

1. WAP that takes n integer numbers, sorts them using Quick sort.

Sample input	Sample output
5 6 2 3 3 5	2 3 3 5 6
6 5 6 7 8 0 1	0 1 5 6 7 8

2. WAP that takes n integer numbers, where each of the numbers are non-negative and $< n$. You have to sort the numbers in $O(n)$.

Sample input	Sample output
5 4 2 3 3 0	0 2 3 3 4
6 1 0 4 2 3 0	0 0 1 2 3 4

Hint: As all the numbers are $< n$ so you can track the frequency of each number. Then Iterate from 0 to $n-1$ and output the numbers. This kind of sorting is called counting sort.

3. Why do you think linked-list requires more memory than an array when storing the same number of elements?