PROGRAM

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<conio.h>

int main()

{

FILE \*f1,\*f2,\*f3,\*f4;

int lc,sa,l,op1,o,len,c;

char m1[20],la[20],op[20],otp[20];

f1=fopen("input.txt","r");

f3=fopen("symtab.txt","w");

f4=fopen("intermediate.txt","w");

fscanf(f1,"%s\t%s\t%d",la,m1,&op1);

if(strcmp(m1,"START")==0)

{

sa=op1; //assign starting address of program

lc=sa;

printf("%d\t%s\t%s\t%d\n",lc,la,m1,op1);

fprintf(f4,"%d\t%s\t%s\t%d\n",lc,la,m1,op1);

}

else

{

lc=0; //address of next instruction in program

}

fscanf(f1,"%s\t%s",la,m1);

while((c = fgetc(f1)) != EOF) //repeat till EOF in f1

{

fscanf(f1,"%s",op);

printf("\n%d\t%s\t%s\t%s\n",lc,la,m1,op);

fprintf(f4,"\n%d\t%s\t%s\t%s\n",lc,la,m1,op);

if(strcmp(la,"-")!=0) //label present

{

fprintf(f3,"\n%d\t%s\n",lc,la); //write to symtab

}

f2=fopen("optab.txt","r");

//f2 is optab

fscanf(f2,"%s\t%d",otp,&o);

while((c = fgetc(f2)) != EOF) //repeat till EOF in f2

{

if(strcmp(m1,otp)==0) //compare operation with optab strings

{

lc=lc+3;

break;

}

fscanf(f2,"%s\t%d",otp,&o);

}

fclose(f2);

if(strcmp(m1,"WORD")==0) //operation is WORD

{

lc=lc+3;

}

else if(strcmp(m1,"RESW")==0)

{

op1=atoi(op); //convert op to integer

lc=lc+(3\*op1);

}

else if(strcmp(m1,"BYTE")==0)

{

if(op[0]=='X') //Hexadecimal constant

lc=lc+1;

else //character constant

{

len=strlen(op)-3; //remove C and '

lc=lc+len;

}

}

else if(strcmp(m1,"RESB")==0)

{

op1=atoi(op);

lc=lc+op1;

}

fscanf(f1,"%s\t%s",la,m1);

}

if(strcmp(m1,"END")==0)

{

fprintf(f4,"\nProgram length = %d",lc-sa);

printf("\nProgram length = %d",lc-sa);

}

fclose(f1);

fclose(f3);

fclose(f4);

getch();

return 0;

}