Radix Sort on Strings

In the last classes you learnt about Radix Sort. It is a sorting algorithm which looks at the specific digits of an integer and sorts them in a stable manner.
In this exercise, you are required to apply the idea of Radix Sort for sorting strings, under the following assumptions,

1. There are n strings and every one of them is of length k.
2. The strings are composed of any printable characters, i.e. starting from ASCII value 32 to 126, any character could be there.
3. For comparison you can use the ASCII values of the characters.

Given the value of n, k and the strings themselve in an "input" array, you are required to implement Two versions of the Radix Sort algorithm with the following restrictions,

1. For the first version, you are allowed to declare only one "output" character array with the dimensions of "input" and a one-dimensional integer array with maximum dimension 100.
2. For the second version, you are only allowed to declare only one 1-dimensional integer array with maximum dimension 100.

Try revisiting the radix sort algorithm and think how it can be implemented within this constraints. You may consider that the number of strings (n) will be less than 2^{64} and length of each string is less than 10.

Notes:

- You are allowed to use the string library functions of C.
- The "input" array is already declared and populated in the template. The constraints on the two versions specifies the extra arrays that you can declare. You can declare as many individual variables as you like.
- Any new array that you create within the given constraints, should be created only once throughout the program (no declaration in recursive function) and may be reused.
- You can write as many auxalliary functions as you like.