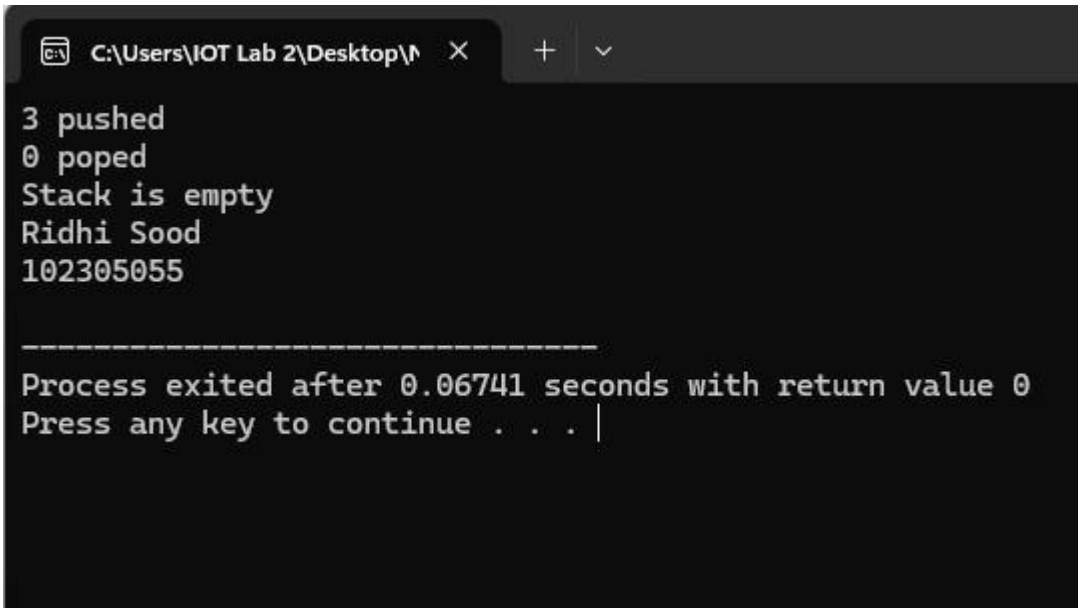
Q1 Implement stack operations (push, pop, peek) using arrays

```
#include<iostream>
using namespace std;
class stack{
        private:
                int top ;
                int arr[10];
        public :
                stack(){
                        top =-1;
                }
                void push(int value){
                        if(top==9){
                                cout<<"Overflow";
                        }
                        else{
                                arr[++top]==value;
                                cout << value << " pushed" << endl;
                        }
                }
                void pop(){
                        if(top==-1){
                                cout<<"underflow";
                        }
                        else{
                                cout<<arr[top--]<<" poped"<<endl;
                        }
                }
                void peek(){
                        if(top==-1){
                                cout<<"Stack is empty" << endl;
                        }
                        else{
                                cout<<arr[top]<<" top element"<<endl;
                        }
                }
};
int main(){
        stack s;
        s.push(3);
```

```
40.         s.pop();
41.         s.peek();
42.         cout << "Ridhi Sood" << endl;
43.         cout <<"102305055 " << endl;
44. }
```



Q2. Write a program to evaluate a postfix expression using a stack

```
1.  #include <iostream>
2.  #include <stack>
3.  using namespace std;
4.
5.  int evaluatePostfix(string exp) {
6.      stack<int> s;
7.
8.      for (char c : exp) {
9.          if (isdigit(c)) {
10.             s.push(c - '0');
11.         } else {
12.             int b = s.top(); s.pop();
13.             int a = s.top(); s.pop();
14.             if (c == '+') s.push(a + b);
15.             else if (c == '-') s.push(a - b);
16.             else if (c == '*') s.push(a * b);
17.             else if (c == '/') s.push(a / b);
18.         }
```

```
    }
    return s.top();
}

int main() {
    string postfix = "231*+9-";
    cout << "Result: " << evaluatePostfix(postfix) << endl;
    return 0;
}
```

Output

```
Result: -4
Ridhi Sood
102305055


=== Code Execution Successful ===
```