DATE PAGE

LAB-1 POOJA.K
Program 1BM19CS111

WAP to simulate working of stack using array.

```
#include<stdio.h>
#include<stdlib.h>
#define size 3
int top=-1
int stack[SIZE];
void push(int ele)
{
if (top==size-1)
 {
  printf("The stack is full\n");
 }
  else
  {
   top++;
   stack[top]=ele;
   }
}
int pop()
{
 if (top==-1)
 {
    return 0;
 }
else
```

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```
{
printf("element removed is : %d\n", stack[top--]);
return 1;
}
}

void display()
{
if(top==-1)
printf("The stack is empty\n");
else
{
printf("The elements are\n");
for(int i=0; i<=top; i++)
{
printf("%d\n", stack[i]);
}
}
}

int main()
{
int c,d,p;
while(c!=4
{
printf("Enter command\t 1-push\t 2-pop\t
3-Display\t 4- Exit\n");
scanf("%d", &c);
switch(c)
{
case 1: printf("Enter an element\n");
```

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```
        scanf("%d", &d);
        push(d);
        break;
case 2: p = pop();
        if (p == 0)
        printf("stack is empty\n");
        else
        printf("\n Element removed successfully\n");
        break;
case 3: display();
        break;
case 4: break;
  default: printf("Invalid input\n");
  }
  }
return 0;
}
```

---

o/p

```
Enter command 1-push 2-pop 3-Display 4-Exit
1
Enter an element
30
Enter command 1-push 2-pop 3-Display 4-Exit
1
Enter an element
20
Enter command 1-push 2-pop 3-Display 4-Exit
1
Enter an element
10
```

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DATE: PAGE:

Enter command 1-push 2-pop 3-Display 4-Exit
3

The elements are
30
20
10

Enter command 1-push 2-pop 3-Display 4-Exit
Enter an element
40

stack overflow

Enter command 1-push 2-pop 3-Display 4-Exit
1

Element removed is : 10
Enter an element
40
Stack
Element removed successfully

Enter command 1-push 2-pop 3-Display 4-Exit
2

Element removed is : 20
Element removed successfully

Enter command 1-push 2-pop 3-Display 4-exit
2

Element removed is : 30
Element removed successfully

Enter command 1-push 2-pop 3-display 4-Exit
2

Stack underflow

Enter command 1-push 2-pop 3-display 4-Exit
4.