//Front End oF Compiler

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#include <stdio.h>

#include <stdlib.h>

#include <string.h>

void copyFile(char file1[],char file2[]){

char row[100];

FILE \*f1 = fopen(file1,"r");

FILE \*f2 = fopen(file2,"w");

while(fscanf(f1,"%s",row) == 1)

fprintf(f2,"%s\n",row);

fclose(f1);

fclose(f2);

}

int isOpe(char line[]){

char op[] = {"+-\*/=%"};

int i,j;

for(i=0;i<strlen(line);i++)

for(j=0;j<strlen(op);j++)

if(op[j] == line[i])

return 1;

return 0;

}

char isLeGr(char line[]){

int i,j;

char op[] = {"><"};

for(i=0;i<strlen(line);i++)

for(j=0;j<strlen(op);j++)

if(op[j] == line[i])

return line[i];

return '\0';

}

int findadd(int line,int addr){

FILE \*f1 = fopen("temp.txt","r");

int lin=1;

char l[25]={0};

while(fgets(l,25,f1) != NULL){

if(isOpe(l))

addr += 2;

else if(isLeGr(l))

addr++;

if(line <= lin)

if(!strcmp(l,"}\n"))

return addr;

lin++;

}

fclose(f1);

}

void insOperator(int addr,char line[],int tcnt,FILE \*f2){

char lhs[5],rhs[5];

strcpy(lhs,strtok(line,"="));

strcpy(rhs,strtok(NULL,"="));

fprintf(f2,"%d\ttemp%d = %s",addr,tcnt,rhs);

fprintf(f2,"%d\t%s = temp%d\n",++addr,lhs,tcnt);

}

void insCondition(int addr,char line[],int lin,char rel,FILE \*f2,int s){

char key[5],cond[5];

int jaddr,i;

strcpy(key,strtok(line,"("));

strcpy(cond,strtok(NULL,")"));

if(rel == '>'){

for(i=0;i<strlen(cond);i++)

if(cond[i] == '>'){

cond[i] = '<';

break;

}

}else{

for(i=0;i<strlen(cond);i++)

if(cond[i] == '<'){

cond[i] = '>';

break;

}

}

jaddr = findadd(lin,s);

fprintf(f2,"%d\t%s %s goto %d\n",addr,key,cond,jaddr);

}

int main(){

int i,j,tcnt=0,linno=1;

int strt,lineaddr=100;

char line[25]={0},c;

FILE \*f1 = fopen("pgm.txt","r");

copyFile("pgm.txt","temp.txt");

FILE \*f2 = fopen("tac.txt","w");

while(fgets(line,25,f1) != NULL){

if(isOpe(line)){

insOperator(lineaddr,line,tcnt++,f2);

lineaddr += 2;

}else if((c = isLeGr(line)) != '\0'){

insCondition(lineaddr,line,linno,c,f2,strt);

lineaddr ++;

}

linno++;

}

fclose(f1);

fclose(f2);

remove("temp.txt");

FILE \*fptr=fopen("tac.txt","r");

c = fgetc(fptr);

while (c != EOF){

printf ("%c", c);

c = fgetc(fptr);

}

fclose(fptr);

}

root@AumrudhLalKumarTJ:~/lab/systemsoftware/ex\_10# ./a.out

100 temp0 = 0

101 b = temp0

102 temp1 = 0

103 c = temp1

104 if a<b goto 11

105 temp2 = i+1;

106 i = temp2

107 temp3 = j+2;

108 j = temp3

109 temp4 = k-6;

110 k = temp4

111 temp5 = 9

112 k = temp5

root@AumrudhLalKumarTJ:~/lab/systemsoftware/ex\_10# cat pgm.txt

b=0

c=0

if(a>b)

{

i=i+1;

j=j+2;

k=k-6;

}

else

{

k=9

}