

## CSIT 150 Lab5: Recursion

### Objectives

- Practice using recursion and iteration.
- Practice reading input from a file.

### General Requirements

In this lab, you must write your code following the proper programming style. The bottom line is:

- Use indentation to show the logical structure of your code
- Use blank line to separate code blocks and give each code block a comment
- Give documentation comment to the class and each method

### Programming Practice

1. Create a class named Lab5 following these requirements:
  - A **recursive** method named *palindrome*(String) which returns true if the String parameter is a palindrome. A palindrome is a word, phrase, or sentence that reads the same forward and backward, such as: noon, racecar, desserts I stressed. You will need to handle odd-length and even-length palindromes.
  - An **iterative** method named *palindromeIterative*(String) which does the same thing as the recursive method *palindrome*(String), but works iteratively.
  - A method that read lines of text as Strings from a file and then calls the palindrome method(s) to see if the String on the line was a palindrome or not.
  - Output all of the palindromes that were in the text file.
  - Output a count of all palindromes in the text file.
  - **Bonus:** output the palindromes in alphabetical order. (It is your choice how to store and sort these strings.)
  - Use JavaDoc to document this class appropriately.

FYI - This class uses all “static” methods.

## Lab 5: Recursion

Name(s): \_\_\_\_\_

### Evaluation

Requirement	Possible Points	Points Received	Comments
<b>Reading Strings from an input file.</b> The file provided is just a sample file. We may use a file with more or less words when grading.	4		
<b>Checking for a palindrome iteratively</b>	2		
<b>Checking for a palindrome recursively</b>	4		

Programming style	Possible Points	Points deducted	
Inconsistent indentation	<b>-1</b>		Indent at least 3 spaces inside each brace
Poor use of white space	<b>-1</b>		Too many or too few lines between statements
Heading documentation, includes programmer names, date, algorithm, basic purpose	<b>-2</b>		
All sources not cited (Remember to cite all code used, even class demo code.)	<b>-1</b>		
JavaDocs not used on each method	<b>-1</b>		
Poor variable names	<b>-1</b>		Should not start with uppercase. No single letter variables.
Poor structure/logic issues	<b>-2</b>		
<b>Program specifications</b>			
<b>Bonus:</b>			