User Manual: Palindrome Checker

Kyle O'Brien (CSC), Brandon Hettler (CIS)

<u>Last Modified</u>: Saturday, April 20th 2019

Description:

The Palindrome Checker is a simple, easy to use program based in Java that will allow the user to input word(s) (a string) to identify whether or not it is a palindrome. The server identifies this by sending a "true" or "false" back to the client. A palindrome is defined by Dictionary.com as:

"a word, line, verse, number, sentence, etc., reading the same backward as forward, as Madam, I'm Adam or Poor Dan is in a droop."

<u>Installation Requirements:</u>

In order to install and run the Palindrome Checker, you will need to have the following pre-requisites installed on your computer:

- Java SDK *(Latest Version -* https://www.java.com/en/download/*)*

Download Latest Version: https://github.com/brandonh1996/palindrome-CIS419/releases
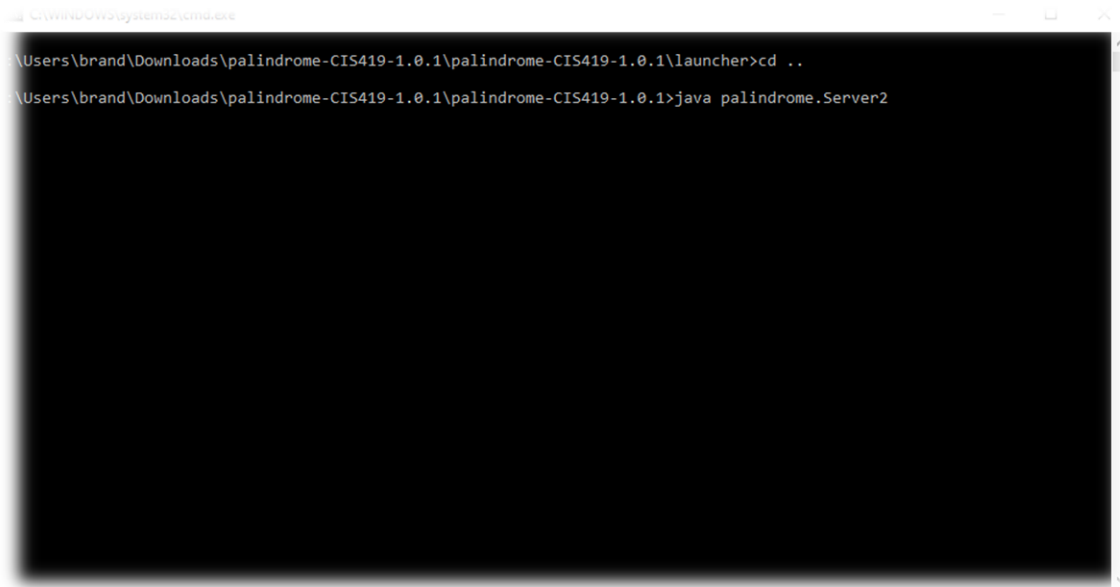
<u>Installation / How To Use Palindrome Checker:</u>

<u>DISCLAIMER:</u> *For the purposes of simplicity, these installation instructions will be described/demonstrated using a Windows 10 device and "localhost" as the server. However, this can be switched to be used on any system – Server changes may require slight coding modifications.*

1. After downloading the latest release of Palindrome Checker from GitHub, extract the zip file (e.g. **palindrome-CIS419-1.0.zip**).
2. Double-click on your extracted folder which should be labeled as **palindrome-CIS419-1.0** by default. In this folder, you may see another folder with the same name; Please double click on that one as well.
3. Upon doing so, you should see the folder(s) labeled as **launcher** and **palindrome**.

