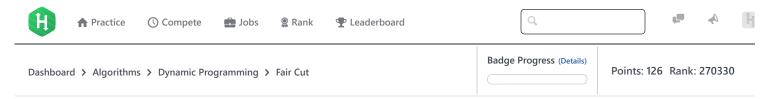
16/11/2017 HackerRank



# Fair Cut



Problem Submissions Leaderboard Discussions Editorial	
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Li and Lu have n integers,  $a_1, a_2, \ldots, a_n$ , that they want to divide fairly between the two of them. They decide that if Li gets integers with indices  $I = \{i_1, i_2, \ldots, i_k\}$  (which implies that Lu gets integers with indices  $J = \{1, \ldots, n\} \setminus I$ ), then the measure of unfairness of this division is:

$$f(I) = \sum_{i \in I} \sum_{j \in J} |a_i - a_j|$$

Find the minimum measure of unfairness that can be obtained with some division of the set of integers where Li gets exactly k integers.

**Note**  $A \setminus B$  means Set complement

## **Input Format**

The first line contains two space-separated integers denoting the respective values of n (the number of integers Li and Lu have) and k (the number of integers Li wants).

The second line contains n space-separated integers describing the respective values of  $a_1, a_2, \ldots, a_n$ .

## **Constraints**

- $1 \le k < n \le 3000$
- $1 \le a_i \le 10^9$
- For 15% of the test cases,  $n \leq 20$ .
- For 45% of the test cases,  $n \leq 40$ .

## **Output Format**

Print a single integer denoting the minimum measure of unfairness of some division where Li gets  $m{k}$  integers.

## Sample Input 0

4 2 4 3 1 2

## Sample Output 0

6

# **Explanation 0**

One possible solution for this input is  $I=\{2,4\};\ J=\{1,3\}.\ |a_2-a_1|+|a_2-a_3|+|a_4-a_1|+|a_4-a_3|=1+2+2+1=6$ 

## Sample Input 1

4 1 3 3 3 1 16/11/2017 HackerRank

## **Sample Output 1**

2

## **Explanation 1**

The following division of numbers is optimal for this input:  $I = \{1\}$ ;  $J = \{2, 3, 4\}$ .

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Submissions: 1023
                                                                                                                   Max Score:40
                                                                                                                   Difficulty: Medium
                                                                                                                   Rate This Challenge:
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                                                                                                     Java 7
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 1 ▼ import java.io.*;
 2 import java.util.*;
 3
    import java.text.*;
 4
     import java.math.*;
    import java.util.regex.*;
 5
 6
 7 ▼ public class Solution {
         public static void main(String args[] ) throws Exception {
 8 ▼
 9 ▼
              /* Enter your code here. Read input from STDIN. Print output to STDOUT */
10
11
     }
12
                                                                                                                                 Line: 1 Col: 1
                                                                                                                   Run Code
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1 Upload Code as File
                        Test against custom input
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