DSA Sheet: 100 Array Problems

Easy (30 problems)

1. Find maximum in an array
2. Find minimum in an array
3. Sum of all elements in an array
4. Average of elements in an array
5. Reverse an array
6. Check if an array is sorted
7. Count odd and even elements
8. Delete an element from an array (shifting)
9. Insert an element in an array (shifting)
10. Merge two sorted arrays
11. Remove duplicates from a sorted array
12. Move all zeros to end of array
13. Find second largest element
14. Find second smallest element
15. Find frequency of each element
16. Count distinct elements
17. Find sum of two arrays element■wise
18. Find prefix sum array
19. Find suffix sum array
20. Rotate array by k positions (simple shift)
21. Find majority element (if any)
22. Check if array contains a given value (linear search)
23. Find first and last occurrence of a value in array
24. Remove all occurrences of a given value
25. Check pair sum equals target (brute force)
26. Replace each element with product of all others (naive)
27. Find index of maximum difference arr[j]■arr[i] where j>i
28. Segregate positive and negatives (put negatives first)
29. Find longest run of identical elements
30. Count subarrays of size k with sum = target

Medium (45 problems)

1. Binary search in sorted array
2. Find pivot point in a rotated sorted array
3. Search in rotated sorted array
4. Find smallest missing positive in unsorted array
5. Two■sum using hash map
6. Three■sum (sum of three numbers = target)
7. Subarray with maximum sum (Kadane’s algorithm)
8. Find product of array except self (without division)
9. Sort colors (0s,1s,2s) — Dutch National Flag
10. Longest increasing subsequence (LIS) in 1■D array
11. Longest consecutive sequence in array
12. Sliding window maximum (for each window size k)
13. Minimum size subarray sum ≥ target
14. Maximum product subarray
15. Merge intervals (array of intervals)

16 Insert interval into sorted list of intervals
17 Interval scheduling / maximum number of non■overlapping intervals
18 Count subarrays with sum = k (prefix sum + map)
19 Find k largest/smallest elements (heap or selection)
20 Find median of two sorted arrays (size n+m)
21 Trapping rain water (given height■array)
22 Valid mountain array
23 Next permutation
24 Find all unique pairs/triplets that sum to target
25 Move all negatives to beginning without extra space
26 Find number of subarrays with product < k
27 Minimum number of jumps to reach end of array
28 Maximum profit with at most k transactions (stock & array)
29 Rotate matrix (2D, but treat as array extension)
30 Largest rectangle in histogram (array problem)
31 Largest area under histogram using stack
32 Sort an almost sorted array (k■sorted)
33 Array formed by concatenating two arrays and find something
34 Find peak element in array (monotonic)
35 Search for range (first and last position) of target in sorted array

Hard (25 problems)

1 Median of two sorted arrays (optimized)
2 Maximum sum of non■overlapping subarrays
3 Max sum circular subarray (wrap around)
4 Count of smaller numbers after self
5 Maximum j■i such that arr[j] > arr[i]
6 Maximize the difference between two subarrays
7 Subarray with more 1s than 0s (binary array)
8 Minimum swaps to sort array
9 Minimum deletion operations to make array sorted
10 Partition array into disjoint intervals (LeetCode problem)
11 Largest rectangle in histogram (optimized using stack)
12 Maximal rectangle in binary matrix (via array/histogram)
13 Find longest subarray with absolute difference ≤ limit
14 Count range sum (using prefix + BST or BIT)
15 Jump game (max reach) & jump game II
16 Longest well■performing interval
17 Number of music playlists / combinatorics (array counts)
18 Product of last k numbers in a stream (array simulation)
19 Minimum cost to merge stones (array version of DP)
20 Map permutations of array (next / prev permutations)
21 Reverse pairs (count pairs i < j with arr[i] > 2*arr[j])
22 Longest increasing subsequence III / with constraints
23 Sum of subarray minimums
24 Find K■th smallest pair distance in array
25 Minimum swaps to make sequences increasing