

1. Given an array of integers, determine the minimum number of elements to delete to leave only elements of equal value.

Sample Input

5
3 1 3 2 3

Sample Output

2

2. Given an array, the distance between two array values is the number of indices between them. Find the minimum distance between any pair of **equal elements** in the array. If no such value exists, return -1.

Sample Input 1

6
7 1 3 4 1 7

Sample Output 1

3

Sample Input 2

5
1 2 3 4 10

Sample Output 2

-1

3. There is a string S , of lowercase English letters that is repeated infinitely many times. Given an integer N , find and print the number of letter a 's in the first N letters of the infinite string.

Note: You should solve this without using any extra memory

Constraints

$1 \leq \text{Length of the String, } S \leq 100$

$1 \leq N \leq 10^{12}$

Sample Input 1

aba abaabaabaaba

10

Sample Output 1

7

Sample Input 2

abcac

10

Sample Output 2

4

4. There is an array of random integers. This array is passed to a class to which you have no access to. The class has a method **ConstructBST** which takes the array as input and constructs a BST and stores it inside the class object.

Remember, you do not have access to the constructed tree as well. All you have is the array which was initially passed to the class.

Using this array, you have to print the **in-order traversal** of the constructed binary search tree.

Note: *Print the in-order traversal of the BST without constructing the BST*

5. A string **S** said to be "Beautiful" if the following criteria is satisfied

- Take the string S and take its reverse.
- Take the absolute difference of ASCII values of adjacent characters in both the strings.
- If this list of absolute differences is the same for both the original string and its reverse.

Note: *You should solve this without using any extra memory*

Example

S = "lmnop"

The ASCII values of the characters of the original string are [108, 109, 110, 111, 112] and the ASCII values of the reversed string is [112, 111, 110, 109, 108]. The absolute differences of the adjacent elements for both strings are [1,1,1,1], so the string is **Beautiful**.

Sample Input 1

acxz

2 2 0 2

2 2 0 2

Sample Output 1

YES

Sample Input 2

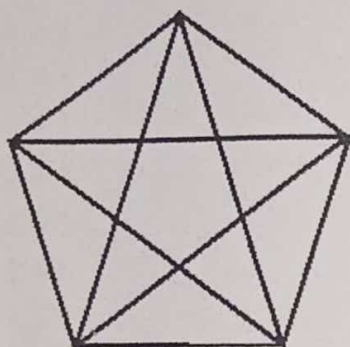
ivvkv

Sample Output 2

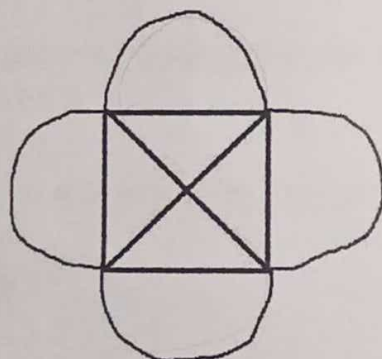
NO

6. Given a graph, you have to find if the graph can be drawn without taking the hands away. Assume that you are going to draw the given graph on a paper and you have to find whether you can draw it at a single stroke, i.e, without taking the hands away. And also, you are allowed to draw the graph only once. That is, you can't draw a single edge more than once. The given graph will have N nodes, numbered from 1 to N .

Consider the following graphs. For input clarity of the graphs in the images, refer to the sample input section



Graph 1



Graph 2

In the above 2 graphs, the 1st graph can be drawn in a single stroke without taking the hands away while the 2nd graph can't be.

So, your task is, given a graph, determine whether it can be drawn in a single stroke or not. If not, print "NO". If it can be, print "YES" and also print the node from which the graph should be started drawing. Refer Sample Input and Output for more clarity.

Input Format

In the above input, the first integer denotes the number of nodes, N . The integer in the next line represents the number of edges, Q . Then Q lines follow that, each line representing an edge.

Sample Input (For Graph1)

```
5
10
1 2 1
1 3 1
1 4 1
1 5 1
2 3 1
2 4 1
2 5 1
3 4 1
3 5 1
4 5 1
```

Sample Output (For Graph1)

```
YES 1
```

Sample Input (For Graph2)

```
4
6
1 2 2
1 3 1
1 4 2
2 3 2
2 4 1
3 4 2
```

Sample Output (For Graph2)

```
NO
```