Implementation of STACK using Array.

```
#include <stdio.h>
#include <stdlib.h>
#define size 3

int stack[size], Top = -1, item;
void push();    // function prototype
int pop();      // function prototype
void display(); // function prototype

// Main function
void main()
{

  int choice, del;

  while (1)
  {
    printf("\n1.PUSH\n2.POP\n3.DISPLAY\n4.EXIT\n");
    printf("Enter your choice\n");
    scanf("%d", &choice);

    switch (choice)
    {

    case 1:
      push();
      break;
```

```
      case 2:
        del = pop();
        printf("Popped element=%d\n", del);
        break;

      case 3:
        display();
        break;

      case 4:
        exit(0);
        break;

      default:
        printf("wrong choice");
      }
    }
}

// function to push element
void push()
{
   if (Top == size - 1)
   {
      printf("Stack Overflow\n");
      return;
   }
   else
   {
      printf("Enter an element\n");
```

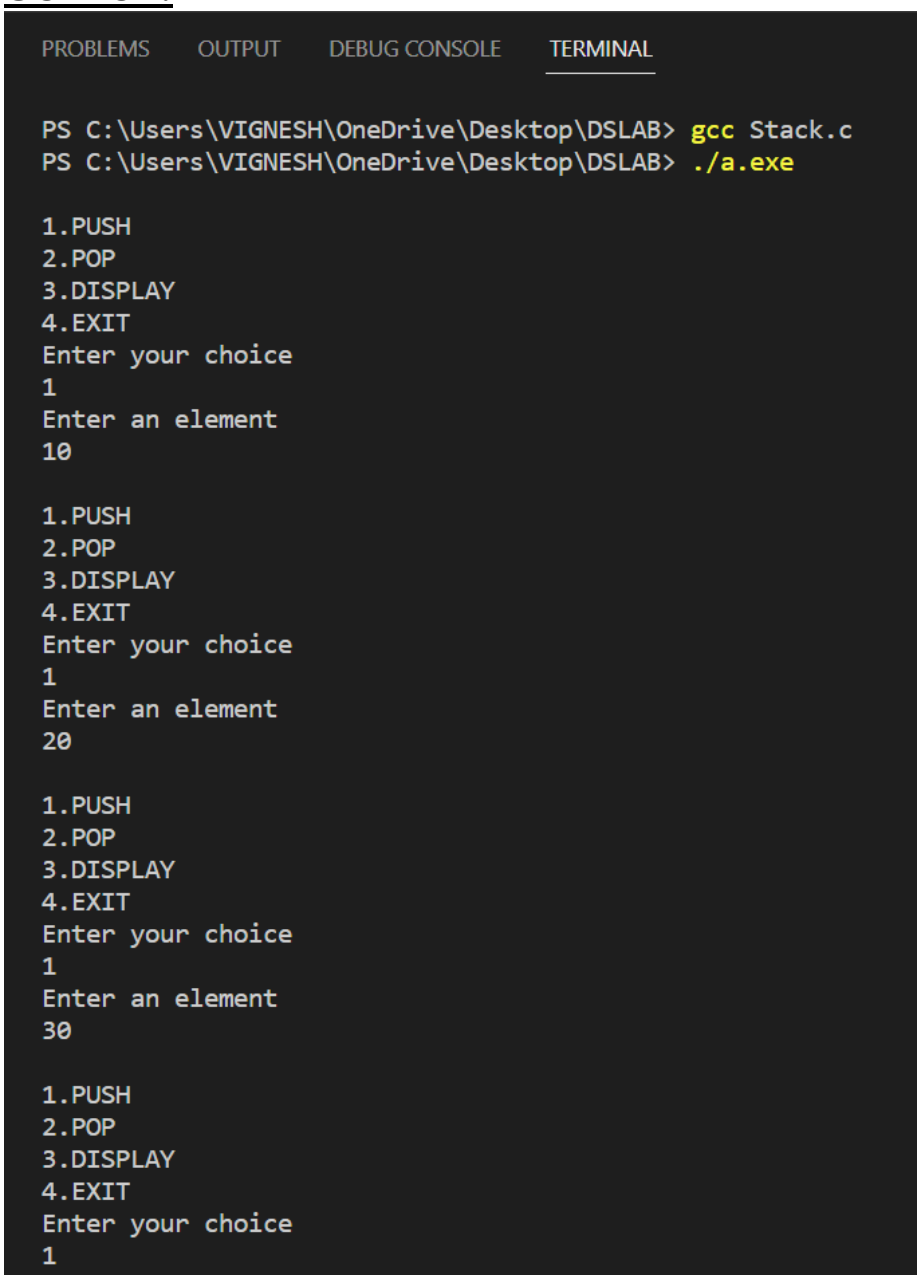
```
    scanf("%d", &item);
    Top = Top + 1;
    stack[Top] = item;
  }
}

// function to pop element
int pop()
{
  int x;
  if (Top == -1)
  {
    printf("Stack underflow\n");
    return 0;
  }
  else
  {
    x = stack[Top];
    Top = Top - 1;
    return x;
  }
}

// function to dislpay stack contents
void display()
{
  int i;
  if (Top == -1)
  {
    printf("Stack is empty\n");
```

```
    return;
  }
  else
  {
    printf("Stack Contents\n");
    for (i = Top; i >= 0; i--)
      printf("%d\n", stack[i]);
  }
}
```

OUTPUT:



```
Stack Overflow

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
3
Stack Contents
30
20
10

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
2
Popped element=30

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
2
Popped element=20

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
2
Popped element=10
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
3
Stack is empty

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your choice
4
PS C:\Users\VIGNESH\OneDrive\Desktop\DSLAB>
```