Time Complexities.

- or an as a for of length of the imput.
- It is the time taken by CPU to perform or program.

En: Loop for ormer of Sige no

Space comple pity.

- Amount of spore taken by om also to berform a given in put of some renglit.
 - It is the office taken by the code to

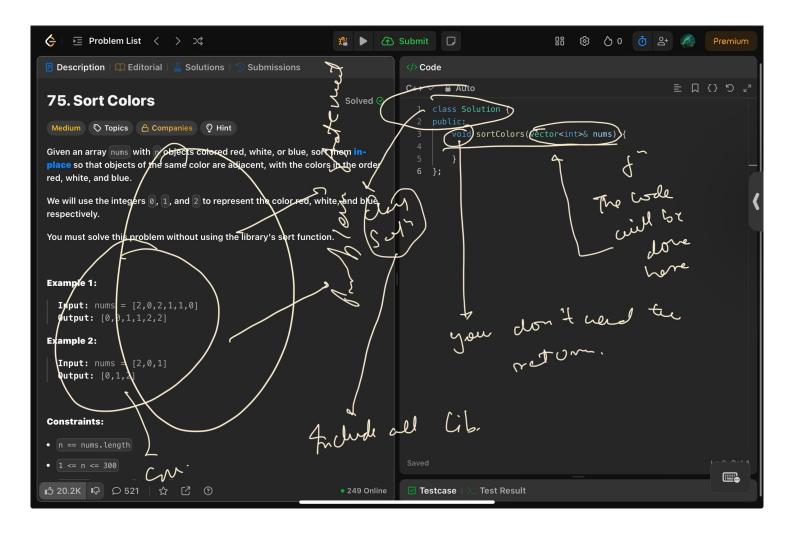
Sn:
$$(int a = 1)$$
 Novidske defined.
 $S.C \rightarrow O(i)$.

Units to represent Complexities.

1. Big O; upper bound

2. Monto O,
Loner Sound
in a Code.
wast case of T. COS.C. But will story.
Different types of (Big O) Complexities.
- Constant Hime: O(1)
linear time: (n) 1 loop.
Logarithmie time: O(logn) merge sort
— Suadretic time: $O(n^2)$ — 2 hop [Nested]. — Oubic time: $O(n^3)$ — 3 hops [nested].
Hierarichy of Complexity;
0(1) < 0(lugn) < 0(sn) < 0(n) < 0(nlogn)
$10(n^2) < O(n^3) < O(2^n) < O(n_b) < O(n^n)$
in the orked by Interviouer.
At you have a program wring O(n) complexity. what are the better aptions left?
left?

Dutch- National flory problem [leet: 75] Sort Colors.



There is a given orney with a objects lobored need - white - Stue. Sort them in place so that object of Some Color blowd odject, The order of Color should be R-W-B.

ρ 1 0 ω 1 1 β → 2.

Approach

i, left-9 mijht.

use while loop (¿ L= might).

g cese & fump(i, night). i++; night---;