DSA Lab

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Bahria University

**Lab # 2**

**Stack Implementation**

LAB Journal

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**Lab 2: Stack Implementation**

**TASK:**

TO check that is the given string is a Palindrome or Not.

**Lab Task GitHub Link:**

[Link](https://github.com/iasimkhan2005/DSA.git)

**CODE:**

#include<iostream>

using namespace std;

//Stack Implementation

class stack{

private:

char\* arr;

int top;

int size;

public:

stack(int n){

top = -1;

size = n;

arr = new char[size];

}

void push(char x){

if(top == size - 1){

cout<<"Stack is full"<<endl;

}

else{

arr[++top] = x;

}

}

char pop(){

if(top == -1){

cout<<"Stack is empty"<<endl;

}

else{

char ch;

ch = arr[top];

top--;

return ch;

}

}

int Top(){

return arr[top];

}

bool Isempty() {

if (top == -1) {

return true;

}

else {

return false;

}

}

bool Isfull()

{

if (top == size-1) {

return true;

}

else {

return false;

}

}

void display() {

for (int i = 0; i <= top; i++) {

cout << arr[i] << endl;

}

}

};

//Input Function

string input() {

string str;

cout<<"Enter the string: ";

cin>>str;

return str;

}

//Compare Function

void compare(string Str,string Str1){

if (Str == Str1) {

cout << "The string is palindrome" << endl;

}

else {

cout << "The string is not palindrome" << endl;

}

}

int main()

{

string letter = input();

int strlen = letter.length();

stack Str (strlen), Str1(strlen);

string Reverse;

letter.erase(remove\_if(letter.begin(), letter.end(), isspace), letter.end()); //Removing the spaces from the string

//Pushing the Given string into the 1st stack

for (int i = 0; i < strlen; i++) {

Str.push(letter[i]);

}

//Popping the Characters of string from 1st stack and pushing it into 2nd stack

for (int i = 0; i < strlen; i++)

{

char ch;

ch = Str.pop();

Str1.push(ch);

if (ch != '\0') {

Reverse += ch;

}

}

compare(letter,Reverse);

}

**OUTPUT:**

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