

## Report No: 1

**Report Name:** Write a stack program with push and pop function.

### Code:

```
#include <bits/stdc++.h>
using namespace std;

int top = -1;
#define size 5
int myArray[size];
// =====FUNCTION DECLEARATION=====
void pushFunction();
void popFunction();
void showFunction();
void endFunction();
void mainFunction();

int main(){
    mainFunction();
}

// =====PUSH OPERATION=====
void pushFunction(){
    system("cls");
    int value;
    if(top == size - 1){
        cout << "Stack is overflow";
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }else{
        top = top + 1;
        cout << "\nEnter " << top << " index element: ";
        cin >> value;
        myArray[top] = value;
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }
}

// =====POP OPERATION=====
```

```

void popFunction(){
    system("cls");
    int item;
    if(top == -1){
        cout << "Stack is overflow";
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }else{
        item = myArray[top];
        cout << "\n" << item << " Element is deleted successfully & index num: " << top;
        top = top - 1;
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }
}

```

// =====SHOW OPERATION=====

```

void showFunction(){
    system("cls");
    if(top == -1){
        cout << "Stack is overflow";
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }
    for(int i = 0 ; i <= top ; i++){
        cout << "\n" << i << " index element is: " << myArray[i];
    }
    cout << "\nPress any key to continue";
    fflush(stdin);
    getchar();
    main();
}

```

// =====END OPERATION=====

```

void endFunction(){
    cout << "Your program is finished";
    exit(0);
}

```

```
// =====MAINFUNCTION OPERATION=====
void mainFunction(){
    system("cls");
    int choice;
    cout << "1. Insert element (Push)" <<endl;
    cout << "2. Deletion element (Pop)" <<endl;
    cout << "3. Show Function" <<endl;
    cout << "4. End operation" <<endl;
    cout << "Choice your option: ";
    cin >> choice;

    switch (choice)
    {
    case 1:
        pushFunction();
        break;

    case 2:
        popFunction();
        break;

    case 3:
        showFunction();
        break;

    case 4:
        endFunction();
        break;

    default:
        cout << "Something went wrong";
        cout << "\nPress any key to continue";
        fflush(stdin);
        getchar();
        main();
    }
}
```

**Output: First interface of program**

```
1. Insert element (Push)
2. Deletion element (Pop)
3. Show Function
4. End operation
Choice your option: 1
```

**Output: When we choice option 1 (Push)**

```
Enter 0 index element: 65
Press any key to continue
```

**Output: When we choice option 3 (show)**

```
0 index element is: 45
1 index element is: 65
2 index element is: 85
3 index element is: 69
4 index element is: 45
Press any key to continue
```

**Output: When we choice again option 1 (push)**

```
Stack is overflow
Press any key to continue
```

**Output: When we choice option 2 (pop)**

```
45 Element is deleted successfully & index num: 4
Press any key to continue
```

**Output: When we choice option 24(end)**

```
1. Insert element (Push)
2. Deletion element (Pop)
3. Show Function
4. End operation
Choice your option: 4
Your program is finished
PS Z:\CSE All File\4th Semester\Data Structure\4th Lab Report\Report code>
```