Turn Off the Lights

by coolbun

Problem Submissions Leaderboard Discussions Editorial

There are n bulbs in a straight line, numbered from 0 to $n-1$. Each bulb i has a button associated with it, and there is a *cost*, c_i, for pressing this button. When some button i is pressed, all the bulbs at a distance $\leq k$ from bulb i will be toggled(off->on, on->off).

Given n, k, and the costs for each button, find and print the minimum cost of turning off all n bulbs if they're all on initially.

Input Format

The first line contains two space-separated integers describing the respective values of n and k.
The second line contains n space-separated integers describing the respective costs of each bulb (i.e., $c_0, c_1, \ldots, c_{n-1}$).

Constraints

- $3 \leq n \leq 10^4$
- $0 \leq k \leq 1000$
- $0 \leq c_i \leq 10^9$

Output Format

Print a long integer denoting the minimum cost of turning off all n bulbs.

Sample Input

```
3 1
1 1 1
```

Sample Output

```
1
```

Explanation

If we press the middle switch, the middle bulb and the $k=1$ closest adjacent bulbs (i.e., the first and third) will turn off. Because all bulbs will be off in one button press, this cost is minimal. Thus, we print 1 as our answer.

Submissions:159

Max Score:70
Difficulty: Hard

Rate This Challenge:

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Current Buffer (saved locally, editable) Java 7

```
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code