Source code:

#include <stdio.h>

#include <string.h>

typedef struct {

char result[10];

char arg1[10];

char op[2];

char arg2[10];

} Instruction;

void generateCode(Instruction instructions[], int n) {

for (int i = 0; i < n; i++) {

if (strcmp(instructions[i].op, "+") == 0) {

printf("LOAD R1, %s\n", instructions[i].arg1);

printf("ADD R1, %s\n", instructions[i].arg2);

printf("STORE %s, R1\n", instructions[i].result);

} else if (strcmp(instructions[i].op, "-") == 0) {

printf("LOAD R1, %s\n", instructions[i].arg1);

printf("SUB R1, %s\n", instructions[i].arg2);

printf("STORE %s, R1\n", instructions[i].result);

} else if (strcmp(instructions[i].op, "\*") == 0) {

printf("LOAD R1, %s\n", instructions[i].arg1);

printf("MUL R1, %s\n", instructions[i].arg2);

printf("STORE %s, R1\n", instructions[i].result);

} else if (strcmp(instructions[i].op, "/") == 0) {

printf("LOAD R1, %s\n", instructions[i].arg1);

printf("DIV R1, %s\n", instructions[i].arg2);

printf("STORE %s, R1\n", instructions[i].result);

} else {

printf("Invalid operation: %s\n", instructions[i].op);

}

}

}

int main() {

int n;

printf("Enter the number of instructions: ");

scanf("%d", &n);

Instruction instructions[n];

for (int i = 0; i < n; i++) {

printf("Enter instruction %d (result, arg1, op, arg2): ", i + 1);

scanf("%s %s %s %s", instructions[i].result, instructions[i].arg1, instructions[i].op, instructions[i].arg2);

}

generateCode(instructions, n);

return 0;

}

