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#include<stdio.h>
int a[100];
int SIZE;
int TOP=(-1),X,OP;
void push();
void pop();
void peep();
void display();
void main(){
    printf("Enter size of stack:");
    scanf("%d",&SIZE);
    do{
        printf("Menu:\n1.PUSH\t2.POP\t3.PEEP\t4.DISPLAY\t5.EXIT\nEnter your
choice:");
        scanf("%d",&OP);
        switch(OP){
            case 1:push();
                break;
            case 2:pop();
                break;
            case 3:peep();
                break;
            case 4:printf("Displaying Stack:\n");
                display();
                break;
            case 5:break;
            default:printf("Invalid choice");
        }
    }while(OP!=5);
}
void push(){
    if(TOP>=SIZE-1){
        printf("Stack Overflow\n");
    }
    else{
        printf("Enter element to PUSH:");
        scanf("%d",&X);
        TOP++;
        a[TOP]=X;
    }
}
void pop(){
    if(TOP<0){
        printf("Stack Underflow\n");
    }
    else{
        printf("%d\n",a[TOP]);
        TOP--;
    }
}
void peep(){
    printf("Enter position of element to view from top:");

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scanf("%d", &X);
if (TOP-X+1<0)
{
    printf("Stack Underflow\n");
}
else
{
    printf(" The %d element from the top is: %d \n", X, a[TOP-X+1]);
}
}
void display(){
    int i;
    for(i=TOP;i>=0;i--){
        printf("%d\n",a[i]);
    }
}

```

OUTPUT:

```

dl406@itadmin: ~/Desktop
dl406@itadmin:~/Desktop$ gcc expt1.c
dl406@itadmin:~/Desktop$ ./a.out
Enter size of stack:4
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:1
Enter element to PUSH:1
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:1
Enter element to PUSH:2
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:1
Enter element to PUSH:3
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:1
Enter element to PUSH:4
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:1
Stack OverFlow
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:2
4
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:3
Enter position of element to view from top:4
Stack UnderFlow
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:3
Enter position of element to view from top:1
The 1 element from the top is: 3
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:4
Displaying Stack:
3
2
1
Menu:
1.PUSH  2.POP   3.PEEP  4.DISPLAY  5.EXIT
Enter your choice:5
dl406@itadmin:~/Desktop$

```