

c-Program to implement stack using Arrays;

```
#include<stdio.h>
#include<stdlib.h>
#define STACK_SIZE 8

int item;
int stack[10];
int top=-1;
void Push()
{
    if (top==STACK_SIZE-1)
    {
        printf("\n STACK OVERFLOW\n");
        return ;
    }
    top=top+1;
    stack[top]=item;
}

int Pop()
{
    if (top== -1) return -1;
    return stack[top-1];
}

void display()
{
    int i;
    if (top== -1)
    {
        printf("\n STACK UNDERFLOW\n");
        return ;
    }
```

```
printf("DISPLAYING CONTENTS OF STACK\n");
```

```
for(i=0; i<=top; i++)
```

```
{
```

```
printf("%d\n", stack[i]);
```

```
}
```

```
}
```

```
int main()
```

```
{
```

```
int Deleted_item;
```

```
int choice;
```

```
for(;;)
```

```
{
```

```
printf("\n1:Push\n2:Pop\n3:Display\n4:exit\n");
```

```
printf("Enter the choice\n");
```

```
scanf("%d", &choice);
```

```
switch(choice)
```

```
{
```

```
case 1: printf("Enter the item to be inserted\n");
```

```
scanf("%d", &item);
```

```
push();
```

```
break;
```

```
case 2: Deleted_item = pop();
```

```
if(Deleted_item == -1)
```

```
{
```

```
printf("STACK IS EMPTY\n");
```

```
}
```

```
    else
    {
        printf("Item deleted is %d\n", deleted_item);
    }
    break;
}
```

case 3 : display();

break;

default : exit(0);

return 0;

}

}

```
1 #include<stdio.h>
2 #include<stdlib.h>
3 #define STACK_SIZE 5
4
5 int item;
6 int stack[10];
7 int top=-1;
8
9 void push()
10 {
11     if(top==STACK_SIZE-1)
12     {
13         printf("STACK OVERFLOW\n");
14         return ;
15     }
16
17     top=top+1;
18     stack[top]=item;
19 }
20
21 int pop()
22 {
23     if(top==-1) return -1;
24     return stack[top--];
25 }
26
27 void display()
28 {
29     int i;
30     if(top==-1)
31     {
32         printf("STACK UNDERFLOW\n");
33         return ;
34     }
35
36     printf("\nDISPLAYING CONTENTS OF STACK\n");
37
38     for(i=0;i<=top;i++)
39     {
40         printf("%d\n",stack[i]);
41     }
42 }
```

```
Wall -o "a" "a.c" (in directory: C:\Users\DELL\Desktop\New folder)
lation finished successfully.
```

```
37
38     printf("%d\n",stack[i]);
39 }
40 }
41 int main()
42 {
43     int Deleted_item;
44     int choice;
45     for(;;)
46     {
47         printf("\n1:push\n2:pop\n3:display\n4:exit\n");
48         printf("Enter the choice\n");
49         scanf("%d",&choice);
50         switch(choice)
51         {
52             case 1:printf("Enter the item to be Inserted\n");
53                 scanf("%d",&item);
54                 push();
55                 break;
56
57             case 2:Deleted_item=pop();
58                 if(Deleted_item== -1)
59                 {
60                     printf("STACK IS EMPTY\n");
61                 }
62                 else
63                 {
64                     printf("ITEM DELETED IS %d\n",Deleted_item);
65                 }
66                 break;
67
68             case 3:display();
69                 break;
70
71             default:exit(0);
72             return 0;
73         }
74     }
}
```

```
gcc -Wall -o "a" "a.c" (in directory: C:\Users\DELL\Desktop\New folder)
Compilation finished successfully.
```

C:\WINDOWS\SYSTEM32\cmd.exe

1:push
2:pop
3:display
4:exit

Enter the choice

1
Enter the item to be Inserted

5

0

1:push

2:pop

3:display

4:exit

Enter the choice

1

Enter the item to be Inserted

10

1:push

2:pop

3:display

4:exit

Enter the choice

```
C:\WINDOWS\SYSTEM32\cmd.exe
4:exit
lsEnter the choice
o1
Enter the item to be Inserted
p15
q
q1:push
2:pop
s3:display
D4:exit
eEnter the choice
1
R1
Enter the item to be Inserted
20
j
1:push
2:pop
3:display
4:exit
Enter the choice
1
Enter the item to be Inserted
25
j
1:push
2:pop
3:display
4:exit
Enter the choice
```

C:\WINDOWS\SYSTEM32\cmd.exe

```
3:display  
4:exit  
Enter the choice  
1  
Enter the item to be Inserted  
26  
STACK OVERFLOW
```

```
1:push  
2:pop  
3:display  
4:exit  
Enter the choice  
2  
ITEM DELETED IS 25
```

```
1:push  
2:pop  
3:display  
4:exit  
Enter the choice  
2  
ITEM DELETED IS 20
```

```
1:push  
2:pop  
3:display  
4:exit  
Enter the choice  
exit
```

C:\WINDOWS\SYSTEM32\cmd.exe

1:push
2:pop
3:display
4:exit
Enter the choice

2
ITEM DELETED IS 10

1:push
2:pop
3:display
4:exit
Enter the choice

2
ITEM DELETED IS 5

1:push
2:pop
3:display
4:exit
Enter the choice

2
STACK IS EMPTY

1:push
2:pop
3:display
4:exit
Enter the choice

C:\WINDOWS\SYSTEM32\cmd.exe

Enter the choice

3

STACK UNDERFLOW

1:push

2:pop

3:display

4:exit

Enter the choice

1

Enter the item to be Inserted

5

1:push

2:pop

3:display

4:exit

Enter the choice

1

Enter the item to be Inserted

10

1:push

2:pop

3:display

4:exit

Enter the choice

1

Enter the item to be Inserted

index

C:\WINDOWS\SYSTEM32\cmd.exe

o
l
s1:push
o
2:pop
3:display
p
4:exit
qEnter the choice

q1
Enter the item to be Inserted

s
25

D

a1:push
R
2:pop
3:display
D
4:exit
aEnter the choice

B

DISPLAYING CONTENTS OF STACK

5

10

15

20

25

0

1:push
2:pop
3:display
4:exit
Enter the choice