1) Consider data with a given range

$0 \leq arr[i] < 100$ values = $0 \rightarrow 99$

2) Create a counter array

Ex: Consider data in range of 0 to 9

index: 0 1 2 3 4 5 6

arr = { 1, 4, 1, 2, 7, 5, 2 }

index: 0 1 2 3 4 5 6 7 8 9

counter = { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 }

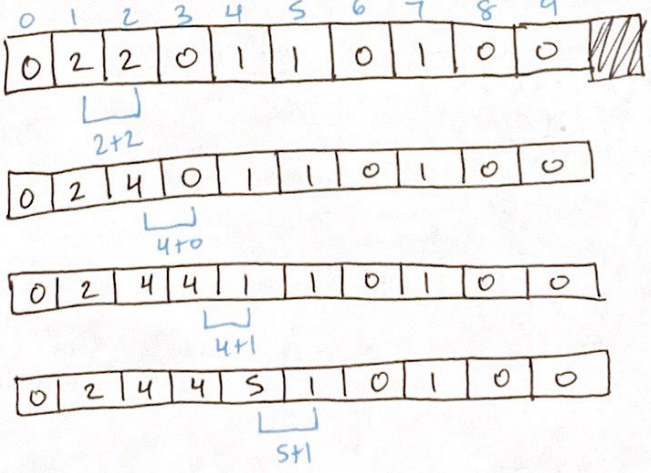
iterate through arr and increment appropriate index that match arr[i] value

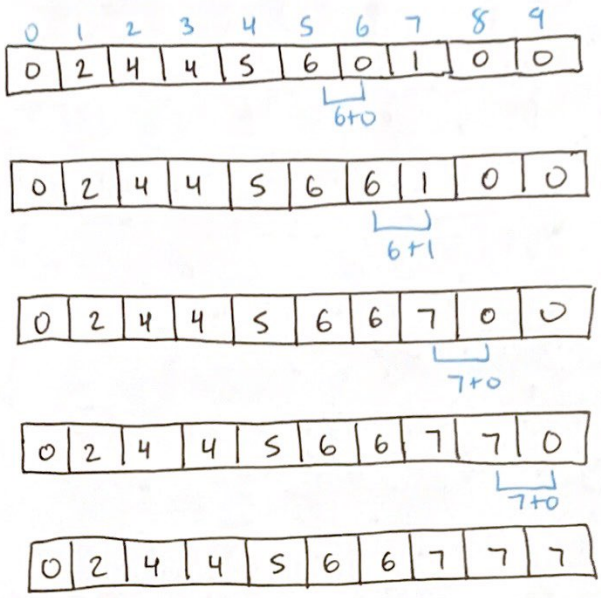
~~counter~~ ~~count~~

Index: arr[i]	Value:	Counter: 0 1 2 3 4 5 6 7 8 9
0	1	{0, 1, 0, 0, 0, 0, 0, 0, 0, 0}
1	4	{0, 1, 0, 0, 1, 0, 0, 0, 0, 0}
2	1	{0, 2, 0, 0, 1, 0, 0, 0, 0, 0}
3	2	{0, 2, 1, 0, 1, 0, 0, 0, 0, 0}
4	7	{0, 2, 1, 0, 1, 0, 0, 1, 0, 0}
5	5	{0, 2, 1, 0, 1, 1, 0, 1, 0, 0}
6	2	{0, 2, 2, 0, 1, 1, 0, 1, 0, 0}

3) Modify the counter array by adding the previous counts

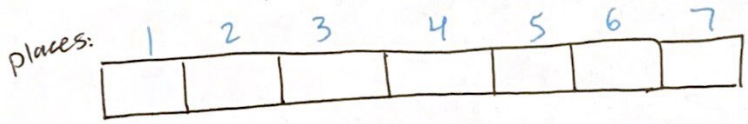
counter =





Since input size = 7, create an array with 7 places

* Corresponding values represent the places in the counter array



Place the objects in correct position and decrease the count by one

Given arr:

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

Index:

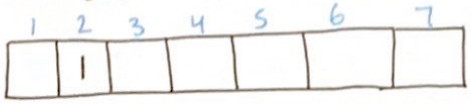
0	1	2	3	4	5	6	7	8	9
0	2	4	4	5	6	6	7	7	7

Places:

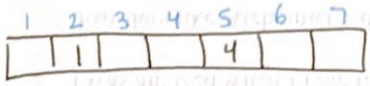
1	2	3	4	5	6	7

arr[i] = 1 ≡ index[i]
index[arr[i]]

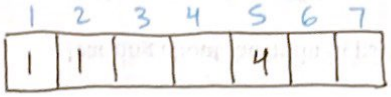
look at arr[0] = 1 → index[1] → 2 → Places[2] = 1
↳ decrease index[1] by 1 = 1



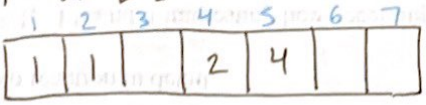
look at arr[1] = 4 → index[4] → 5 → Places[5] = 4
↳ decreas index[4] by 1 = 4



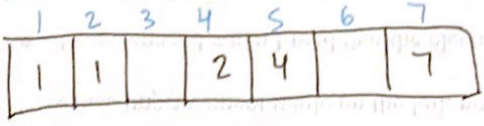
look at arr[2] = 1 → index[1] = 1 → Places[1] = 1
↳ decrease index[1] by 1 = 0



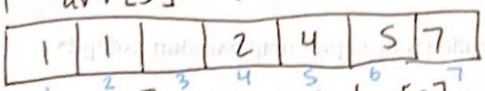
look at arr[3] = 2 → index[2] = 4 → Places[4] = 2
↳ decrease index[2] by 1 = 3



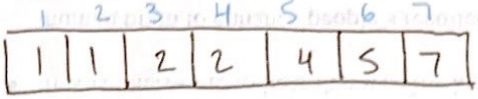
look at arr[4] = 7 → index[7] = 7 → Places[7] = 7
↳ decrease index[7] by 1 = 6



look at arr[5] = ~~6~~ 5 → index[~~6~~ 5] = 6 → Places[6] = 5
↳ decrease index[5] by 1 = 5



look at arr[6] = 2 → index[2] = 3 → Places[3] = 2
↳ decrease index[2] by 1 = 2



Sorted

arr[i] = value