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Feb 25, 2020

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Assignment 4

1. My algorithm is very simple. Whenever an open parenthesis is found, it will increment the depth counter. If a closed parenthesis is found, I will decrement the depth counter by one.

Pseudo code:

While( *something in stack* ) {  
 if( *expression == “{”* ) {  
 *depth += 1*

} else if( *expression == “}”* ) {

if( *stack.pop == “}” or stack.pop == “}*” ) {

depth -= 1

} else {  
 return

}

}

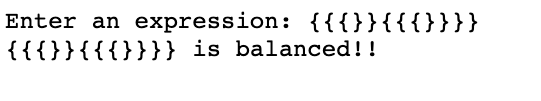
}

Because this algorithm has to transverse through the stack, the worst case will be O(n).

Best case: O(1) (The expression is 2 characters long , empty or the top symbol is not open parenthesis, that way it is safe to say the stack isn’t balanced.)

Worst case: O(n) (The expression is balanced)

2.)

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