Problem statement

Link:
https://www.naukri.com/code360/problems/frog-jump_3621012?source=youtube&campaign=striver_dp_videos&utm_source=youtube&utm_medium=affiliate&utm_campaign=striver_dp_videos&leftPanelTabValue=PROBLEM

There is a frog on the '1st' step of an 'N' stairs long staircase. The frog wants to reach the 'Nth' stair. 'HEIGHT[i]' is the height of the '(i+1)th' stair.If Frog jumps from 'ith' to 'jth' stair, the energy lost in the jump is given by absolute value of (HEIGHT[i-1] - HEIGHT[j-1]). If the Frog is on 'ith' staircase, he can jump either to '(i+1)th' stair or to '(i+2)th' stair. Your task is to find the minimum total energy used by the frog to reach from '1st' stair to 'Nth' stair.

For Example
If the given ‘HEIGHT’ array is [10,20,30,10], the answer 20 as the frog can jump from 1st stair to 2nd stair (|20-10| = 10 energy lost) and then a jump from 2nd stair to last stair (|10-20| = 10 energy lost). So, the total energy lost is 20.
Detailed explanation (Input/output format, Notes, Images)
Constraints:
1 <= T <= 10
1 <= N <= 100000.
1 <= HEIGHTS[i] <= 1000 .

Time limit: 1 sec

Sample Input 1:
2
4
10 20 30 10
3
10 50 10
Sample Output 1:
20
0
Explanation of sample input 1:
For the first test case,
The frog can jump from 1st stair to 2nd stair (|20-10| = 10 energy lost).
Then a jump from the 2nd stair to the last stair (|10-20| = 10 energy lost).
So, the total energy lost is 20 which is the minimum.
Hence, the answer is 20.

For the second test case:
The frog can jump from 1st stair to 3rd stair (|10-10| = 0 energy lost).
So, the total energy lost is 0 which is the minimum.
Hence, the answer is 0.
Sample Input 2:
2
8
7 4 4 2 6 6 3 4
6
4 8 3 10 4 4
Sample Output 2:
7
2

Hints:
1. Think about all the possibilities at each stair.
2. Using recursion, try to divide the problem into subproblems and calculate the answer for each subproblem only once - store it for reusing in the future.
3. The above can also be done iteratively.