Programming Assignment 4

i. **Convert a non-negative integer to its English words representation and print in reverse if total characters in English words are more than total words in a sentence.**

ii. **Given an input n, count the total number of digit 1 appearing in all non-negative integers less than or equal to n.**

For example:

Given n = 13,

Return 6, because digit 1 occurred in the following numbers: 1, 10, 11, 12, 13.

iii. Given an array, Rotate (shift left) an array of *n* elements to the right by *k* steps.

For example, with *n* = 7 and *k* = 3, the array [1,2,3,4,5,6,7] is rotated to [5,6,7,1,2,3,4].

After rotating the array add in into another array and display array index with minumum value.

iv. You are given an *n* x *n* 2D matrix representing an image.

Rotate the image by 180 degrees (anti-clockwise) but after sorting the n*n 2D array

v. Given a string containing just the characters '(' and ')', find the length of the longest and shortest valid (well-formed) parentheses substring.

For "(()", the longest valid parentheses substring is "()", which has length = 2.

Another example is ")()())", where the longest valid parentheses substring is "()()", which has length = 4.