Data Structures & Algorithms

BPDC

(Lab - 08)

Question

1. Given an arithmetic expression in postfix form, write a program to implement the expression tree for the same (*recall that expression tree is a binary tree whose root is the operator and left and right children are roots of expression trees of respective subexpressions, assuming binary operators*). Your program may read a postfix expression as a string where the operands are symbols A to Z and operators are one among $+, -, *, /$, and $\hat{}$.

```
function ConstructExpnTree(S) //Assuming expression to be on a stack S with the last symbol on top and the first at bottom, returns root of tree
    if S.empty() then
        return Null
    end if
    x ← S.pop()
    t ← Create(x)
    if x is operator then
        t.right ←ConstructExpnTree(S)
        t.left ←ConstructExpnTree(S)
    end if
    return t
end function
```