

# Evaluating Expressions with parentheses

## Lab Assignment 2

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### Problem Statement

Extend the program of assignment 1 to accept expressions with parentheses. Allow parentheses to be nested. There is still no operator precedence and evaluation is from left to right

### Explanation

We have translated the C program written in annexure 1 in the Lab Assignment 2 file. We used stack to save the link registers. Everytime we went into a function we pushed a link register value into the stack and every time we exited one we popped one. Since the expTail function required us to save the previous values of the register we pushed it into the stack as well and once the subsequent layer of recursion was done we popped out the value of the expression evaluated thus far and the link registers were popped out without any problem after that.

Assumptions:

Since the C program in annexure 1 cannot handle invalid input we haven't made any provisions in our assembly program to handle invalid input either.

Sample Input:

Input:  $31+(21*(2*(52-(25*2))-3))$     Output: 52

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