```
Enter your choice of operation 1-Push, 2-Pop, 3-Peek, 0-Exit : 1
Enter the element to be inserted: 3
Enter your choice: 3
3
Enter your choice: 4
Invalid choice
Enter your choice: 2
Enter your choice: 3
Stack is empty
Enter your choice: 1
Enter the element to be inserted: 10
Enter your choice: 1
Enter the element to be inserted: 50
Enter your choice: 2
Enter your choice: 2
Enter your choice: 2
Stack is empty
Enter your choice: 0
Exiting
Process returned 0 (0x0)   execution time : 48.658 s
Press any key to continue.
```

Lab - 1

Aim: Implement stack operations - push(), pop(), and peek() using an array.

Code:

```
#include <stdio.h>
#define N 10
int stack[N];
int top = -1;

void push(int x)
{
    if (top == N-1)
        printf("stack Overflow");
    else
    {
        top++;
        stack[top] = x;
    }
}
void pop()
{
    if (top == -1)
        printf("stack Underflow");
    else
        top--;
}
void peek()
{
    if (top == -1)
        printf("stack is empty");
    else
        printf("%d", stack[top]);
}
```

```
int main()
{
    int ch;
    printf("Enter your choice for the operation:"
                    1-push
                    2-pop
                    3-peek
                    0-exit");
    scanf("%d", &ch);
    while(ch!=0){
    switch(ch)
    {
        case 1:
            int x;
            printf("Enter the element to be pushed:");
            scanf("%d", &x);
            push(x);
            break;
        case 2:
            pop();
            break;
        case 3:
            peek();
            break;
        case 0:
            printf("Exiting");
            break;
        default:
            printf("Invalid Choice");
    }
    printf("Enter your choice:");
    scanf("%d", &ch);
    }
}
```

Output:

```
Enter your choice for the operation 1-Push 2-Pop 3-Peep
        0-Exit: 1
Enter the element to be pushed: 3
Enter your choice: 3
3
Enter your choice: 4
Invalid Choice
Enter your choice: 2
Enter your choice: 3
Stack is empty
Enter your choice: 1
Enter the element to be pushed: 10
Enter your choice: 1
Enter the element to be pushed: 50
Enter your choice: 2
Enter your choice: 2
Enter your choice: 2
Stack Underflow
Enter your choice: 0
Exiting
```

14/10/22