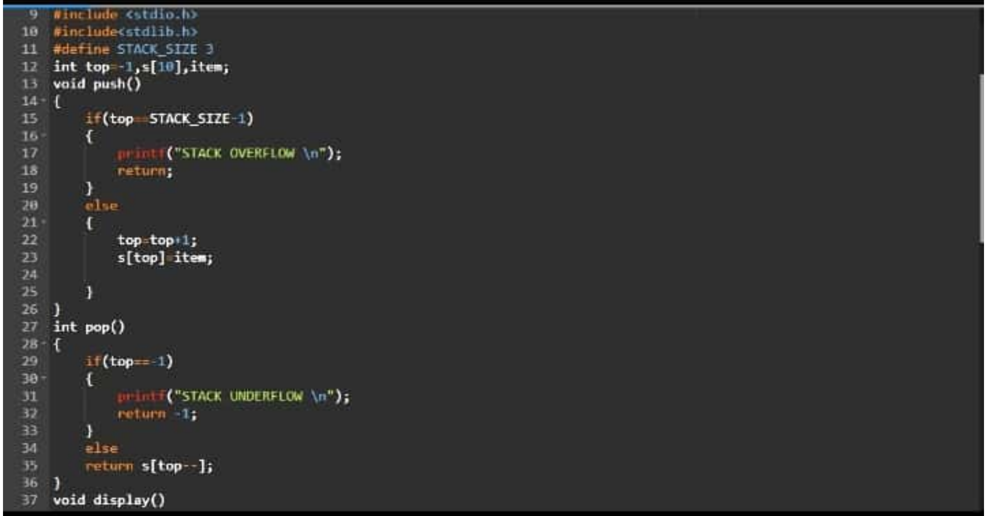
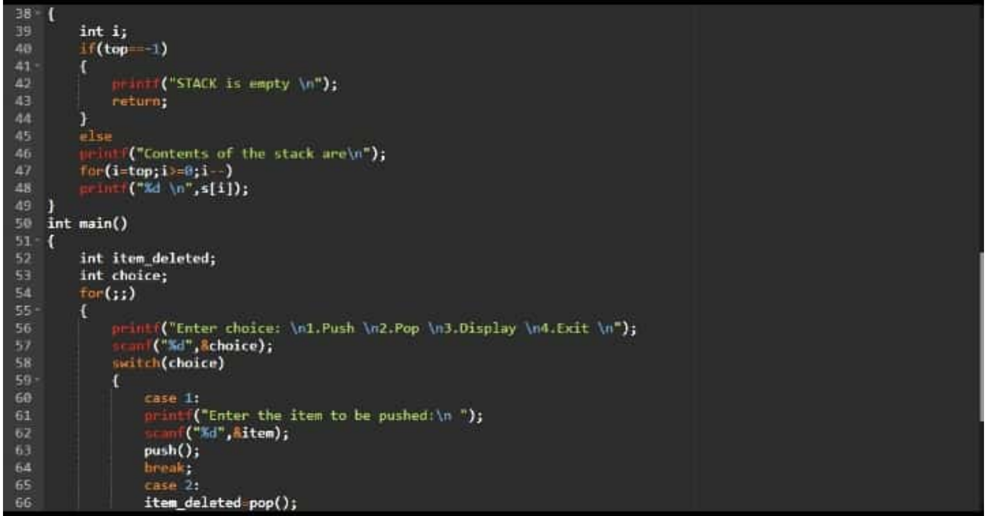
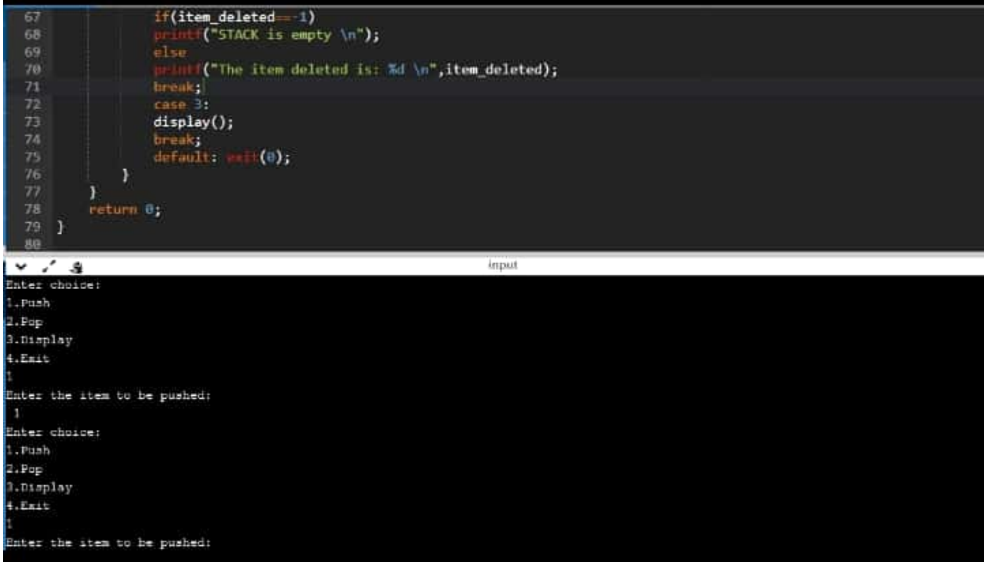


```c
#include <stdio.h>
#include<stdlib.h>
#define STACK_SIZE 3
int top=-1,s[10],item;
void push()
{
    if(top==STACK_SIZE-1)
    {
        printf("STACK OVERFLOW \n");
        return;
    }
    else
    {
        top=top+1;
        s[top]=item;

    }
}
int pop()
{
    if(top==-1)
    {
        printf("STACK UNDERFLOW \n");
        return -1;
    }
    else
    return s[top--];
}
void display()
```

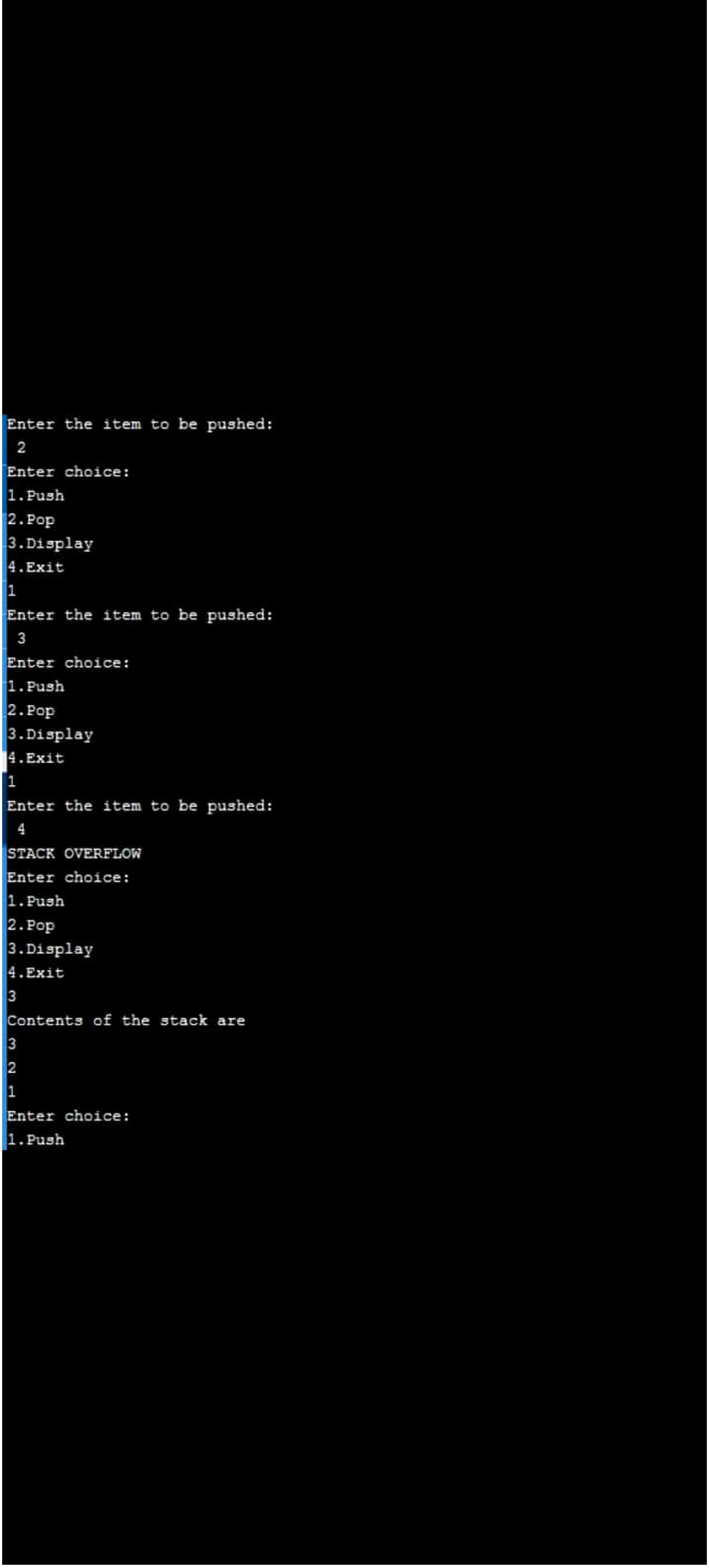


```c
{
    int i;
    if(top==-1)
    {
        printf("STACK is empty \n");
        return;
    }
    else
    printf("Contents of the stack are\n");
    for(i=top;i>=0;i--)
    printf("%d \n",s[i]);
}
int main()
{
    int item_deleted;
    int choice;
    for(;;)
    {
        printf("Enter choice: \n1.Push \n2.Pop \n3.Display \n4.Exit \n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:
