**Implementation of Symbol Table**

Aim

To write a C program to implement symbol table

Program

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<conio.h> int cnt=0;

struct symtab

{

char label[20]; int addr;

}sy[50]; void insert();

int search(char \*);

void display();

void modify();

void main()

{

int ch,val; char lab[10];

do

{

printf("\n 1.insert\n2.display\n3.search\n4.modify\n5.exit\n"); scanf("%d",&ch);

switch(ch)

{

case 1:

insert();

break;

case 2:

display();

break;

case 3:

printf("enter the label");

scanf("%s",lab);

val=search(lab);

if(val==1)

printf("label is found");

else

printf("label is not found");

break;

case 4:

modify();

break;

case 5:

exit(0);

break;

}

}while(ch<5);

}

void insert()

{

int val;

char lab[10]; printf("enter the label"); scanf("%s",lab); val=search(lab); if(val==1)

printf("duplicate symbol");

else

{

strcpy(sy[cnt].label,lab);

printf("enter the address");

scanf("%d",&sy[cnt].addr);

cnt++;

}

}

int search(char \*s)

{

int flag=0,i; for(i=0;i<cnt;i++)

{

if(strcmp(sy[i].label,s)==0)

flag=1;

}

return flag;

}

void modify()

{

int val,ad,i;

char lab[10];

printf("enter the label"); scanf("%s",lab); val=search(lab); if(val==0)

printf("no such symbol");

else

{

printf("label is found \n");

printf("enter the address");

scanf("%d",&ad);

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

{

if(strcmp(sy[i].label,lab)==0)

sy[i].addr=ad;

}

}

}

void display()

{

int i;

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

printf("%s\t%d\n",sy[i].label,sy[i].addr);

}

Input and output

1.insert

2.display

3.search

4.modify

5.exit

1

enter the label A enter the address 2000

1.insert

2.display

3.search

4.modify

5.exit

1

enter the label SUB enter the address 3000

1.insert

2.display

3.search

4.modify

5.exit

1

enter the label MUL enter the address 4000

1.insert

2.display

3.search

4.modify

5.exit

2

A 2000 SUB 3000 MUL 4000

1.insert

2.display

3.search

4.modify

5.exit

3

enter the label A label is found 1.insert 2.display 3.search 4.modify

5.exit

4

enter the label A label is found

enter the address 5000

1.insert

2.display

3.search

4.modify

5.exit

5

Result :

Thus the symbol table was implemented