

Review 7

• Hajin Ju, 2024062806

Problem 1

Illustrate the operation of **COUNTING-SORT** on the array $A = \{ 6, 2, 1, 3, 1, 3, 2 \}$

Solution 1

A

6	2	1	3	1	3	2
---	---	---	---	---	---	---

C

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

C

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

B

1	2	3	4	5	6	7
			2			

C

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

B

1	2	3	4	5	6	7
			2		3	

C

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

B

1	2	3	4	5	6	7
	1		2		3	

C

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

B

1	2	3	4	5	6	7
	1		2	3	3	

C

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

B

C

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

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

B

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

C

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

B

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

C

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

Problem 2

Fill in the following **RADIX-SORT** example.

Solution 2

C	O	W
D	O	G
S	E	A
R	U	G
R	O	W
M	O	B
B	O	X
T	A	B
B	A	R
E	A	R
T	A	R

S	E	A
M	O	B
T	A	B
D	O	G
R	U	G
B	A	R
E	A	R
T	A	R
C	O	W
R	O	W
B	O	X

T	A	B
B	A	R
E	A	R
T	A	R
S	E	A
M	O	B
D	O	G
C	O	W
R	O	W
B	O	X
R	U	G

B	A	R
B	O	X
C	O	W
D	O	G
E	A	R
M	O	B
R	O	W
R	U	G
S	E	A
T	A	B
T	A	R