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LIVE EVENTS

Monk and Modulo Based Sorting

Attempted by: 5598 / Accuracy: 81% / Maximum Score: 20 / ★★★★★☆ 88 Votes

Tag(s): Algorithms, Easy, Merge sort, Sorting

PROBLEM

EDITORIAL

MY SUBMISSIONS

Monk likes to experiment with algorithms. His one such experiment is using modulo in sorting. He describes an array modulo sorted as:

Given an integer k , we need to sort the values in the array according to their modulo with k . That is, if there are two integers a and b , and $a \% k < b \% k$, then a would come before b in the sorted array. If $a \% k = b \% k$, then the integer which comes first in the given array remains first in the sorted array.

Given an initial array, you need to print modulo sorted array.

Input:

The first line consists of two integers N and k , N being the number of elements in the array and k is the number with which we need to take the modulo.

The next line consists of N space separated integers, denoting the elements of the array A .

Output:

Print the modulo sorted array of the given array.

Constraints:

$$1 \leq N \leq 10^4$$

$$1 \leq k \leq 10^9$$

$$1 \leq A[i] \leq 10^9; 1 \leq i \leq N$$

SAMPLE INPUT



```
5 6
12 18 17 65 46
```

SAMPLE OUTPUT



```
12 18 46 17 65
```

Explanation

$$12 \% 6 = 0$$

$$18 \% 6 = 0$$

$$17 \% 6 = 5$$

$$65 \% 6 = 5$$

$$46 \% 6 = 4$$

So, the sorted order is: 12 18 46 17 65

12 and 18 have same result on modulo, so, 12 remains first in sorted array as it is first in given array

?

Time Limit:	1.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Marks are awarded when all the testcases pass.
Allowed Languages:	Bash, C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Swift, Swift-4.1, TypeScript, Visual Basic

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CODE EDITOR

Enter your code or [Upload your code](#) as file.

Save

C++14 (g++ 5.4.0)



```
3 using namespace std;
4
5 int main(){
6     int n,k;
7     cin>>n>>k;
8     int arr[n];
9     for(int i=0;i<n;i++){
10         cin>>arr[i];
11     }
12
13     for(int i=0;i<n;i++){
14         for(int j=0;j<n-i-1;j++){
15             if(arr[j]%k > arr[j+1]%k){
16                 int temp = arr[j];
17                 arr[j] = arr[j+1];
18                 arr[j+1] = temp;
19             }
20         }
21     }
22
23     for(int i=0;i<n;i++){
24         cout<<arr[i]<<" ";
25     }
26     cout<<endl;
27     return 0;
28 }
```

28:1 vscode

☒ Provide custom input

COMPILE & TEST

SUBMIT

Submission ID: 40266621 / 2 seconds ago

RESULT: Accepted

?

Score	Time (sec)	Memory (KiB)	Language
20.0	1.92214	408	C++14

Input	Result	Time (sec)	Memory (KiB)	Score	Your Output	Correct Output	Diff
Input #1	✔	0.101772	64	10			
Input #2	✔	0.101645	64	10			
Input #3	✔	0.102164	64	10			
Input #4	✔	0.102023	64	10			
Input #5	✔	0.102203	64	10			
Input #6	✔	0.102522	64	10			
Input #7	✔	0.101877	64	10			
Input #8	✔	0.402389	408	10			
Input #9	✔	0.402731	408	10			
Input #10	✔	0.402815	408	10			

Compilation Log
Compilation Successful.

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Your Rating:

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Criminals: Little Deepu An...

Attempted By: 3250 / Accuracy: 52

★★★★☆ 16 Votes

Chandu And His Girlfriend

Attempted By: 8712 / Accuracy: 86

★★★★☆ 227 Votes

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