CSA0317-DATA STRUCTURES

Program 12

```c
#include <stdio.h>
#include <ctype.h>
#define MAX 100
int stack[MAX];
int top = -1;
void push(int value) {
    if (top == MAX - 1) {
        printf("Stack Overflow!\n");
        return;
    }
    stack[++top] = value;
}
int pop() {
    if (top == -1) {
        printf("Stack Underflow!\n");
        return -1;
    }
    return stack[top--];
}
int evaluatePostfix(char* exp) {
    int i, operand1, operand2, result;

    for (i = 0; exp[i] != '\0'; i++) {
        // If character is a digit, push to stack
        if (isdigit(exp[i])) {
            push(exp[i] - '0');  // Convert char to int
        }
        else {
```

```c
            operand2 = pop();

            operand1 = pop();


            switch (exp[i]) {

                case '+': push(operand1 + operand2); break;

                case '-': push(operand1 - operand2); break;

                case '*': push(operand1 * operand2); break;

                case '/': push(operand1 / operand2); break;

            }

        }

    }

    return pop();

}


int main() {

    char exp[MAX];


    printf("Enter postfix expression (use single-digit numbers): ");

    scanf("%s", exp);


    int result = evaluatePostfix(exp);

    printf("Result: %d\n", result);


    return 0;

}
```

Output:


```
Output                                        Clear

Enter postfix expression (use single-digit numbers):
     23+4*
Result: 20


=== Code Execution Successful ===
```