#include <stdio.h>

#include <stdlib.h>

#include <string.h>

typedef struct {

char op[10];

char arg1[10];

char arg2[10];

char result[10];

} TAC;

void generateAssembly(TAC tac[], int count)

{

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

for (int i = 0; i < count; i++)

{

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

printf("MOV R0, %s\nADD R0, %s\nMOV %s, R0\n", tac[i].arg1, tac[i].arg2, tac[i].result);

else if (strcmp(tac[i].op, "-") == 0)

printf("MOV R0, %s\nSUB R0, %s\nMOV %s, R0\n", tac[i].arg1, tac[i].arg2, tac[i].result);

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

printf("MOV R0, %s\nMUL R0, %s\nMOV %s, R0\n", tac[i].arg1, tac[i].arg2, tac[i].result);

else if (strcmp(tac[i].op, "/") == 0)

printf("MOV R0, %s\nDIV R0, %s\nMOV %s, R0\n", tac[i].arg1, tac[i].arg2, tac[i].result);

}

}

int main()

{

TAC tac[] =

{

{"+", "a", "b", "t1"},

{"\*", "t1", "c", "t2"},

{"-", "t2", "d", "t3"},

{"/", "t3", "e", "result"}

};

int count = sizeof(tac) / sizeof(tac[0]);

generateAssembly(tac, count);

return 0;

}