Assignment 7 - Recursion

1. Find GCD of two numbers recursively.

2. Reverse a string

3. Write a recursive function – public String replace(String str, char ch1, char ch2) - that changes all occurrences of ch1 in str to ch2. For example, if str - "abcbad", and ch1 == 'a' and to == 'e', s would become "ebcbed".

4. Take a String input from user and return the String without the consecutive duplicates. For example, for input "aabccba" print "abcba". Use Recursion.

5. Given a string that contains a single pair of parenthesis, compute recursively a new string made of only of the parenthesis and their contents, so "xyz(abc)12345" yields "(abc)".

6. Given a string, return true if it is a nesting of zero or more pairs of parenthesis, like "(())" or "((()))".

   nestParen("(a+(b+c))") → true
   nestParen("((()))") → true
   nestParen("(((x))") → false

7. Given a number find number of numbers greater than the given number with same digits.
   1. When all digits are distinct. Eg number - 1342
   2. Duplicates can be there. Eg number – 15215

Bonus Problems

1. Print numbers from 1 to n in dictionary order. Eg for n = 1000 order will be
   1,10,100,1000,101,102…109,11,110,111,112….119,12,120,121 and so on.

2. Return an array of all possible strings of length k that can be formed from a set of n characters.
   Function prototype –returnStrings(String charSet, int k)
   Eg : Input - returnStrings(“xyz”, 2)
   Output – {“xx”, “xy”, “xz”, “yy”, “yz”, “yx”, “zz”, “zy”, “zx”}