   NOTE: The method described below to launch Palindrome Checker will not work on SUNY - The College at Brockport computers due to Windows Firewall restrictions. You will need to launch this program in a Java Editor such as jGRASP, IntelliJ, or Eclipse if running on a school device.
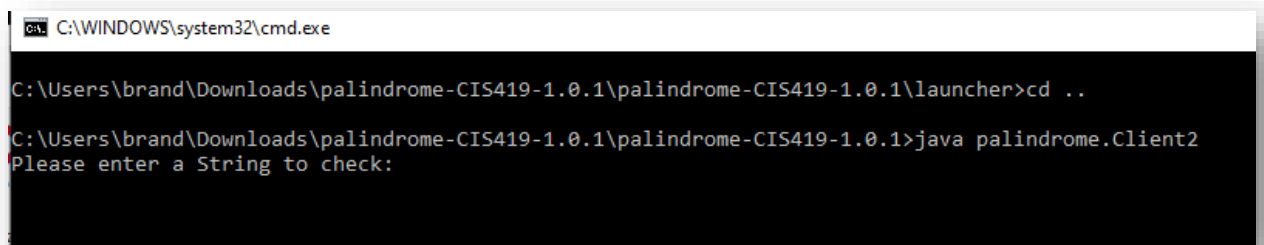
4. Double click on the **RunServer.bat** file to launch the Palindrome Checker Server. If you receive a Windows Defender/Smart Screen Warning, please click "More Info" and then click the "Run anyway" button – This program is safe.

This Command Prompt window is running the server and will not show any output. Please do not close this window as it will cause the server to stop running and in turn, the Palindrome Checker Client will not work.
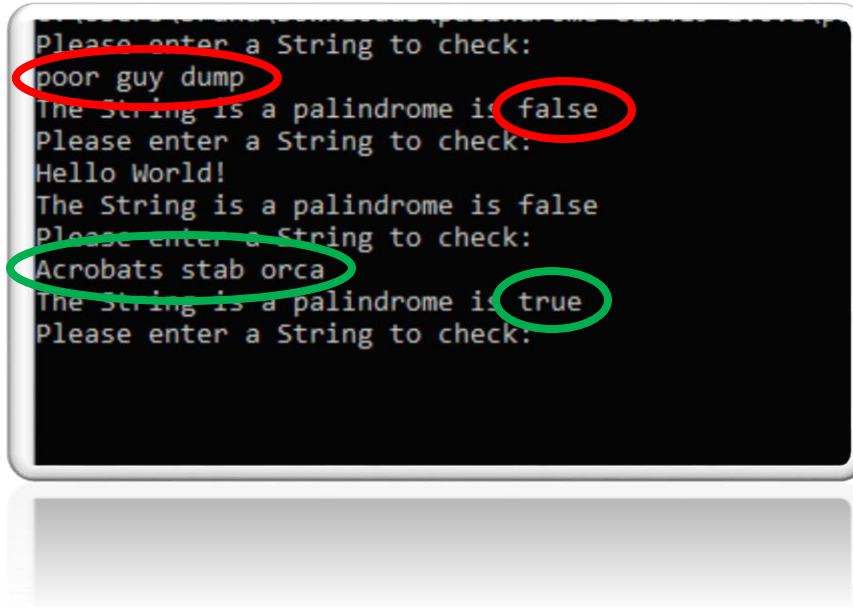
5. While leaving the Command Prompt Window (for the server) open, please double click on the **RunClient.bat** file to launch the Palindrome Checker Client. Again, if you receive a Windows Defender/Smart Screen Warning, please allow the program by clicking "More Info" followed by the "Run anyway" button – This program is safe.

The client will launch and ask for a string to check, similar to the picture below:

The program is now fully operational on your local computer. Please feel free to enter some strings to check whether it's a palindrome.

Sample Test Results:

Whenever you're ready to exit the program, simply enter an empty string (simply put, just hit enter) and the Client & Server will exit. If you are running the Client in a Java Editor such as jGrasp, you will notice the final output displayed is "Have a Nice Day"!

Changing the Client Server Connection:

If such a case occurs where you wish to run the Palindrome Checker Server on a remote host, you will need to modify a small line of code of the *Client2.java* file with an editor such as jGRASP.

```java
public class Client2 {
    static Socket s; //Client socket for connecting to the server
    static String server = "localhost"; //Use localhost by default
    static int serverPort = 1221; //Use port 1221 by default
```

Change "localhost" to your remote address or IP. For example, if I wanted to connect to my laptop computer (192.168.1.6), I would enter "192.168.1.6". Please note that the server variable in this program is a string, so the beginning & ending quotes MUST be left intact.

Use Case Scenarios:

The Palindrome Checker program has many applications in real life. Please find below some examples of use case scenarios:

- Billy is in 6th grade and was just assigned a homework assignment from his English Teacher on Palindromes. He is very confused as he doesn't understand what a Palindrome is exactly. After doing a Google Search, Billy finds the Palindrome Checker program, downloads it, and runs the server & client.

