CS151 – Lab 7

I Palindrome I[[1]](#footnote-2)

In this lab exercise, we will look at stacks and queues in a bit more detail than explored in the last two lectures.

# Part 1 – Making a Stack

Download the interface, application file, and implementation for the class stack found on Laulima. Run the program with the words Interface, Application, and Implementation. What are the results for each?

Interface: ecafretnI

Application: noitacilppA

Implementation: noitatnemelpmI

# Part 2

Create a new program for the queue class. The header file and application code for the queue class is located on Laulima. After you have implemented the program, run the program with the words Interface, Application, and Implementation.

Interface: You entered:: Interface

Application:You entered:: Application

Implementation: You entered:: Implementation

# Part 3

Now that you have both a stack and a queue, you will create a new application program that uses both of them.

A palindrome is a word, phrase, verse, or sentence that reads the same backward or forward. Create a program that uses your stack and queue structure to test whether or not an item entered by the user is a palindrome[[2]](#footnote-3).

Examples:

* “Able was I ere I saw Elba.”
* “I prefer Pi”
* “Parcel bare ferret up mock computer-referable crap.”
* Racecar

What tests did you run? What were the results?

My program is case sensitive so none of the above examples would work. Some required removing the capital letters and special characters, and some required removing the spaces. If I did that, then all of the above examples worked. I also tested “A man a plan a canal Panama”, although I had to enter it as “amanaplanacanalpanama” for it to work.

# Part 4

Find out who is credited with inventing the Palindrome. What happened to him? What is aibohphobia?

The Palindrome was first quipped in the 17th century by playwright Ben Jonson, before h's were invented. He was a comedic writer and he eventually had a series of strokes that caused his health (and career) to fail, he was basically 17th century Benny Hill. Aibohphobia is a fear of palindromes, it's also a palindrome. Proving that like the fear of long words (or hippopotomonstrosesusquipedaliophobia), it's a total piss take...

Submit your final code along with the answers to parts 1, 2, 3 and 4 using the assignment link on Laulima.

1. See <https://www.youtube.com/watch?v=8DAnHlOLAn0> for the meaning of the lab title and a bit of additional nerd culture. [↑](#footnote-ref-2)
2. You may have to eliminate spaces to get this to work correctly for multiple word palindromes, but your program should definitely work with single words. . [↑](#footnote-ref-3)