Problem 5: Sorting

1. We have an array with n elements containing 0, 1 and 2. Write a C++ program that sorts the array in linear complexity.
2. You are given the ages of n persons in a country, where ages are integers in the interval [1,26]. Write a C++ program to sort the ages with a best possible complexity. What is your complexity?
3. Consider you have a list of n string of characters, for example: cab, bcd, axz, xwy, mpo, dcv.
    a. Consider that the length of all strings are same and equal to m. In this example, the length of each string is 3. Write a C++ program that modifies the mergesort or quicksort to sort this list. What is its complexity?
    b. Can you find a sorting method to sort an array of strings (with length m each) with better complexity? If yes, write a C++ program to implement it. What is its complexity?