

## Question2.cpp

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1 // <----Lab 05 - Stacks---->
2
3 // Q2. A palindrome is a word, phrase, number, or another sequence of characters that reads
4 // the same backward and forwards. Can you determine if a given string, s, is a palindrome? Write a
5 // Program using stack for checking whether a string is palindrome or not.
6
7 #include<iostream>
8 #include<string>
9
10 using namespace std;
11
12 class stack {
13     char arr[20];
14     int top=-1;
15 public:
16     stack() {
17         for(int i=0; i<20; i++) {
18             arr[i]=0;
19         }
20     }
21     bool full() {
22         return top==19;
23     }
24     bool empty() {
25         return top==-1;
26     }
27
28     void push(char value) {
29         if(!full()) {
30             top++;
31             arr[top]=value;
32         } else {
33             cout<<"Array is Full.\n";
34             return;
35         }
36     }
37     char pop() {
38         if(!empty()) {
39             char temp = arr[top];
40             top--;
41             return temp;
42         } else {
43             cout<<"Array is Empty.\n";
44             return -1;
45         }
46     }
47     void display() {
48         cout<<"\n--";
49         for(int i=0; i<=top; i++) {
50             cout<<arr[i];
51         }
52         cout<<"--\n";
```

```
53     }
54 };
55
56 bool checkp(string s) {
57     stack word;
58     for(int i=0; i<s.length(); i++) {
59         word.push(s[i]);
60     }
61     string reversed="";
62     for(int i=0; i<s.length(); i++) {
63         reversed+=word.pop();
64     }
65     return s==reversed;
66 }
67
68 int main() {
69     string str;
70     cout<<"Enter String to check for palindrome:\n";
71     getline(cin,str);
72     if(checkp(str)) {
73         cout<<"String is Palindrome\n";
74     } else {
75         cout<<"String is NOT Palindrome\n";
76     }
77 }
```