Postfix expression	stack	op_stack	temp	Remarks
X Y OR Z OR A AND				
Y OR Z OR A AND	X			
OR Z OR A AND	X Y			
Z OR A AND	X Y	OR		
OR A AND	X Y	OR	Z	Since op_stack is not empty, Z goes to temp
A AND	X Y Z	OR OR		Next operator transfers operands in temp to stack
AND	X Y Z	OR OR	A	Since op_stack is not empty, A goes to temp
	OR(X, Y, Z), A	AND		Since the operator AND is different from the operator OR in the op_stack, the two ORs are popped from op_stack to process X Y and Z jointly. Next, temp is cleared and A is pushed onto the stack.
	AND(OR(X,Y,Z),A)			Since the postfix expression is empty, the final operator in the op_stack is popped and used to evaluate the remaining elements in the stack.

Table 1: Example processing of postfix expression "X Y OR Z OR A AND"

Why the op_stack is popped if len(temp) > 1

In general, if two terms are accumulated in temp, it implies that the incoming operator and the operators in the op_stack should be evaluated separately. In this case, it should be AND(X,Y) and AND(W,Z) instead of AND(X,Y,W,Z).

Postfix expression	stack	op_stack	temp	Remarks
X Y AND W Z AND OR				
Y AND W Z AND OR	X			
AND W Z AND OR	X Y			
W Z AND OR	X Y	AND		
Z AND OR	X Y	AND	W	
AND OR	X Y	AND	W Z	
OR	AND(X,Y) W Z	AND		Since len(temp) > 1, pop AND from op_stack.*
	AND(X, Y) AND(W,Z)	OR		
	OR(AND(X,Y),AND(W,Z)			

Table 2: Example processing of postfix expression "X Y AND W Z AND OR"

Example with ANDNOT

Postfix expression	stack	op_stack	temp	Remarks
X Y AND Z ANDNOT W AND				
Y AND Z ANDNOT W AND	X			
AND Z ANDNOT W AND	X Y			
Z ANDNOT W AND	X Y	AND		
ANDNOT W AND	X Y	AND	Z	
W AND	AND(X Y) NOT(Z)			ANDNOT pops the op_stack and transfers Z to the stack to be negated
AND	AND(X Y) NOT(Z) W			
	AND(AND(X,Y), NOT(Z), W)			

Table 3: Example processing of postfix expression "X Y AND Z ANDNOT W AND"

This algorithm will not be able to group all the ANDs in the sequence X Y AND Z ANDNOT W AND, since ANDNOT forces X Y AND to evaluate first. Nevertheless, there is some degree of optimisation allowed, since a three way merge between AND(X,Y), NOT(Z) and W is possible. Given more positive terms to be merged, e.g. X Y AND Z ANDNOT W AND T AND S AND, the smallest of the positive terms AND(X,Y), W, T, S can be selected first to be merged.