Bob Sledding

Can you help Bob get the best possible sledding experience?

In this exercise you are given an array of values that represent the different heights of a snow-covered hill. Bob's sled is old and torn, so he can only go between two values if there is a downwards slope. He cannot go between two values horizontally, nor uphill. The array always start and end with a zero, representing the ground. The rest of the values are positive integers. Array index start from 0.

Make sure to read this entire description carefully before attempting the tasks.

Sub-Task 1: The farthest distance (4 points)

Your first task is to find the farthest distance Bob can travel sideways from a given starting point in the array.

Example:

Given the array [0,2,2,4,5,1,0] and the starting point 3, Bob can travel at most 1 step by going 4 -> 2. In the next step he cannot go 2 -> 2 because he can only go downhill.

Sub-Task 2: The optimal starting point (6 points)

Your second task is to find the best starting point for Bob if he wants to go as far as possible sideways on his sled. If there are more than one starting point with the same optimal distance, return the one with the lowest index.
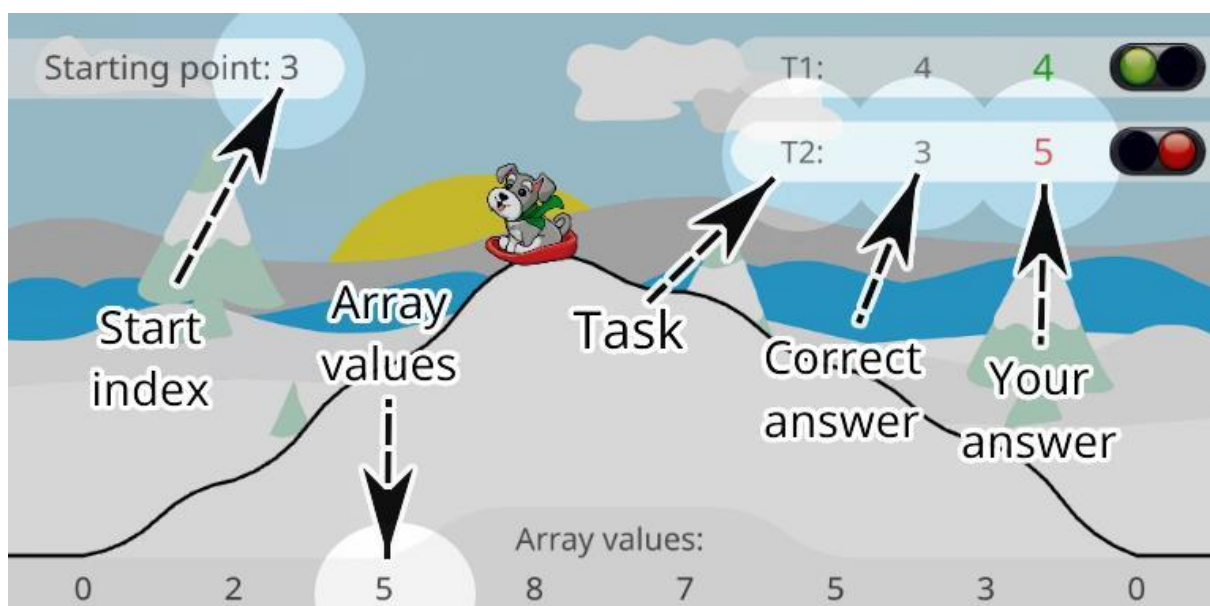
Example:

Given the array [0,4,8,6,4,2,0], the optimal starting point is index 2 from which Bob can travel 4 steps sideways.

Running the code:

There are four public test cases which are automatically run when you press the "Run code" button. You can see a visualization of each case by selecting the tabs marked Level 1 - 4 below.

Layout explanation:

Scoring

Focus on getting the correct output, as this is the major part of your score. You can see your points for each level in the bottom left of the screen when you press 'Run code'. **Note that your code will be assessed using other test cases than the levels you see below, so please consider how your code would work for these unknown test cases.**

A minor part of your score is calculated through time-complexity analysis of your solution, so if you have time try to consider how to make your solution as fast as possible.

A tip to get started is to press "Run code" to see what happens.

Constraints:

- 0 <= hill height <= 1000000
- 2 <= number of values <= 25000
- values[0] = 0
- values[n-1] = 0