**//Implementation of program for symbol table generation**

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<ctype.h>

char var1[100][100];

char var2[100][100];

char var3[100][100];

int isKeyword(char buffer[])

{

char keywords [32][10]={"auto","break","case","char","const","continue","default",

"do","double","else","enum","extern","float","for","goto",

"if","int","long","register","return","short","signed",

"sizeof","static","struct","switch","typedef","union",

"unsigned","void","volatile","while"};

int i,flag=0;

for(i=0;i<32;i++)

{

if(strcmp(keywords[i],buffer)==0)

{

flag=1;

break;

}

}

return flag;

}

int main()

{

int count=0,count1=0;

char ch,buffer[15],operators[]="+-\*/%+=";

FILE\*fp;

int i,j=0;

fp=fopen("inp.c","r");

if(fp==NULL)

{

printf("error while opening the file\n");

exit(0);

}

while((ch=fgetc(fp))!=EOF)

{

for(i=0;i<6;++i)

{

if(ch==operators[i]){}

// printf("%c is operator\n",ch);

}

if(isalnum(ch)||ch=='('||ch==')')

{

buffer[j++]=ch;

}

else if((ch==' ' ||ch=='\n')&&(j!=0))

{

buffer[j]='\0';

if(isKeyword(buffer)==1)

{

//printf("%s is keyword\n",buffer);

strcpy(var1[count],buffer);

strcpy(var2[count],"Keyword");

strcpy(var3[count],"0");

count++;

}

else

{

if(buffer[j-2]=='('&&buffer[j-1]==')'){

strcpy(var2[count],"Procedure");

char temp[100];

strcpy(temp,buffer);

temp[j-2]='\0';

strcpy(var1[count],temp);

strcpy(var3[count],(void\*)&buffer);

}

else{

strcpy(var2[count],"Identifier");

strcpy(var1[count],buffer);

strcpy(var3[count],(void\*)&buffer);

}

count++;

}

j=0;

}

}

fclose(fp);

while(1){

printf("Enter Choice:\n1.Display\n2.Lookup\n3.Delete\n4.Exit\n");

int choice ;

printf("Enter Choice:");

scanf("%d",&choice);

switch(choice){

case 1:

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

if(strcmp(var2[i],"Keyword")==0){

printf("%s\t%s\t\t%s\n",var1[i],var2[i],var3[i]);

}

else{

if(var1[i][0]!='\0')

printf("%s\t%s\t%p\n",var1[i],var2[i],var3[i]);

}

}

break;

case 2:

printf("Enter Identifier or Procedure name:");

char tosearch[100];

scanf("%s",tosearch);

int found=-1;

for(int i=0;i<100;i++){

if(strcmp(var1[i],tosearch)==0){

found=i;

}

}

if(found==-1){

printf("Not found" );

}

else{

printf("%s\t%s\t\t%p\n",var1[found],var2[found],var3[found]);

}

break;

case 3:

printf("Enter Identifier or Procedure name:");

char todel[100];

scanf("%s",todel);

int found1=-1;

for(int i=0;i<100;i++){

if(strcmp(var1[i],todel)==0){

found1=i;

}

}

if(found1==-1){

printf("Not found" );

}

else{

printf("deleted");

var1[found1][0]='\0';

var2[found1][0]='\0';

memset(&var3[found1], 0, sizeof(var3[found1]));

}

break;

case 4:

exit(0);

break;

}

}

return 0;

}

**Input File:**

int a;

double b;

auto c;

void abc()

{

int d;

double e;

}

**Output:**

lab-3@lab3-OptiPlex-3010:~/Desktop/TEA37$ gcc 3.c

lab-3@lab3-OptiPlex-3010:~/Desktop/TEA37$ ./a.out

Enter Choice:

1.Display

2.Lookup

3.Delete

4.Exit

Enter Choice:1

int Keyword 0

a Identifier 0x804ff24

double Keyword 0

b Identifier 0x804ffec

auto Keyword 0

c Identifier 0x80500b4

void Keyword 0

abc Procedure 0x805017c

int Keyword 0

d Identifier 0x8050244

double Keyword 0

e Identifier 0x805030c

Enter Choice:

1.Display

2.Lookup

3.Delete

4.Exit

Enter Choice:2

Enter Identifier or Procedure name:a

a Identifier 0x804ff24

Enter Choice:

1.Display

2.Lookup

3.Delete

4.Exit

Enter Choice:3

Enter Identifier or Procedure name:a

deletedEnter Choice:

1.Display

2.Lookup

3.Delete

4.Exit

Enter Choice:1

int Keyword 0

double Keyword 0

b Identifier 0x804ffec

auto Keyword 0

c Identifier 0x80500b4

void Keyword 0

abc Procedure 0x805017c

int Keyword 0

d Identifier 0x8050244

double Keyword 0

e Identifier 0x805030c

Enter Choice:

1.Display

2.Lookup

3.Delete

4.Exit

Enter Choice:4