be -ve.

Idea 2: Try using prefix sum.

Avr: [2 | -3]

Pf: [2 3 0]., B=5..

Pfmax 4 Pfmin

(i) Rumning sum should it be more than B.

The chosen value must not exceed (0 -> B-Pfmax).

[a b) = b-at1.

It Pfmin <0,

ans = ans-lfmin.

Corners.

(i) It (Pfmin) <B, can there be a sol.? No. retian o.

(i) Ib frmin <0, remove Ifmin elements.

(iii) If Pfmax <0, remove Pfmax elements, =) ans = ans + Pfmax.

$$[-3, -9]$$
 , B= 20.
14 (-3, -10) ans: $[10_{-1}, 20]$.
$$= 11.$$

```
def bus Dilemma (arr, N)

If (rede pf and populate it.

If find Phinan 4 Afmin

Should be been >.

If (-lymin B)

retain 0

ans = B-lymax +1

If (lymin Co)

ans = ans + lymin

if (lymax Co)

ans = ans + lymin

if (lymax Co)

should be been (ans 70? ans: 0) Since ans can be negative.
```