1. Trace the execution of counting sort using the array \{4, 5, 0, 5, 3, 0, 1, 3, 5, 5\} as input.

2. Trace the execution of radix sort using the array \{158, 971, 957, 485, 800, 142, 422, 916, 792, 959\} as input.

3. Trace the execution of bucket sort using the array \{0.71, 0.03, 0.28, 0.05, 0.10, 0.82, 0.69, 0.32, 0.95, 0.03\} as input.

4. Suppose we know that the elements to sort are uniformly distributed in the range \([x_0, x_1]\). Modify bucket sort to still work in linear time in this case.

5. Suppose we know that the elements to sort are generated using a Gaussian distribution with mean \(\mu\) and standard deviation \(\sigma\). Modify bucket sort to still work in linear time in this case.