

LeetCode

Explore

Problems

Interview

Contest

Discuss

Store

LeetCode is hiring! Apply NOW.

0

Description

Solution

Discuss (157)

Submissions

i

Java

Autocomplete

i

{ }

↺

↻

⌕

2424. Longest Uploaded Prefix

Medium

71

10

Add to List

Share

You are given a stream of  $n$  videos, each represented by a **distinct** number from  $1$  to  $n$  that you need to "upload" to a server. You need to implement a data structure that calculates the length of the **longest uploaded prefix** at various points in the upload process.

We consider  $i$  to be an uploaded prefix if all videos in the range  $1$  to  $i$  (**inclusive**) have been uploaded to the server. The longest uploaded prefix is the **maximum** value of  $i$  that satisfies this definition.

Implement the `LUPrefix` class:

- `LUPrefix(int n)` Initializes the object for a stream of  $n$  videos.
- `void upload(int video)` Uploads `video` to the server.
- `int longest()` Returns the length of the **longest uploaded prefix** defined above.

**Example 1:**

Input

["LUPrefix", "upload", "longest", "upload", "longest", "upload", "longest"]

[[4], [3], [], [1], [], [2], []]

Output

[null, null, 0, null, 1, null, 3]

**Explanation**

```
LUPrefix server = new LUPrefix(4); // Initialize a stream of 4 videos.
server.upload(3);                  // Upload video 3.
server.longest();                  // Since video 1 has not been
// uploaded yet, there is no prefix.
// So, we return 0.
server.upload(1);                  // Upload video 1.
server.longest();                  // The prefix [1] is the
// longest uploaded prefix, so we return 1.
server.upload(2);                  // Upload video 2.
server.longest();                  // The prefix [1,2,3] is the
// longest uploaded prefix, so we return 3.
```

**Constraints:**

- $1 \leq n \leq 10^5$
- $1 \leq \text{video} \leq 10^5$
- All values of `video` are **distinct**.
- At most  $2 * 10^5$  calls **in total** will be made to `upload` and `longest`.
- At least one call will be made to `longest`.

Accepted 7,865      Submissions 15,815

Seen this question in a real interview before? 

Yes

No

Similar Questions

Show Hint 1

```
1 class LUPrefix {
2
3     public LUPrefix(int n) {
4
5     }
6
7     public void upload(int video) {
8
9     }
10
11    public int longest() {
12
13    }
14 }
15
16 /**
17  * Your LUPrefix object will be instantiated and called as such:
18  * LUPrefix obj = new LUPrefix(n);
19  * obj.upload(video);
20  * int param_2 = obj.longest();
21  */
```