Assignment 5

Deadline: 02/15/2020 11:59 pm

1. Giving a string, find the first non-repeating character in it and return its index.
   If it doesn't exist, return -1
   For example: "leetcode", return 0

2. Given a non-negative integer num, repeatedly add all its digits until the result has only one digit.
   For example: 38, return 2.
   Explanation: 3 + 8 = 11 → 1 + 1 = 2

3. Given an array nums, write a function to move all 0's to the end of it while maintaining the relative order of the non-zero elements.
   For example: [0, 1, 0, 3, 12] return: [1, 3, 12, 0, 0]

4. Given a string s, find the longest palindromic substring in s.
   You may assume that the maximum length of s is 1000.
   For example, input: "babad", return "bab", "aba" is also a valid answer, you only need to find one.

5. You are given an n x n 2D matrix representing an image. Rotate the image by 90 degrees (clockwise).
   For example: given input matrix = [[1,2,3],
   [4,5,6],
   [7,8,9]],
   rotate the input matrix in-place such that it becomes: [[7,4,1],
   [8,5,2],
   [9,6,3]],