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CODE:

#include<bits/stdc++.h>

using namespace std;

class node{

    public:

    int data;

    node \*up, \*down;

    node(int d){

        data = d;

        up = down = NULL;

    }

};

class Stack{

    private:

        node \*top;

    public:

        Stack(){

            top = NULL;

        }

        void push(int d){

            // Empty stack

            if (top == NULL){

                top = new node(d);

            }

            else{

                while(1){

                    if (top->up == NULL)

                        break;

                    top = top->up;

                }

                top->up = new node(d);

                top->up->down = top;

                top = top->up;

            }

        }

        bool checkEmpty(){

            if (top == NULL) return true; else return false;

        }

        int pop(){

            // Check for empty before calling this function

            int data = top->data;

            // Decrement top by once

            top = top->down;

            top->up = NULL;

            return data;

        }

};

int main(){

    Stack \*s;   // s is an array of stack

    int data, c, current, count;

    cout<<"Enter the number of stacks you need:\n";

    cin>>count;

    s = new Stack[count];

    while(1){

        cout<<"1. Select a stack first\n2. Exit\n";

        cin>>c;

        switch(c){

            case 1:

                cout<<"Enter the stack number:\n";

                cin>>current;

                if(current > count){

                    cout<<"Enter valid number for stack\n";

                    continue;

                }

                current--;

                break;

            case 2:

                exit(1);

            default:

                cout<<"Enter valid choice.\n";

                continue;

        }

        cout<<"1. Push\n2. Pop\n3. Exit\n\n";

        cin>>c;

        switch(c){

            case 1:

                cout<<"Enter the element to push\n";

                cin>>data;

                s[current].push(data);

                break;

            case 2:

                if(!s[current].checkEmpty())

                    cout<<"The popped element is: "<<s[current].pop()<<endl;

                else

                    cout<<"This stack is empty\n";

                break;

            case 3:

                exit(1);

            default:

                cout<<"Enter valid choice.\n";

        }

    }

}

