Exercises: Radix Sorts

Warning: The hard deadline has passed. You can attempt it, but **you will not get credit for it**. You are welcome to try it as a learning exercise.

To specify an array or sequence of values in an answer, you must separate the values by a single space character (with no punctuation and with no leading or trailing whitespace). For example, if the question asks for the first ten powers of two (starting at 1), the only accepted answer is:

1 2 4 8 16 32 64 128 256 512

If you wish to discuss a particular question and answer in the forums, please post the entire question and answer, including the seed (which is used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

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Question 1

(seed = 395020)
Suppose that you run LSD radix sort on the following array of 10 fixed-length strings:

4143 2224 1143 1142 2421 4332 4321 4342 2221 1331

What is the array immediately after performing key-indexed counting for the second time?

Question 2

(seed = 626783)
Suppose that you run MSD radix sort (do not cutoff to insertion sort for small subarrays)
on the following array of 15 strings:

1223 4344 4212 4341 4432 3314 1241 1411 1441 2231 4434 2112 1233 4131 2122

What is the array immediately after performing key-indexed counting for the third time?

Question 3

(seed = 632347)
Suppose that you run 3-way radix quicksort (do not shuffle) on the following
array of 12 strings:

5385 6331 5853 5876 2516 4482 7388 3125 1435 7565 6826 2477

What is the array immediately after the first partitioning step?

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You cannot submit your work until you agree to the Honor Code. Thanks!