

PDS 2710: Lab Assignment #5

Due on Friday, September 16, 2016

Problem 1

Parenthesis Checker

Given an string expression, examine whether the pairs and the orders of $\{\}, (,), [,]$ are correct in exp. For example, the program should print '1' for exp = $[()]\{\}\{[(())]()\}$ and '0' for exp = $[()]$

Input

The first line of input contains an integer T denoting the number of test cases. Each test case consist of a string of expression, in a separate line.

output

Print '1' without quotes if pair of parenthesis are balanced else print '0' in a separate line.

constraint

$$1 \leq |S| \leq 1000$$

Example

Input

$$\begin{array}{l} 3 \\ \{(\sqcup)\} \\ () \\ ()\sqcup \end{array}$$

output

$$\begin{matrix} 0 \\ 1 \\ 1 \end{matrix}$$

Problem 2

Count the reversal

Given a string **S** consisting only of opening and closing curly brackets "{", "}".find out the minimum number of reversals required to make a balanced expression.

Input

The first line of input contains an integer **T** denoting the number of test cases. Then **T** test cases follow. The first line of each test case contains a string **S** consisting only of { and }.

output

Print out minimum reversals required to make **S** balanced. If it cannot be balanced, then print -1.

constraint

$$1 \leq |S| \leq 1000$$

Example**Input**

```
4
}{ }{{{
{ } } }
{ } { } { } { } { }
{ { } } }
```

output

```
3
1
-1
0
```

Problem 3**Next larger element**

Given an array **A** [] having distinct elements, the task is to find the next greater element for each element of the array in order of their appearance in the array. If no such element exists, output -1

Input

The first line of input contains a single integer **T** denoting the number of test cases. Then **T** test cases follow. Each test case consists of two lines. The first line contains an integer **N** denoting the **size** of the array. The Second line of each test case contains **N** space separated **positive integers** denoting the values/elements in the array **A** [].

output

For each test case, print in a new line, the next greater element for each array element separated by space in order.

constraint

$$1 \leq |S| \leq 10000$$

Example**Input**

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

output

```
3 4 4 -1
```

Explanation

In the array, the next larger element to 1 is 3 , 3 is 4 , 2 is 4 and for 4 ? since it doesn't exist hence -1.