CSE 310 Recitation 5

Objectives:

1. Exercise on counting sort

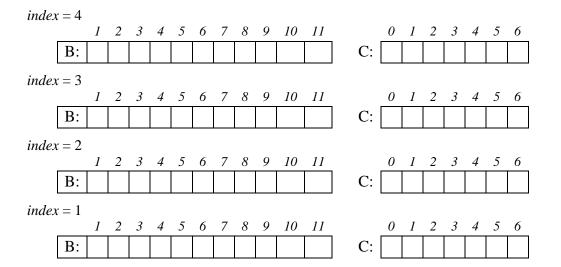
Instruction

- 1. For all recitation exercise, we highly recommend that you submit a typed solution with the original questions inside; in case you don't have enough time to do so, a handwritten one is acceptable only when: the solution is clearly written and must be saved in .pdf format. Note: unreadable answer receives no credits!
- 2. All recitation exercises must be submitted through the link posted on Canvas, we do NOT accept any submissions through emails!

Question

1. [8 pts] Illustrate the operation of COUNTING-SORT(A, B, k) on array $A = \{6, 0, 2, 0, 1, 3, 4, 6, 1, 3, 2\}$. Note: you need to clearly mark/write array B and counter array C's contents in each step.

1 2 3 4 5 6 7 8 9 10 11 0 1 A: 6 0 2 0 1 3 4 6 1 3 2 C:	1 2 3 4 5 6 C: 0 1 2 3 4 5 6
index = 11	0 1 2 2 4 5 6
B: B	0 1 2 3 4 5 6 C: C:
D.	c
index = 10	
1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B:	C:
index = 9 1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B: B	0 1 2 3 4 5 6 C:
	c
index = 8 1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B:	C:
index = 7	
1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B:	C:
index = 6	
1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B:	C:
index = 5	
1 2 3 4 5 6 7 8 9 10 11	0 1 2 3 4 5 6
B:	C:



2. Is counting sort stable or not? (Circle one answer)

Yes No

3. As above shows, we place the element in decreasing order of the index, thus we have for j = A.length downto 1 inside the algorithm. If we change it to for j = 1 to A.length, whether the algorithm still works properly or not? (Circle one answer)

Yes No