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//-----  
// Group names: Alexander Koo, Camplesg Nguyen, Tristan Do  
// Assignment: CPSC 323, No.1  
// Due date: 2/8/2024  
// Purpose: this program reads an expression in postfix form, evaluates the expression  
// and displays its value  
//-----
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#include <bits/stdc++.h>
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int a, b, c, d;
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```
void calculateValue(std::string string) { // void function used to calculate value and print to  
terminal
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```
    std::stack<int> stack;  
    char letter;  
    for (int i = 0; i < string.size(); i++) {  
        letter = string[i];  
        int first;  
        int second;  
        switch (letter) {  
            case 'a':  
                stack.push(a);  
                break;  
            case 'b':  
                stack.push(b);  
                break;  
            case 'c':  
                stack.push(c);  
                break;  
            case 'd':  
                stack.push(d);  
                break;  
            case '-':  
                first = stack.top();  
                stack.pop();  
                second = stack.top();  
                stack.pop();  
                stack.push(second - first);  
                break;  
            case '*':  
                first = stack.top();  
                stack.pop();  
                second = stack.top();
```

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        stack.pop();
        stack.push(second * first);
        break;
    case '+':
        first = stack.top();
        stack.pop();
        second = stack.top();
        stack.pop();
        stack.push(second + first);
        break;
    case '$':
        break;
}
}
std::cout << "Value: " << stack.top() << std::endl;
}

```

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void askExpression() { // function to ask for a postfix expression, called if continue = yes
    std::cout << "Enter a postfix expression with $ at the end: ";
}

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void continuation() { // function to ask if the user would like to continue
    std::cout << "CONTINUE(y/n)? ";
}

```

```

int main() {
    std::string input;
    char condition;
    std::cout << "Enter the values of a, b, c and d: ";
    std::cin >> a >> b >> c >> d;
    askExpression();
    std::cin >> input;
    calculateValue(input);
    continuation();
    std::cin >> condition;
    while(condition == 'y') {
        askExpression();
        std::cin >> input;
        calculateValue(input);
        continuation();
        std::cin >> condition;
    }
    return 0;
}

```

```
alexanderkoo@LAPTOP-050F50L5:/mnt/c/Users/Alexander Koo/Desktop/Alexander Koo/School Stuff 2023-2024/SPRING 24/COMPILER$ ls
H1Q4.cpp
alexanderkoo@LAPTOP-050F50L5:/mnt/c/Users/Alexander Koo/Desktop/Alexander Koo/School Stuff 2023-2024/SPRING 24/COMPILER$ g++ H1Q4.cpp
alexanderkoo@LAPTOP-050F50L5:/mnt/c/Users/Alexander Koo/Desktop/Alexander Koo/School Stuff 2023-2024/SPRING 24/COMPILER$ ./a.out
Enter the values of a, b, c and d: 5 7 2 4
Enter a postfix expression with $ at the end: ab+cd*-$
Value: 4
CONTINUE(y/n)? y
Enter a postfix expression with $ at the end: abcd+++
Value: 18
CONTINUE(y/n)? y
Enter a postfix expression with $ at the end: abcd*-$
Value: -5
alexanderkoo@LAPTOP-050F50L5:/mnt/c/Users/Alexander Koo/Desktop/Alexander Koo/School Stuff 2023-2024/SPRING 24/COMPILER$
```