Problem 3175: Find The First Player to win K Games in a Row

Problem Information

Difficulty: Medium
Acceptance Rate: 39.88%
Paid Only: No
Tags: Array, Simulation

Problem Description

A competition consists of `n` players numbered from `0` to `n - 1`.

You are given an integer array `skills` of size `n` and a **positive** integer `k`, where `skills[i]` is the skill level of player `i`. All integers in `skills` are **unique**.

All players are standing in a queue in order from player `0` to player `n - 1`.

The competition process is as follows:

* The first two players in the queue play a game, and the player with the **higher** skill level wins. * After the game, the winner stays at the beginning of the queue, and the loser goes to the end of it.

The winner of the competition is the **first** player who wins `k` games **in a row**.

Return the initial index of the _winning_ player.

Example 1:

Input: skills = [4,2,6,3,9], k = 2

Output: 2

Explanation:

Initially, the queue of players is `[0,1,2,3,4]`. The following process happens:

* Players 0 and 1 play a game, since the skill of player 0 is higher than that of player 1, player 0 wins. The resulting queue is `[0,2,3,4,1]`. * Players 0 and 2 play a game, since the skill of player 2 is higher than that of player 0, player 2 wins. The resulting queue is `[2,3,4,1,0]`. * Players 2 and 3 play a game, since the skill of player 2 is higher than that of player 3, player 2 wins. The resulting queue is `[2,4,1,0,3]`.

Player 2 won `k = 2` games in a row, so the winner is player 2.

Example 2:

Input: skills = [2,5,4], k = 3

Output: 1

Explanation:

Initially, the queue of players is `[0,1,2]`. The following process happens:

* Players 0 and 1 play a game, since the skill of player 1 is higher than that of player 0, player 1 wins. The resulting queue is `[1,2,0]`. * Players 1 and 2 play a game, since the skill of player 1 is higher than that of player 2, player 1 wins. The resulting queue is `[1,0,2]`. * Players 1 and 0 play a game, since the skill of player 1 is higher than that of player 0, player 1 wins. The resulting queue is `[1,2,0]`.

Player 1 won `k = 3` games in a row, so the winner is player 1.

Constraints:

* `n == skills.length` * `2 <= n <= 105` * `1 <= k <= 109` * `1 <= skills[i] <= 106` * All integers in `skills` are unique.

Code Snippets

C++:

```cpp
class Solution {
public:
int findWinningPlayer(vector<int>& skills, int k) {


}
};
```

Java:

```java
class Solution {
public int findWinningPlayer(int[] skills, int k) {


}
}
```

Python3:

```python
class Solution:
def findWinningPlayer(self, skills: List[int], k: int) -> int:
```