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Labsheet:10

Lab10: Checking Parenthesis in Expression using Stack

```
In [2]: class BracketChecker:
    def __init__(self, expression):
        self.expression = expression

    def is_balanced(self):
        stack = []
        opening_brackets = ['(', '[', '{']
        closing_brackets = [')', ']', '}']

        for char in self.expression:
            if char in opening_brackets:
                stack.append(char)
            elif char in closing_brackets:
                if len(stack) == 0:
                    return False
                top = stack.pop()
                if opening_brackets.index(top) != closing_brackets.index(char):
                    return False

        return len(stack) == 0

# Example usage
expression = input("Enter an expression: ")
checker = BracketChecker(expression)
if checker.is_balanced():
    print("The parentheses are balanced.")
else:
    print("The parentheses are not balanced.")
```

Enter an expression: ()
The parentheses are not balanced.

In []: