Homeworks for course COSC 1P03- Introduction to Data Structures

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Due: 31 May 2019

1- Write a recursive method to compare two strings: int compareTo(String s1, String s2). Remember, that compareTo returns

- a negative number if s1 < s2,
- 0 if s1 == s2, and
- a positive number if s1 > s2.

2- Write the following method
public static int toInt (String s)
recursively. It is like parseInt, but only for non-negative values
toInt("138") should return 138.

3- Write the following method
public static boolean equals (String s1, String s2)
recursively. Its recursive structure is like that of the equals methods for ints.

4- Write the following method
public static int compare (String s1, String s2)
recursively. Its recursive structure is similar to equals, above.

5- Write a recursive method int multiply(int a, int b) to multiply two positive integers together without using the * operator. To receive full credit, you algorithm must run in O(log a) time. (In other words, you may not just add a to itself b times.)

6- Write a recursive method int parseInt(String s). That returns the integer represented by s. Throw a NumberFormatException of s does not contain an integer.

7- try to find another recursive solution for the stars problem? Prove that it works and show if you seolution has better efficiency than the discussed solution in the class.