**BRAC University**

**Department of Computer Science and Engineering**

**CSE 220: Data Structures**

**Assignment 05**

**Input**

Your program will take an arithmetic expression as an input. For Example:

1+2\*(3/4)

1+2\*[3\*3+{4–5(6(7/8/9)+10)–11+(12\*8)]+14

1+2\*[3\*3+{4–5(6(7/8/9)+10)}–11+(12\*8)/{13+13}]+14

**Program**

Your program will determine whether the open brackets (the square brackets, curly braces and the parentheses) are closed in the correct order.

**Output**

**Output 1**

1+2\*(3/4)

This expression is correct.

**Output 2**

1+2\*[3\*3+{4–5(6(7/8/9)+10)–11+(12\*8)]+14

This expression is NOT correct.

Error at character # 10. ‘{‘- not closed.

**Output 3**

1+2\*[3\*3+{4–5(6(7/8/9)+10)}–11+(12\*8)/{13+13}]+14

This expression is correct.

**Output 4**

1+2]\*[3\*3+{4–5(6(7/8/9)+10)–11+(12\*8)]+14

This expression is NOT correct.

Error at character # 4. ‘]‘- not opened.

**Task 1**

Solve the above problem using an array based stack.

**Task 2**

Solve the above problem using a linked list based stack.