

```
1 #include<stdio.h>
2 #include<stdlib.h>
3 #include<string.h>
4 int cnt=0;
5 struct symtab {
6     char label[20];
7     int addr;
8 } sy[50];
9 void insert();
10 int search(char *);
11 void display();
12 void modify();
13 void deleteSymbol();
14 int main() {
15     int ch,val;
16     char lab[10];
17     do {
18         printf("\n----- SYMBOL TABLE MENU ----- \n");
19         printf("1. Insert\n2. Display\n3. Search\n4. Modify\n5. Delete\n6. Exit\n");
20         printf("Enter your choice: ");
21         scanf("%d",&ch);
22         switch(ch) {
23             case 1: insert(); break;
24             case 2: display(); break;
25             case 3:
26                 printf("Enter the label: ");
27                 scanf("%s",lab);
28                 val=search(lab);
29                 if(val==1)
30                     printf("Label '%s' is found\n", lab);
31                 else
32                     printf("Label '%s' is not found\n", lab);
33                 break;
34             case 4: modify(); break;
35             case 5: deleteSymbol(); break;
36             case 6: exit(0);
37             default: printf("Invalid choice!\n");
38         }
39     } while(ch<6);
40 }
```

```

41 ~ void insert() {
42     int val;
43     char lab[10];
44     printf("Enter the label: ");
45     scanf("%s",lab);
46     val=search(lab);
47     if(val==1)
48         printf("Duplicate symbol! Cannot insert.\n");
49 ~ else {
50         strcpy(sy[cnt].label,lab);
51         printf("Enter the address: ");
52         scanf("%d",&sy[cnt].addr);
53         cnt++;
54     }
55 }
56 ~ int search(char *s) {
57     int flag=0,i;
58 ~ for(i=0;i<cnt;i++) {
59         if(strcmp(sy[i].label,s)==0)
60             flag=1;
61     }
62     return flag;
63 }
64 ~ void modify() {
65     int val,ad,i;
66     char lab[10];
67     printf("Enter the label to modify: ");
68     scanf("%s",lab);
69     val=search(lab);
70     if(val==0)
71         printf("No such symbol!\n");
72 ~ else {
73         printf("Label found.\nEnter new address: ");
74         scanf("%d",&ad);
75 ~ for(i=0;i<cnt;i++) {
76         if(strcmp(sy[i].label,lab)==0)
77             sy[i].addr=ad;
78         }
79         printf("Address updated.\n");
80     }
81 }

```

```

82 void deleteSymbol() {
83     char lab[10];
84     int i,j,val;
85     printf("Enter the label to delete: ");
86     scanf("%s",lab);
87     val=search(lab);
88     if(val==0) {
89         printf("No such symbol!\n");
90     } else {
91         for(i=0;i<cnt;i++) {
92             if(strcmp(sy[i].label,lab)==0) {
93                 for(j=i;j<cnt-1;j++) {
94                     sy[j]=sy[j+1];
95                 }
96                 cnt--;
97                 printf("Symbol '%s' deleted successfully.\n", lab);
98                 return;
99             }
100         }
101     }
102 }
103 void display() {
104     int i;
105     if(cnt==0) {
106         printf("Symbol Table is empty!\n");
107         return;
108     }
109     printf("\n----- SYMBOL TABLE ----- \n");
110     printf("%-10s %-10s\n","LABEL","ADDRESS");
111     printf("----- \n");
112     for(i=0;i<cnt;i++) {
113         printf("%-10s %-10d\n",sy[i].label,sy[i].addr);
114     }
115     printf("----- \n");
116 }

```

----- SYMBOL TABLE MENU -----

1. Insert
2. Display
3. Search
4. Modify
5. Delete
6. Exit

Enter your choice: 1

Enter the label: A

Enter the address: 100

----- SYMBOL TABLE MENU -----

1. Insert
2. Display
3. Search
4. Modify
5. Delete
6. Exit

Enter your choice: 2

----- SYMBOL TABLE -----

| LABEL | ADDRESS |
|-------|---------|
|-------|---------|

|   |     |
|---|-----|
| A | 100 |
|---|-----|

----- SYMBOL TABLE MENU -----

1. Insert
2. Display
3. Search
4. Modify
5. Delete
6. Exit

Enter your choice: 1

Enter the label: B

Enter the address: 200

----- SYMBOL TABLE MENU -----

1. Insert
2. Display
3. Search
4. Modify
5. Delete
6. Exit

Enter your choice: 5

Enter the label to delete: A

Symbol 'A' deleted successfully.

----- SYMBOL TABLE MENU -----

1. Insert
2. Display
3. Search
4. Modify
5. Delete
6. Exit

Enter your choice: 2

----- SYMBOL TABLE -----

| LABEL | ADDRESS |
|-------|---------|
|-------|---------|

-----

|   |     |
|---|-----|
| B | 200 |
|---|-----|

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