Binary Search Playlist

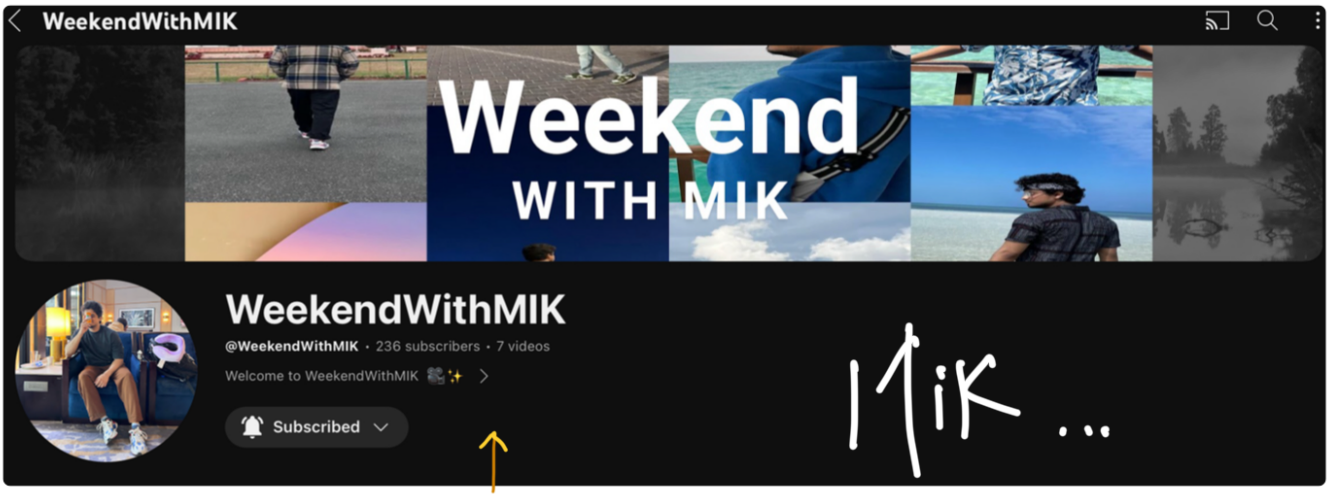
Video - 41

Leetcode - 2071
Hard

codestorywithmik

CswithMIK

codestorywithMIK



MIK ...

Try this channel to know:-
ee "Life behind the Screen + tech news"

Motivation :-

If you REALLY want something in your life, you will do every possible thing to get it.

Otherwise, you will keep finding excuses.

Ask yourself — AM I HONESTLY DOING EVERYTHING POSSIBLE ???

MIK...

2071. Maximum Number of Tasks You Can Assign

Hard | Topics | Companies | Hint

You have `n` tasks and `m` workers. Each task has a strength requirement stored in a **0-indexed** integer array `tasks`, with the `i`th task requiring `tasks[i]` strength to complete. The strength of each worker is stored in a **0-indexed** integer array `workers`, with the `j`th worker having `workers[j]` strength. Each worker can only be assigned to a **single** task and must have a strength **greater than or equal** to the task's strength requirement (i.e., `workers[j] >= tasks[i]`).

Additionally, you have `pills` magical pills that will **increase a worker's strength** by `strength`. You can decide which workers receive the magical pills, however, you may only give each worker **at most one** magical pill.

Given the **0-indexed** integer arrays `tasks` and `workers` and the integers `pills` and `strength`, return *the **maximum** number of tasks that can be completed.*

Example :- tasks = [3, 2, 1]

workers = [~~0~~ 1, 3, 3]

pills = 1

strength = 1

Output :- 3

Thought Process

tasks = {5, 5, 8, 9, 9}

workers = {6, 6, 4, 2, 1}

pills = 1

strength = 5

task cou = 1

tac. = 3

easiest tasks = { 5, 5, 8, 9, 9 }

weakest workers = { 1, 2, 4, 6, 6 }

+5
= 9

Works :)

easiest tasks = { 5, 5, 8, 9, 9 }

strongest workers = { 6, 6, 4, 2, 1 }

+5
= 9

tasks = [3, 2, 1]

workers = [0, 3, 3]

pills = 1

strength = 1

easiest tasks = { 1, 2, 3 }

strongest work = { 3, 3, 0 }

+1

tasks = 2

tasks = 3

easiest task को Descending. ???

tasks = [5, 9, 8, 5, 9]

workers = [1, 6, 4, 2, 6]

Pills = 1

strength = 5

task = 1

Strongest tasks = { 9, 9, 8, 5, 5 }

Strongest workers = { 6, 6, 4, 2, 1 }

+5

weakest tasks (asc) = [5, 5, 8, 9, 9]

Strongest workers (Descn) = [6, 6, 4, 2, 1]

Pills = 1

strength = 5

l = 0 r = 5

mid = (l+r)/2

= (0+5)/2

= 2

Binary Search on answer

[illegible] tasks → ascending

Weakest tasks → Ascending order

Strongest Workers → Descending order.

weakest tasks = [5, 5, 8, 9, 9]

Strongest workers = [6, 6, 4, 2, 1]

Pills = 1

strength = 5

i

{ 5, 5, 8 }

multiset { 6, }

8 → required

5 → strength

l = 4 r = 3

mid = (3+1)/2 = 3

lower_bound (3)

result = 3

Sum Points:-

1. Easiest task → ascen.
2. worker desen. → multiset

3 mid tasks

1 strongest workers → str tuple

↳ if not → lower_bound ( )

multiset

↳ lu :