            printf("Enter the item to be pushed:\n ");
            scanf("%d",&item);
            push();
            break;
            case 2:
            item_deleted=pop();
```

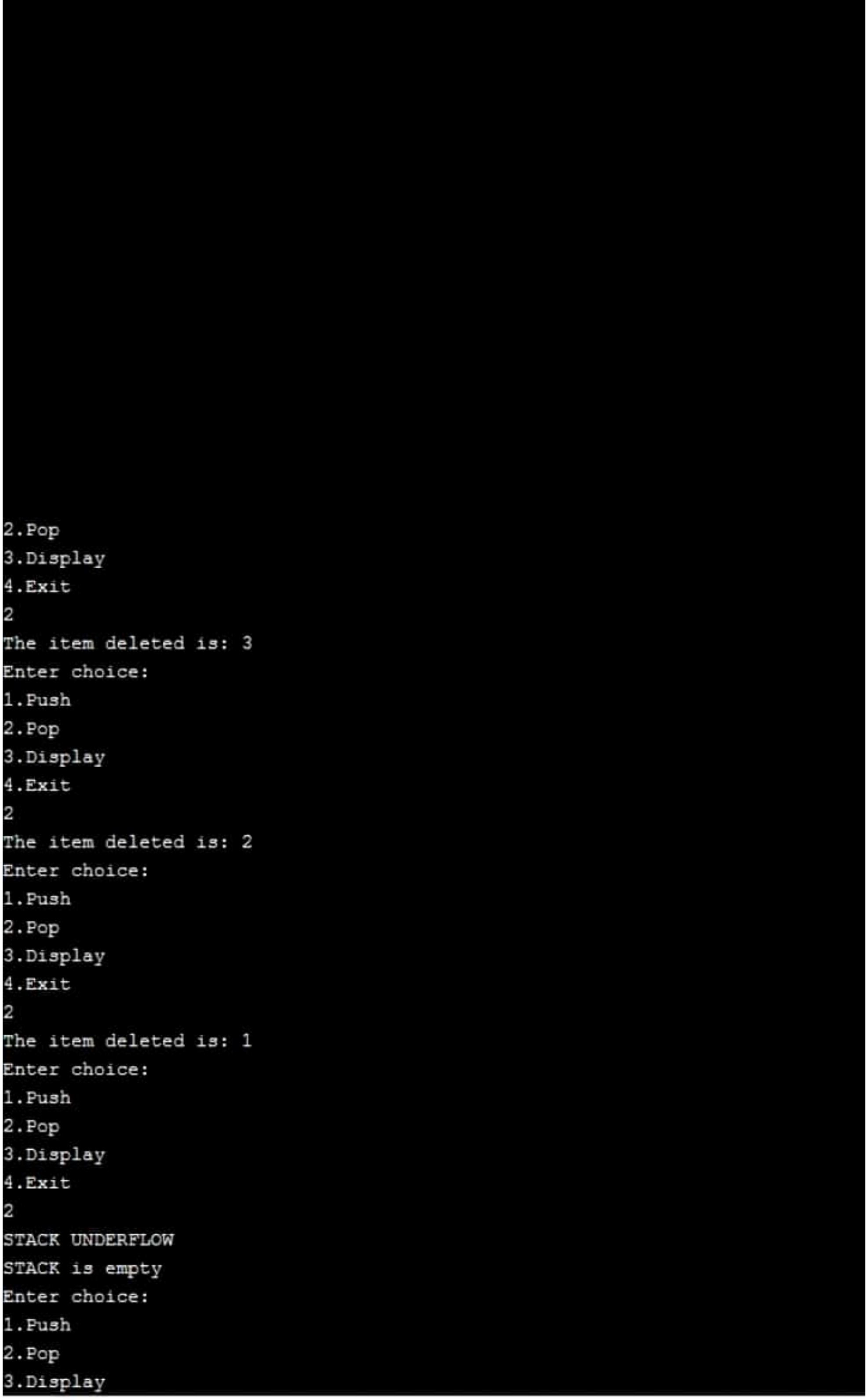


```c
            if(item_deleted==-1)
            printf("STACK is empty \n");
            else
            printf("The item deleted is: %d \n",item_deleted);
            break;
            case 3:
            display();
            break;
            default: exit(0);
        }
    }
    return 0;
}
```

```
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
1
Enter the item to be pushed:
 1
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
1
Enter the item to be pushed:
```



```
Enter the item to be pushed:
 2
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
1
Enter the item to be pushed:
 3
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
1
Enter the item to be pushed:
