1. In the lectures and the lecture notes, we presented Counting Sort. We noted that because the final pass processes the input array from right to left, counting sort is a stable sorting algorithm.

Some implementations of Counting Sort that you might find on the internet process the input array from left to right in the final pass, rather than right to left. In essence, rather than using the control line on the final for loop as given in the lecture notes, which is as follows

\[
\text{for } i = n \text{ downto } 1
\]

they use the following control line on the final for loop

\[
\text{for } i = 1 \text{ to } n
\]

Give an example to show that if CountingSort is modified in this way, it is no longer a stable sorting algorithm. Explain why your example shows this.