Institute of Information Technology, University of Dhaka

BSSE 9th Batch (January 2018) # CSE301: Combinatorial Optimization

Lab Assignment 2 (Stack) # Marks 20 # Deadline January 18, 2016

Name: **Roll:**

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1. You are given a string consisting of parentheses () and []. A string of this type is said to be correct: 10

(a) if it is the empty string
(b) if A and B are correct, AB is correct,
(c) if A is correct, (A) and [A] is correct.

Write a program that takes a sequence of strings of this type and check their correctness. Your program can assume that the maximum string length is 128.

Input
The file contains a positive integer n and a sequence of n strings of parentheses () and [], one string a line.

Output
A sequence of Yes or No on the output file.

Sample Input

```
3
([])
(([()])))
([()[]()])()
```

Sample Output

```
Yes
No
Yes
```

2. The teacher asked you to Write a program that convert an infix expression to a postfix expression. Like you know, the terms in and pos are according with the operators position. The program will have to handle only with the binary operators +, -, *, /, ^. parenthesis, letters and numbers. An example would be an expression like: 10

(A*B+2*C^3)/2*A. The program must convert this expression (infix) to the posfix expression: AB*2C3^*+2/A*
All expressions of the test cases are expressions with valid syntax.
Input

The first line of input is an integer N (N < 1000), that indicates the total number of test cases. Each case is a valid expression in the infix format.
Output

For each test case, print the expression converted to posfix expression.

Sample Input	Sample Output
3 A*2 (A*2+c-d)/2 (2*4/a^b)/(2*c)	A2* A2*c+d-2/ 24*ab^/2c*/

*Please bring this page on the day of viva on this assignment. Submission Instructions will be given in the class.