

| Sl. No  | Problem Statement  |   |  |  |   |
|---|--|---|--|--|---|
| 1   | <p><b>Assignment 6 ( 28 Feb 2024)</b></p> <p><b>Write Lex and Yacc program for the following : ( Question 1 - 5 marks, Question 2 - 5 marks )</b></p> <p>John is a newbie programmer. He has a string which is an arithmetic expression, he is struggling to find the result of this string by creating a <b>YACC</b> program. He also wants to know whether arithmetic expression is valid or not. John needs your help to write the <b>YACC</b> program.</p> <p><b>Input format</b></p> <p>The first line contains string S.</p> <p><b>Output format</b></p> <p>The first line contains, string S is valid or Invalid.</p> <p>The second line indicates the result.</p> <table> <tr> <td> <p><u><b>Sample Input</b></u></p> <p><math>(( 7 * 2 - 12 * 1 + 2) / 7) \% 3</math></p> <p><u><b>Sample output</b></u></p> <p>Valid</p> <p>3</p> </td><td> <p><u><b>Sample Input</b></u></p> <p><math>(2 * 4) + (4 / 5) + 5 - 2 - 1 * 7 \%</math></p> <p><u><b>Sample output</b></u></p> <p>Invalid</p> </td></tr> <tr> <td> <p><u><b>Sample Input</b></u></p> <p><math>(5 \wedge 12 * 4 / 2486 + ( 578 - 124) / 4))</math></p> <p><u><b>Sample output</b></u></p> <p>?</p> </td><td> <p><u><b>Sample Input</b></u></p> <p><math>4 * 3.142 * r * r</math></p> <p><u><b>Sample output</b></u></p> <p>?</p> </td></tr> </table> | <p><u><b>Sample Input</b></u></p> <p><math>(( 7 * 2 - 12 * 1 + 2) / 7) \% 3</math></p> <p><u><b>Sample output</b></u></p> <p>Valid</p> <p>3</p> | <p><u><b>Sample Input</b></u></p> <p><math>(2 * 4) + (4 / 5) + 5 - 2 - 1 * 7 \%</math></p> <p><u><b>Sample output</b></u></p> <p>Invalid</p> | <p><u><b>Sample Input</b></u></p> <p><math>(5 \wedge 12 * 4 / 2486 + ( 578 - 124) / 4))</math></p> <p><u><b>Sample output</b></u></p> <p>?</p> | <p><u><b>Sample Input</b></u></p> <p><math>4 * 3.142 * r * r</math></p> <p><u><b>Sample output</b></u></p> <p>?</p> |
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2

Zayan is throwing a birthday party. Seeing the extravagant parties thrown by her friends like Varaa and Arik in the past, Zayan too decided to do something unique. Being a Computer Engineer himself, he knew just how to do it. He sent a password-protected e-invites(string) to his friends. Now their task is to convert the given string which is an infix expression to a postfix expression and to find the result of that string. Underscore separated postfix expression and result which would be the password for that invite. Help Zayan friends in finding the password so that they can enjoy the birthday party!

**Input format**

The first line contains string S.

**Output format**

The first line contains a postfix expression

The second line indicates the result.

The third line indicates the password.

**Constraints**

$1 \leq \text{string length} \leq 1000$

| <u>Sample Input</u>   | <u>Sample Input</u>                 | <u>Sample Input</u>                          |
|-----------------------|-------------------------------------|--|
| 8 - 15 / (5 * 3) + 10 | (( (7 % 2) - 12 / 12 * 8) + 3) % 20 | (55 ^ 12 ) * (4 / 2486) + ( 578 - 124) % 351 |
| <u>Sample output</u>  | <u>Sample output</u>                | <u>Sample output</u>                         |
| 8 15 5 3 * / - 10 +   | 7 2 % 12 12 / 8 * - 3 + 20 %        | ?  |
| 17                    | ?                                   | ?  |
| 81553*/-10+_17        | ?                                   | ?  |