

```

package programmingIILap;

import java.util.*; // Import the Java
utility package for using the Stack class

public class MyParenthesisMatcher {
    // Method to check if parentheses in
    a string are balanced
    static boolean
    areParenthesisOk(String expr) {
        Stack<Character> stack = new
        Stack<Character>(); // Create a stack to
        hold opening parentheses

        // Traverse each character in the
        expression
        for (int i = 0; i <
        expr.length(); i++) {
            char c = expr.charAt(i); //
            Get the character at the current index
            if (c == '(') { // If the
            character is an opening parenthesis
                stack.push(c); // Push it
                onto the stack
            } else if (c == ')') { // If
            the character is a closing parenthesis
                if (stack.isEmpty()) { //
                Check if the stack is empty
                    return false; // If
                    empty, it means there's no matching
                    opening parenthesis
                } else {
                    stack.pop(); // Pop
                    the top of the stack (matching opening
                    parenthesis)
                }
            }
        }
        return (stack.isEmpty()); //
        Return true if the stack is empty (all
        parentheses matched)
    }

    public static void main(String[]
    args) {
        String expr = "(ab(cd))"; //
        Example input expression (can be modified
        by user)

        // Check if the parentheses are
        balanced and print the result
        if (areParenthesisOk(expr))

            System.out.println("Balanced"); //
            Output if parentheses are balanced
        else
            System.out.println("Not
            Balanced"); // Output if parentheses are
            not balanced
        }
    }
}

```

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```
1 package programmingIILap;
2
3 import java.util.*;
4
5 public class MyParenthesisMatcher {
6     static boolean areParenthesisOK(String expr) {
7         Stack<Character> stack = new Stack<Character>();
8
9         // Traverse the expression
10        for (int i = 0; i < expr.length(); i++) {
11            char c = expr.charAt(i);
12            if (c == '(') {
13                stack.push(c);
14            } else if (c == ')') {
15                if (stack.isEmpty()) {
16                    return false;
17                }
18                stack.pop();
19            }
20        }
21        return stack.isEmpty();
22    }
23 }
```

Console Output: Balanced