  He enters a few words and quickly notices the pattern. The words that the program indicates as a true palindrome read the same backward as they do forward. Billy ended up scoring a 100% on his homework assignment.

- The SUNY – College at Brockport IT Department runs the Palindrome Checker (Server) on their "courses.brockport.edu" server 24/7/365 for student, faculty, and staff usage. Their IT Department has installed the Palindrome Checker (Client) on all of the college owned computers. Students can quickly launch the client program and check if the strings they entered are palindromes or not.

  Since the implementation of the program, The College has received positive feedback as it helps quickly identify palindromes.

Additional Tests:

```
 ----jGRASP exec: java palindrome.Client2
Please enter a String to check:
Acrobats stab orca
The String is a palindrome is true
Please enter a String to check:
poor guy dump
The String is a palindrome is false
Please enter a String to check:
23454032
The String is a palindrome is false
Please enter a String to check:
A man, a plan, a cat, a ham, a yak, a yam, a hat, a canal-Panama
The String is a palindrome is true
Please enter a String to check:
As I pee, sir, I see Pisa
The String is a palindrome is true
Please enter a String to check:
Air an aria.
The String is a palindrome is true
Please enter a String to check:
123454321
The String is a palindrome is true
Please enter a String to check:
Was it a car or a cat I saw
The String is a palindrome is true
Please enter a String to check:

Have a Nice Day!

 ----jGRASP: operation complete.
```

*Client Connected to a Server
Running on Local Computer
(e.g. "localhost")*

Client Connected To Remote Server (courses.brockport.edu)

```java
19  public class Client2 {
20      static Socket s; //Client socket for connecting to the server
21      static String server = "courses.brockport.edu"; //Use localhost by default
22      static int serverPort = 1001; //Use port 1001 by default
23      static ObjectOutputStream oos = null;
24      static ObjectInputStream ois = null;
25      static BufferedReader br = null;
26
27      public static void main(String[] args) throws IOException, ClassNotFoundException {
```

Client2.java

| Compile Messages | jGRASP Messages | Run I/O | Interactions |

```
End
Clear
Help
        ----jGRASP exec: java palindrome.Client2
     Please enter a String to check:
  ▶▶ Acrobats stab orca
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ poor guy dump
     The String is a palindrome is false
     Please enter a String to check:
  ▶▶ 23454032
     The String is a palindrome is false
     Please enter a String to check:
  ▶▶ A man, a plan, a cat, a ham, a yak, a yam, a hat, a canal-Panama
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ As I pee, sir, I see pisa
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ Air an aria.
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ 123454321
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ Was it a car or a cat I saw
     The String is a palindrome is true
     Please enter a String to check:
  ▶▶ Cool!
     The String is a palindrome is false
     Please enter a String to check:
  ▶▶
     Have a Nice Day!
```

Client

bhett2@courses2016:src — □ ×

```
        courses2016.brockport.edu                                        #
                                                                         #
  Certain things (ssh keys, etc.) will need to be updated and is         #
  why you were (likely) prompted when you tried to connect.              #
                                                                         #
  If you are used to a particular service being available and not        #
  finding it now, put a ticket in through the helpdesk and we will       #
  work to make it available as soon as possible.                         #
                                                                         #
  Sorry for the inconvenience.                                           #
                                                                         #
  ################################################################
  bhett2@courses2016 ~]$ dir
  is419  public_html
  bhett2@courses2016 ~]$ ls
  is419  public_html
  bhett2@courses2016 ~]$ cd cis419
  bhett2@courses2016 ~/cis419]$ dir
  in  CSC419  src
  bhett2@courses2016 ~/cis419]$ cd src
  bhett2@courses2016 src]$ dir
  alindrome
  bhett2@courses2016 src]$ java palindrome.Server2
  bhett2@courses2016 src]$
```

Server

Testing Results:

As indicated in the project requirements, we performed several tests with our Palindrome Checker and have determined the following results:

String Entered	Result
Acrobats stab orca	True
poor guy dump	False
23454032	False
A man, a plan, a cat, a ham, a yak, a yam, a hat, a canal-Panama	True
As I pee, sir, I see Pisa	True
Air an aria.	True
12454321	True
Was it a car or a cat I saw	True

Reporting Issues:

If you notice any issues with the Palindrome Checker, please feel free to report them on the GitHub Project Repository under "Issues". We appreciate your feedback!

Project Repository: https://github.com/brandonh1996/palindrome-CIS419