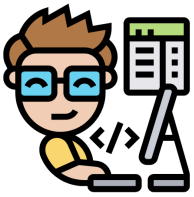

DAILY PROGRAMMING CHALLENGE

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Evaluate a Postfix Expression

Given a postfix expression (also known as Reverse Polish Notation), your task is to evaluate the expression and return the result. The expression can contain integers and the four basic arithmetic operators +, -, *, and /. Assume that the input is always valid and the division operator performs integer division, truncating towards zero.

Input:

- A string representing a postfix expression where operands and operators are separated by spaces.
- The string contains only integers (both positive and negative) and the operators +, -, *, and /.

Output:

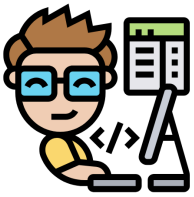
- An integer representing the result of evaluating the postfix expression.

Examples:

- Example 1
  Input: "2 1 + 3 *"
  Output: 9
  Explanation:
  - First, 2 and 1 are pushed onto the stack.
  - Encountering '+', 1 and 2 are popped, added to get 3, and pushed back onto the stack.
  - Then, 3 is pushed onto the stack.
  - Encountering '*', 3 and 3 are popped, multiplied to get 9, and pushed back onto the stack.
  - The final result is 9.

Constraints:

- The input is always a valid postfix expression.
- The input contains only integers and the operators +, -, *, /.
- The division operator / performs integer division, truncating toward zero.
- The length of the input string is between 1 and 1000 characters.



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Test Cases:

1. Input: "5 6 +"
   Output: 11
2. Input: "3 4 2 * 1 5 - 2 3 ^ ^ / +"
   Output: -1
3. Input: "-5 6 -"
   Output: -11
4. Input: "15 7 1 1 + - / 3 * 2 1 1 + + -"
   Output: 5
5. Input: “5”
   Output: 5

Edge Cases:

1. Single Operand: If the postfix expression consists of a single operand (e.g., "42"), the result should be the operand itself.
2. Negative Numbers: The expression can include negative integers.
3. Integer Division: Division should result in an integer truncated toward zero.
4. Multiple Operations: The expression can have multiple operations, ensuring that the stack handles operations in the correct order.