1. 1.Program to demonstrate stack using arrays using c

```c
#include<stdio.h>
#include<stdlib.h>
#define size 5
int top=-1,item;
int stack[size];
void push()
{
if(top<size-1)
{
printf("Enter the Element: ");
scanf("%d",&item);
top++;
stack[top]=item;
printf("%d is Pushed into stack\n",item);
}
else
{
printf("The stack is Overflowed\n");
}
}
void pop()
{
if(top==-1)
{
printf("The stack is Underflowed\n");
}
else
{
printf("%d is popped from stack\n",stack[top]);
top--;
}
}
void display()
{
if(top==-1)
{
printf("The Stack is Empty\n");
}
else
{
for(int i=0;i<=top;i++)
{
printf("%d ",stack[i]);
}
printf("\n");
}
}
void isfull()
{
if(top==-1)
{
printf("Stack is Empty\n");
}
else if(top==(size-1))
{
printf("Stack is Full\n");
}
else
{
printf("Stack is Not Full\n");
}
```

```
}
int main()
{
while(1)
{
printf(" Menu:\n 1.Push\n 2.Pop\n 3.Display\n 4.Isfull\n 5.Exit\n");
int n;
printf("Enter your Choice : ");
scanf("%d",&n);
switch(n)
{
case 1: push();
break;
case 2: pop();
break;
case 3: display();
break;
case 4: isfull();
break;
case 5: exit(1);
break;
}
}
}
```

output:

```
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$ gcc stackArrays1.cc -o sa1
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$ ./sa1
 Menu:
 1.Push
 2.Pop
 3.Display
 4.Isfull
 5.Exit
Enter your Choice : 1
Enter the Element: 10
10 is Pushed into stack
 Menu:
 1.Push
 2.Pop
 3.Display
 4.Isfull
 5.Exit
Enter your Choice : 1
Enter the Element: 20
20 is Pushed into stack
 Menu:
 1.Push
 2.Pop
3.Display
 4.Isfull
 5.Exit
Enter your Choice : 3
10 20
 Menu:
```

```
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 1
Enter the Element: 30
30 is Pushed into stack
 Menu:
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 1
Enter the Element: 40
40 is Pushed into stack
 Menu:
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 3
10 20 30 40
 Menu:
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 4
Stack is Not Full
 Menu:
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 1
Enter the Element: 50
50 is Pushed into stack
 Menu:
1.Push
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 3
10 20 30 40 50
 Menu:
1.Push
```

```
2.Pop
3.Display
4.Isfull
5.Exit
Enter your Choice : 4
Stack is Full
 Menu:
 1.Push
 2.Pop
 3.Display
 4.Isfull
 5.Exit
Enter your Choice : 5
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$
```