NAME – RAJDEEP JAISWAL **DATE – 10 Oct 2021**

BRANCH – BTECH CSE **SEC = 13 A**

UID -20BCS2761

SUB- DS LAB Worksheet

Write a program to input two stacks and compare their contents.

Solution

Algorithm –

1.Take a flag variable and set it to true initially, *flag = true*. This variable will indicate whether the stacks are same or not.
2.First check if the size of given **stack1** and **stack2** are equal. If the size is not equal, set flag to false and return it.
3.If the size is same, then compare the top elements of both of the given stacks.
4.If the top of both stacks is **NOT** same, set flag to false and return it otherwise pop top elements of both stacks.
5.Repeat step 3 and 4 until all elements are popped out from both of the stacks.
6.If both stacks gets empty and the flag variable is still true, it means that the stacks are same.

Code In text Forms –

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

bool isSameStack(stack<string> stack1, stack<string> stack2)
{
	// Create a flag variable
	bool flag = true;


	if (stack1.size() != stack2.size()) {
		flag = false;
		return flag;
	}


	while (stack1.empty() == false) {
		// If the top elements of both stacks
		// are same
		if (stack1.top() == stack2.top()) {
			// Pop top of both stacks
			stack1.pop();
```

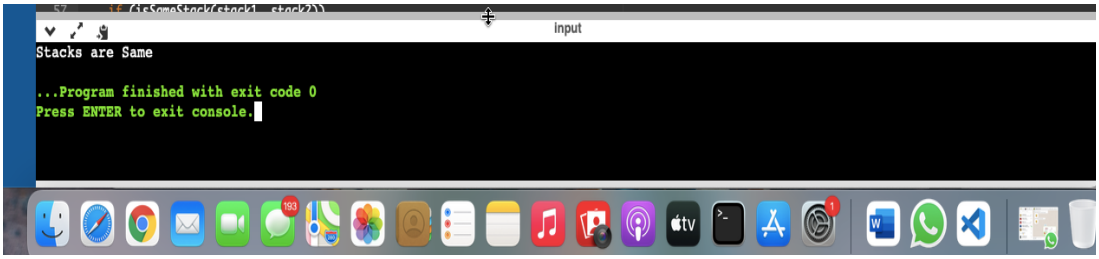
```
                        stack2.pop();
                }
                else {

                        flag = false;
                        break;
                }
        }

        // Return flag
        return flag;
}

// Driver Code
int main()
{
        // Creating stacks
        stack<string> stack1;
        stack<string> stack2;

        // Inserting elements to stack1
        stack1.push("Rajdeep");
        stack1.push("18");
        stack1.push("Chandigarh University");
        stack1.push("Welcomes");
        stack1.push("You");

        // Inserting elements to stack2
        stack2.push("Rajdeep");
        stack2.push("18");
        stack2.push("Chandigarh University");
        stack2.push("Welcomes");
        stack2.push("You");

        if (isSameStack(stack1, stack2))
                cout << "Stacks are Same";
        else
                cout << "Stacks are not Same";

        return 0;
}
```

Code In Compiler –

main.cpp

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

bool isSameStack(stack<string> stack1, stack<string> stack2)
{
    // Create a flag variable
    bool flag = true;


    if (stack1.size() != stack2.size()) {
        flag = false;
        return flag;
    }


    while (stack1.empty() == false) {
        // If the top elements of both stacks
        // are same
        if (stack1.top() == stack2.top()) {
            // Pop top of both stacks
            stack1.pop();
            stack2.pop();
        }
        else {

            flag = false;
            break;
        }
    }

    // Return flag
    return flag;
}

// Driver Code
int main()
{
    // Creating stacks
    stack<string> stack1;
    stack<string> stack2;

    // Inserting elements to stack1
    stack1.push("Rajdeep");
    stack1.push("18");
    stack1.push("Chandigarh University");
    stack1.push("Welcomes");
    stack1.push("You");

    // Inserting elements to stack2
    stack2.push("Rajdeep");
    stack2.push("18");
    stack2.push("Chandigarh University");
    stack2.push("Welcomes");
    stack2.push("You");

    if (isSameStack(stack1, stack2))
        cout << "Stacks are Same";
    else
        cout << "Stacks are not Same";

    return 0;
}
```

OUTPUT


input
Stacks are Same
...Program finished with exit code 0
Press ENTER to exit console.

Learning outcomes (What I have learnt):

1.

2.

3.

4.

5.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			