***Laboratory Act. No. 6 - Stacks***

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DSA – LAB (Wednesday)

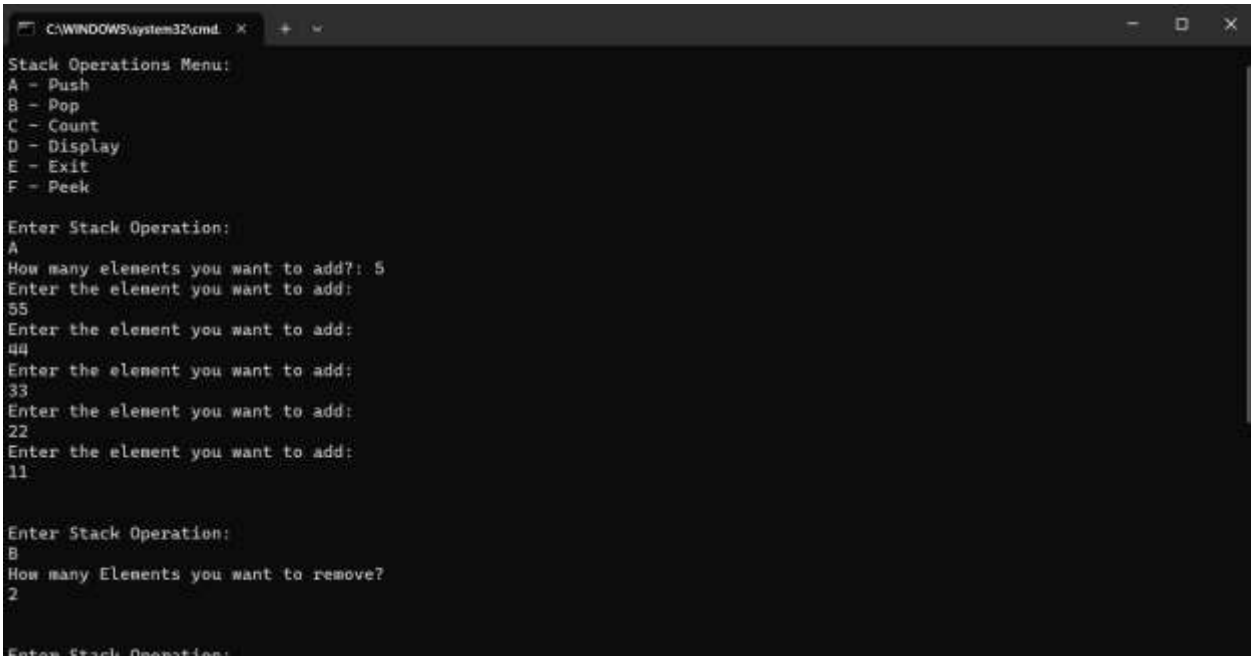
**Codes:**

```
using System;
using System.Collections;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Xml.Linq;

namespace StackMenu
{
    internal class Program
    {
        static void Main(string[] args)
        {
            Stack<int> myStack = new Stack<int>();

            while (true)
            {
                Console.WriteLine("Stack Operations Menu: ");
                Console.WriteLine("A - Push");
                Console.WriteLine("B - Pop");
                Console.WriteLine("C - Count");
                Console.WriteLine("D - Display");
                Console.WriteLine("E - Exit");
                Console.WriteLine("F - Peek");

                start:
                Console.WriteLine();
                Console.WriteLine("Enter Stack Operation: ");

                string menu;
                menu = Convert.ToString(Console.ReadLine());

                switch (menu)
                {
                    case "A":

                        int element1;
                        Console.Write("How many elements you want to add?: ");
                        element1 = Convert.ToInt32(Console.ReadLine());

                        for (int c = 1; c <= element1; c++)
                        {
                            Console.WriteLine("Enter the element you want to add:
");

                            int x = Convert.ToInt32(Console.ReadLine());
                            myStack.Push(x);
                        }
```

```
                        Console.WriteLine();

                        goto start;

                    case "B":

                        Console.WriteLine("How many Elements you want to remove? ");
                        int b = Convert.ToInt32(Console.ReadLine());

                        for (int y = 1; y <= b; y++)
                        {

                            myStack.Pop();
                        }
                        Console.WriteLine();

                        goto start;

                    case "C":

                        Console.WriteLine("The total number of elements is " +
myStack.Count());
                        Console.WriteLine();

                        goto start;

                    case "D":

                        Console.WriteLine("The elements in the stack are: ");
                        foreach (var x in myStack)
                        {
                            Console.WriteLine(x);
                        }
                        Console.WriteLine();

                        goto start;

                    case "E":

                        Environment.Exit(0);
                        break;

                    case "F":

                        Console.WriteLine("The topmost element in the stack is " +
myStack.Peek());
                        Console.WriteLine();

                        goto start;

                    default:
                        Console.WriteLine("Invalid Input");
                        Console.Clear();
                        goto start;
                }
            }
        }
    }
```

}

***Output:***


C:\WINDOWS\system32\cmd.
Stack Operations Menu:
A - Push
B - Pop
C - Count
D - Display
E - Exit
F - Peek
Enter Stack Operation:
A
How many elements you want to add?: 5
Enter the element you want to add:
55
Enter the element you want to add:
44
Enter the element you want to add:
33
Enter the element you want to add:
22
Enter the element you want to add:
11
Enter Stack Operation:
B
How many Elements you want to remove?
2


Enter Stack Operation:
C
The total number of elements is 3
Enter Stack Operation:
D
The elements in the stack are:
33
44
55
Enter Stack Operation:
F
The topmost element in the stack is 33
Enter Stack Operation:
E
Press any key to continue . . .