Write a C program to implement the back end of the compiler.

**Code:**

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#include <ctype.h>

#define MAX\_LEN 100

void generateAssembly(char \*expr) {

char \*token = strtok(expr, " ");

int regCount = 0;

while (token != NULL) {

if (isdigit(token[0])) {

printf("MOV R%d, %s\n", regCount, token);

} else if (strcmp(token, "+") == 0) {

printf("ADD R%d, R%d\n", regCount - 2, regCount - 1);

regCount -= 1;

} else if (strcmp(token, "-") == 0) {

printf("SUB R%d, R%d\n", regCount - 2, regCount - 1);

regCount -= 1;

} else if (strcmp(token, "\*") == 0) {

printf("MUL R%d, R%d\n", regCount - 2, regCount - 1);

regCount -= 1;

} else if (strcmp(token, "/") == 0) {

printf("DIV R%d, R%d\n", regCount - 2, regCount - 1);

regCount -= 1;

}

token = strtok(NULL, " ");

regCount++;

}

}

int main() {

char expr[MAX\_LEN];

printf("Enter postfix expression: ");

fgets(expr, MAX\_LEN, stdin);

expr[strcspn(expr, "\n")] = 0;

printf("Generated Assembly Code:\n");

generateAssembly(expr);

return 0;

}

**OUTPUT:**

