*2 submissions without penalty. 5pt reduction for every submission thereafter*

*Write your code in the file StringRec.java. For this problem, the following restrictions apply:*

* *YOUR CODE MUST BE RECURSIVE.*
* *Do not use loops (while, do/while, or for).*
* *Do not declare any variables outside of a method. You may declare local variables inside a method.*

*Complete the following method:*

*public static String decompress(String compressedText): Decompress the input text, which has been compressed using the RLE algorithm (previous hw assignment):*

*Run-length encoding (RLE) is a simple "compression algorithm" (an algorithm which takes a block of data and reduces its size, producing a block that contains the same information in less space). It works by replacing repetitive sequences of identical data items with short "tokens" that represent entire sequences. Applying RLE to a string involves finding sequences in the string where the same character repeats. Each such sequence should be replaced by a "token" consisting of:*

1. *the number of characters in the sequence*
2. *the repeating character*

*If a character does not repeat, it should be left alone.*

*For example, consider the following string:*

*qwwwwwwwwweeeeerrtyyyyyqqqqwEErTTT*

*After applying the RLE algorithm, this string is converted into:*

*q9w5e2rt5y4qw2Er3T*

*In the compressed string, "9w" represents a sequence of 9 consecutive lowercase "w" characters. "5e" represents 5 consecutive lowercase "e" characters, etc.*

*You may assume that the character counts will be single-digit numbers (a character will not repeat more than 9 times consecutively).*

*Hint #1: remember that characters are represented by numeric codes. You can decrement a character variable as follows:*

*char c = '7';*

*c--; // c will now hold the character '6'*

*Hint #2: You probably will not need to use this hint for this problem. However, a fast way to convert a digit character into the numeric value of the digit is to subtract the character code for the digit zero:*

*char c = '7'; // this has the character code 55, not 7*

*int x = c - '0'; // this produces the number 7*

*Scoring:   
50 points for Correct Solution   
50 points recursive solution*