

```
Script started on 2023-12-07 23:13:01-06:00 [TERM="xterm" TTY="/dev/pts/12" COLUMN=]
ee43254@ares:~$ pwd
/home/students/ee43254
ee43254@ares:~$ cat palindrome.info
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```

Class: CSC121-001

Activity: So, why isn't the word palindrome one, anyway?

Level: 4, 2.5 (base program), 1.5 (function writing)

Description:

The user inputs an word they want to check whether or not it is a palindrome.

The program takes the word input and checks if it is a palindrome returning true if it is, and false if it is not.

```
ee43254@ares:~$ show-code palindrome.cpp
```

palindrome.cpp:

```
1  #include <iostream>
2  #include <string>
3
4  using namespace std;
5
6  bool isPalindrome(string str) {
7      for(short i = 0; i < static_cast<short>(str.length())/2; i++) {
8          if(tolower(str[i]) != tolower(str[static_cast<short>(str.length()
9              {
10                 return false;
11             }
12         }
13         return true;
14     }
15
16     int main() {
17         string input;
18
19         cout << "Enter any text: ";
20         cin >> input;
21         if(isPalindrome(input)) {
22             cout << "The text you input is a palindrome.\n";
```

```
23         }
24         else{
25             cout << "The text you input is not a palindrome.\n";
26         }
27     }
```

```
ee43254@ares:~$ CPP palindrome
palindrome.cpp***
```

```
ee43254@ares:~$ ./palindrome.out
Enter any text: deed
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: radar
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: mom
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: Otto
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: 2112
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: racecar
The text you input is a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: kyle
The text you input is not a palindrome.
ee43254@ares:~$ ./palindrome.out
Enter any text: 1234
The text you input is not a palindrome.
ee43254@ares:~$ cat palindrome.tpq
```

1. How can you access individual characters within a string?

You can access individual characters within a string with a for-loop that iterates through every position of the string.

2. How can you tell how long a string's content is?

You can tell how long a string's content is by NAME_OF_STRING.length();

3. How can you tell that the characters at the beginning and end of a word are the same?

Using the for-loop, you can iterate through each element of the string and

compare it to the last element of the string. As the iterator gets larger, you approach the middle of the string.

4. What do you do with odd length words?

Eventually since every odd length word has a middle character, the for-loop will compare the middle element to itself which will always be equal and return true if the entire word is a palindrome.

5. How many characters do you have to look at to determine a word's

'palindromicness' if it contains 10characters? 11characters? ncharacters?

To determine whether a word is a palindrome or not, you only have to look at half of the word. So the algorithmic formula would be $n/2$.

6. Does your program consider 34743 a palindrome? Why/Why not?

Yes, my program considers 34743 a palindrome because even though it might be a short data type, it considers it a string and compares each casted number as a string to which it compares and finds equal. ee43254@ares:~\$ e;

exit

Script done on 2023-12-07 23:13:58-06:00 [COMMAND_EXIT_CODE="0"]