

# TCSS143 Fundamentals of Object-Oriented Programming Theory and Application

## Programming Assignment #7

### 20 Points

This assignment will give you practice with Recursion. Here are the six problems: actual signatures for the six methods appear in the driver file, `RecursionProblems.java`

1. Sum positive integers in an array: Input is an array of integers. Return the sum of the positive values in the array.
2. Multiplication: input is two integers. Multiply the first by the second, using only recursive calls and the addition operator.
3. Strip leading whitespace from a string: input is a String. Return a String which is a substring of the original String, with leading whitespace removed.
4. Are there any primes in a numeric range? Input is two integers. Given a method that answers whether an integer is prime, this method answers whether there are any prime numbers in the specified range.
5. A palindrome is any word, phrase, or sentence that reads the same forward and backwards. Returns true if the String is a palindrome.
6. Returns the count of the number of times a specific character occurs in an array of characters.

(Your six methods **must solve** the problem using recursive method calls.)

You can also find some "driver" code that will allow you to test your solution.

### Submission and Grading:

There will be points taken off for not following the conventions listed in this document regarding submissions, outputs and naming conventions.

You are required to properly indent your code and will lose points if you make significant indentation mistakes. See the coding conventions document on the course web page for an explanation and examples of proper indentation.

Give meaningful names to methods and variables in your code. Localize variables whenever possible -- that is, declare them in the smallest scope in which they are needed.

Include a comment at the beginning of your program with basic information and a description of the program **and include a comment at the start of each method**. Your comments should be written in your own words and not taken directly from this document.

You should include a comment at the beginning of your program with some basic information and a description of the program, as in:

```
// Menaka Abraham
// 1/28/16
// TCSS 143
// Assignment #5
//
// This program will...
```

You should name your file `RecursionProblems.java` and you should turn it in electronically on the class web page. ***Please don't change method signatures. You may add helper methods if necessary.***