#include<iostream>

using namespace std;

// A function implementing Counter sort.

void CounterSort(int a[], int n, int r, int lower)

{

int i, j = 0, counter[r] = {0};

// Counting the number occurrence of each element.

for(i=0; i<n; i++)

counter[a[i]-lower]++;

i=0;

// placing the elements back into array.

while(i < r)

{

flag:

a[j] = lower+i;

j++;

counter[i]--;

// place the same element until its counter is zero.

if(counter[i] > 0)

goto flag;

i++;

}

}

int main()

{

int n, i, range, ulimit, llimit;

cout<<"**\n**Enter the number of data element to be sorted: ";

cin>>n;

cout<<"**\n**Enter the lower and upper limit of the data to be entered: ";

cin>>llimit>>ulimit;

// Range of the input data.

range = ulimit-llimit+1;

int arr[n];

for(i = 0; i < n; i++)

{

cout<<"Enter element "<<i+1<<": ";

cin>>arr[i];

}

CounterSort(arr, n, range, llimit);

// Printing the sorted data.

cout<<"**\n**Sorted Data ";

for (i = 0; i < n; i++)

cout<<"->"<<arr[i];

return 0;

}