 4
STACK OVERFLOW
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
3
Contents of the stack are
3
2
1
Enter choice:
1.Push
```



```
2.Pop
3.Display
4.Exit
2
The item deleted is: 3
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
2
The item deleted is: 2
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
2
The item deleted is: 1
Enter choice:
1.Push
2.Pop
3.Display
4.Exit
2
STACK UNDERFLOW
STACK is empty
Enter choice:
1.Push
2.Pop
3.Display
```

WAP to simulate the working of Stack using an array with following a. push b.pop c. display .

```
#include <stdio.h>
#define STACK_SIZE 10
int top = -1, S[10], item;

Void push()
 {
  if (top == STACK_SIZE-1)
  {
   Printf("Stack overflow \n");
   return ;
   }
  ~~top = top-1~~
   else
      top = top + 1;
     S[top] = item;
   }
 int pop()
  {
  if (top == -1)
  {
   printf("Stack Underflow \n");
   return -1 ;
   }
  ~~item deleted~~ else
     ~~item deleted =~~ return S[top--];
     }

  Void display ()
   {
```

```
int i;
 if (top == -1)
  {
  printf ("Stack is empty /n");
   return;
  }
  else
    printf ("Contents in the stack /n");
     for (i=top ; i>=0; i--)
      printf ("%d", S[i]);
     }
 Void main ()
 {
 int item_deleted;
 int choice;
  for (;;)
   {
 printf ("Enter choice /n 1.Push /n 2.Pop /n
            3.display /n 4.exit /n);
 Scanf ("% d", & choice);

  Switch (choice)
       {
       Case 1:
                printf ("Enter the item to be pushed
                          /n");
               Scanf ("%d", & item);
               push ();
               break;
        case 2:  item_deleted = pop()
                 if (item deleted == -1)
                printf ("Stack is empty /n");
}
      else
      printf("The item deleted is : %d\n",
                  item_deleted);
          break;
case 3 : display ()
          break;
default : exit 0;
}
 }
 getch();
 }
```