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Pledge: I pledge my honor that I have abided by the Stevens Honor System.

1) Consider an array containing the following 40 integers:

   5 2 4 4 0 1 6 7 3 1 1 0 5 1 5 4 4 5 7 0 6 1 0 7 5 2 7 6 5 3 7 0 5 5 7 1 1 2 6 5

   How many counters does CountingSort need to sort this array: ____8____

   Give the value of each counter after the array of counters has been fully initialized:

   0 1 2 3 4 5 6 7

   5 7 3 2 4 9 4 6

2) Consider an array containing the following 32 bit integers (written as hexadecimal values to save space):

   4EC1EEA9
   520B6E78
   1E90D74E
   52DB6E42
   5F05EF13
   74284442
   794E8117
   55526E42

   Imagine you are using a version of RadixSort that sorts on one byte at a time (so two hexadecimal digits) using a stable version of CountingSort. Write the content of the array after each of the four runs of CountingSort:

First Run

5F05EF13
794E8117
52DB6E42
74284442
55526E42
1E90D74E
520B6E78
4EC1EEA9

Second Run

74284442
52DB6E42
55526E42
520B6E78
1E90D74E
794E8117
4EC1EEA9
5F05EF13

Third Run

5F05EF13
520B6E78
74284442
794E8117
55526E42
1E90D74E
4EC1EEA9
52DB6E42

Fourth Run

1E90D74E
4EC1EEA9
520B6E78
52DB6E42
55526E42
5F05EF13
74284442
794E8117