

Algorithm to construct an expression tree from a given postfix expression:

1. Create a Stack.
2. Read the given postfix one symbol at a time, and repeat Steps 3 to 4.
3. If the symbol is an operand, then
 - Create a single node expression tree with the operand.
 - Push the root pointer of the generated tree into the stack.
4. If the symbol is an operator, then
 - Pop out pointers to the two trees (T1(first popped out) and T2) from the stack.
 - Create a new tree with the operator as the root and whose left-child and right-child point to trees T2 and T1, respectively.
 - Push the root pointer of this new tree back into the stack.
5. The stack will contain a single tree; return it as the final expression tree.

Algorithm to compute value of an expression from the expression tree

Let ROOT be a pointer to the expression tree node.

1. If ROOT is not NULL, then
 - If symbol at ROOT is operand, then
 - Return the operand.
2. Else // Symbol at ROOT is operator.
 - Recursively compute the value of ROOT.left, operand1
 - Recursively compute the value of ROOT.right, operand2
3. Apply the operator at ROOT to the values stored in operand1 and operand2
4. Return the result obtained in Step 3.