1. Show the results of each of the passes of Shellsort using the increments of 7, 5, 3, and 1 with the initial list of values [16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1]. How many comparisons are done in total?

2. Trace the operation of count sort on the array A = [5, 6, 5, 1, 2, 1, 0, 4, 4, 6, 6]. In your answer, show the count array and the aux array as each item is inserted into the aux array. Also, show the final sorted array A.
3. Illustrate the operation of radix sort on the following list of English words: COW, DOG, SEA, RUG, ROW, MOB, BOX, TAB, BAR, EAR, TAR, DIG, BIG, TEA, NOW, FOX.

4. Explain how to sort \( n \) integers in the range 0 to \( n^2 - 1 \) in time proportional to \( n \).