题号：

https://www.lanqiao.cn/problems/19877/learning 1星

什么是栈

栈（Stack）是一种 **后进先出（LIFO, Last In First Out）** 的线性数据结构，它只允许在一端（称为 **栈顶**）进行元素的插入和删除操作，而另一端（称为 **栈底**）是固定的。

模拟栈

```cpp
#include <bits/stdc++.h>
using namespace std;
int stk[100010];
int top=-1;
void push(int x){
  stk[++top]=x;
}
int empty(){
  return top==-1?1:0;
}
int query(){
  return stk[top];
}
void pop(){
  if(empty()) return;
  top--;
}
int main()
{
  int m;
  cin>>m;
  while(m--){
    string op;
    cin>>op;
    if(op=="push"){
      int x;
      cin>>x;
      push(x);
    }else if(op=="query"){
      if(empty()){
        cout<<"empty"<<"\n";
        continue;
      }
      cout<<query()<<"\n";
    }else if(op=="pop"){
      pop();
    }else{
      if(empty()) cout<<"YES\n";
      else cout<<"NO\n";
    }
  }
  return 0;
}
```

```java
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import java.util.Arrays;
import java.util.StringTokenizer;

public class Main{
    public static void main(String[] args) {
        int n=1;
        while(n-->0) solve();
        out.flush();
    }
    static int stk[]=new int[100010];
    static int top=0;
    static void push(int x){
      stk[++top]=x;
    }
    static void pop(){
      if(isEmpty()) return;
      top--;
    }
    static boolean isEmpty(){
      return top==0;
    }
    static void query(){
      if(isEmpty()){
        out.println("empty");
      }else{
        out.println(stk[top]);
      }
    }
    static void solve(){
        int m=in.nextInt();
        while(m-->0){
          String op=in.next();
          if(op.equals("push"))
          {
            int x=in.nextInt();
            push(x);
          }else if(op.equals("pop")){
            pop();
          }else if(op.equals("empty")){
            if(isEmpty()) out.println("YES");
            else out.println("NO");
          }else{
            query();
          }
        }
    }

    static FastReader in = new FastReader();
    static PrintWriter out=new PrintWriter(System.out);
    static class FastReader{
        static BufferedReader br;
        static StringTokenizer st;
        FastReader(){
            br=new BufferedReader(new InputStreamReader(System.in));
```

```
        }
        String next(){
            String str="";
            while(st==null||!st.hasMoreElements()){
                try {
                    str=br.readLine();
                } catch (IOException e) {
                    throw new RuntimeException(e);
                }
                st=new StringTokenizer(str);
            }
            return st.nextToken();
        }
        int nextInt(){
            return Integer.parseInt(next());
        }
        double nextDouble(){
            return Double.parseDouble(next());
        }
        long nextLong(){
            return Long.parseLong(next());
        }
    }
}
```

```
import os
import sys

L=[]
m=int(input())
for i in range(m):
  s=input().split()
  if s[0]=="push":
    L.append(s[1])
  elif s[0]=="pop":
    if len(L)!=0:
      L.pop()
  elif s[0]=="empty":
    if len(L)!=0:
      print("NO")
    else:
      print("YES")
  else:
    if len(L)!=0:
      print(L[-1])
    else:
      print("empty")
```