Compiler Design (Midterm Lab 3)

Task 1: Create another C++ function checkExpression2(string s) in the same program that checks whether the input is **Valid** or **Invalid** for only these forms:

Valid forms: X++, ++X, X--, --X
Invalid examples: ---X, +X-

Assume X is a single letter variable.

Sample Input 1: X++
Expected Output 1: Valid

Sample Input 2: ---X
Expected Output 2: Invalid

Sample Input 3: +X-
Expected Output 3: Invalid

Task 2: Write a C++ program that takes one line as input and prints **Valid** or **Invalid** for a simple arithmetic expression using:

- operands as single letters only, like A, b, X
- operators only from + - * /
- spaces may appear anywhere

Validity rules:

1. Expression cannot start or end with an operator
2. No two operators can be consecutive
3. No two operands can be consecutive without an operator

Sample Input 1: A + B*C
Expected Output 1: Valid

Sample Input 2: A + * B
Expected Output 2: Invalid

Sample Input 3: AB + C
Expected Output 3: Invalid