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Batch--- B2

TUT 3 – Set of Stacks

Code –

**#include <iostream>**

**#include <vector>**

**#include <stack>**

**using namespace std;**

**int main()**

**{**

**int capacity, choice;**

**vector<stack<int>> SetofStacks;**

**cout << "Enter the capacity of each stack: ";**

**cin >> capacity;**

**while (true) {**

**cout<<"Welcome to the Set of Stacks!!";**

**cout << "\n1. Push element onto the set of stacks";**

**cout << "\n2. Pop element from the set of stacks";**

**cout << "\n3. Display all stacks";**

**cout << "\n4. Display top element";**

**cout << "\n5. Quit";**

**cout << "\nEnter your choice: ";**

**cin >> choice;**

**switch (choice) {**

**case 1: {**

**int value;**

**if (SetofStacks.empty() || SetofStacks.back().size() == capacity) {**

**SetofStacks.push\_back(stack<int>());**

**}**

**cout << "Enter the element to be pushed: ";**

**cin >> value;**

**SetofStacks.back().push(value);**

**break;**

**}**

**case 2: {**

**if (SetofStacks.empty()) {**

**cout << "The set of stacks is empty!\n";**

**}**

**else {**

**SetofStacks.back().pop();**

**if (SetofStacks.back().empty()) {**

**SetofStacks.pop\_back();**

**}**

**}**

**break;**

**}**

**case 3: {**

**if (SetofStacks.empty()) {**

**cout << "The set of stacks is empty!\n";**

**}**

**else {**

**for (auto &s : SetofStacks) {**

**stack<int> temp = s;**

**cout << "Stack:";**

**while (!temp.empty()) {**

**cout << " " << temp.top();**

**temp.pop();**

**}**

**cout << endl;**

**}**

**}**

**break;**

**}**

**case 5: {**

**cout << "Quitting program...\n";**

**return 0;**

**}**

**case 4:**

**{**

**cout<<"The element at the top is: "<<SetofStacks.back().top()<<endl;**

**break;**

**}**

**default: {**

**cout << "Invalid choice, please try again.\n";**

**break;**

**}**

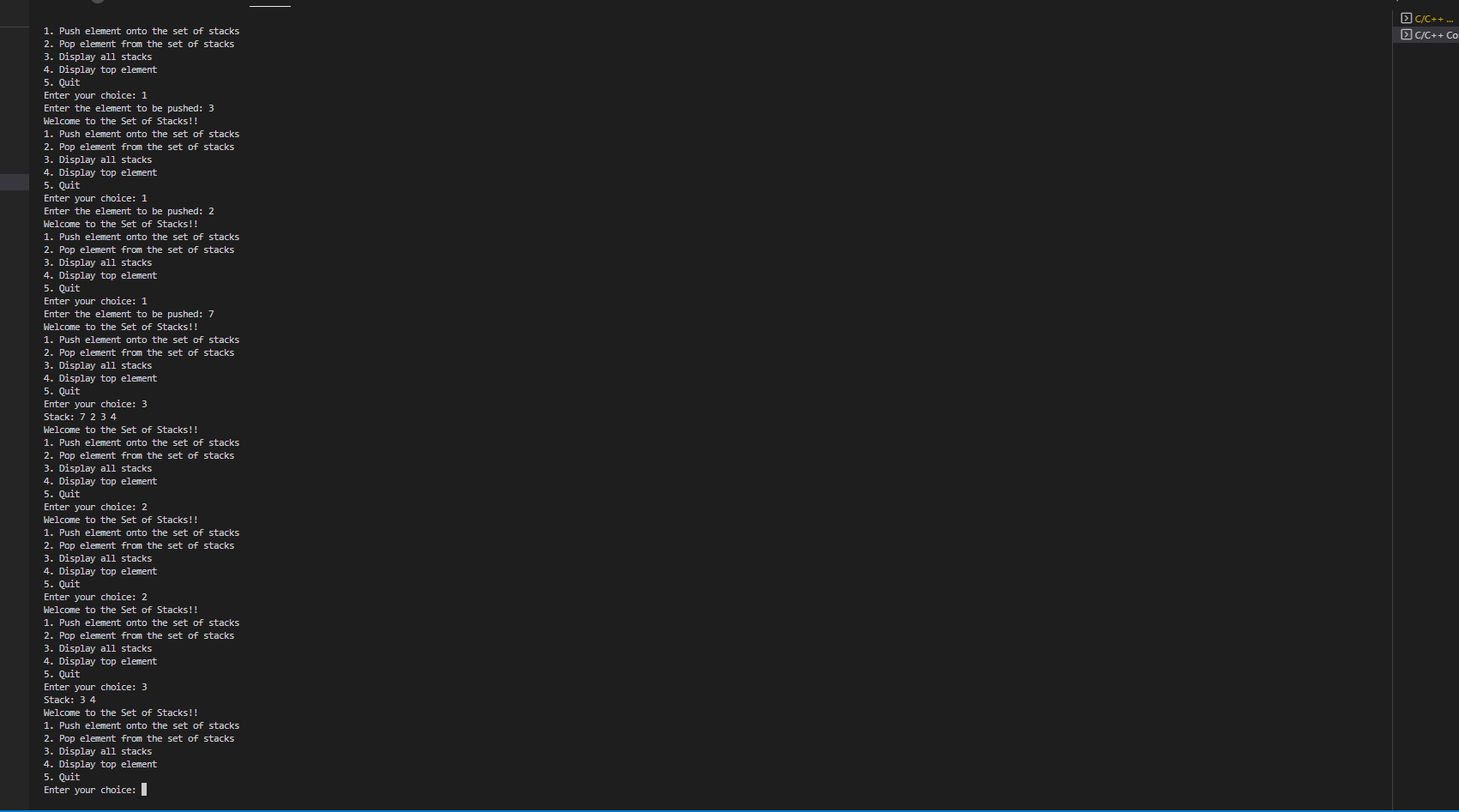
**}**

**}**

**return 0;**

**}**

**Output : -**

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