Problem Array:

1. 01 Reverse the array
2. 02 Find the maximum and minimum element in an array
3. Find the "Kth" max and min element of an array
4. Given an array which consists of only 0, 1 and 2. Sort the array without using any sorting algo
5. Move all the negative elements to one side of the array
6. Find the Union and Intersection of the two sorted arrays.
7. Write a program to cyclically rotate an array by one.
8. find Largest sum contiguous Subarray [V. IMP]
9. Minimise the maximum difference between heights [V.IMP]
10. Minimum no. of Jumps to reach end of an array
11. find duplicate in an array of N+1 Integers
12. Merge 2 sorted arrays without using Extra space.
13. Kadane's Algo [V.V.V.V.V IMP]
14. Merge Intervals
15. Next Permutation
16. Count Inversion
17. Best time to buy and Sell stock
18. find all pairs on integer array whose sum is equal to given number
19. find common elements In 3 sorted arrays
20. Rearrange the array in alternating positive and negative items with O(1) extra space
21. Find if there is any subarray with sum equal to 0
22. Find factorial of a large number
23. find maximum product subarray
24. Find longest coinsecutive subsequence
25. Given an array of size n and a number k, fin all elements that appear more than " n/k " times.
26. Maximum profit by buying and selling a share atmost twice
27. Find whether an array is a subset of another array
28. Find the triplet that sum to a given value
29. Trapping Rain water problem
30. Chocolate Distribution problem
31. Smallest Subarray with sum greater than a given value
32. Three way partitioning of an array around a given value
33. Minimum swaps required bring elements less equal K together
34. Minimum no. of operations required to make an array palindrome
35. Median of 2 sorted arrays of equal size
36. Median of 2 sorted arrays of different size
37.
38. Problem Matrix:
39. Spiral traversal on a Matrix
40. Search an element in a matriix
41. Find median in a row wise sorted matrix
42. Find row with maximum no. of 1's
43. Print elements in sorted order using row-column wise sorted matrix
44. Maximum size rectangle
45. Find a specific pair in matrix
46. Rotate matrix by 90 degrees
47. Kth smallest element in a row-cpumn wise sorted matrix
48. Common elements in all rows of a given matrix
49.

Problem String:

Reverse a String
Check whether a String is Palindrome or not
Find Duplicate characters in a string
Why strings are immutable in Java?
Write a Code to check whether one string is a rotation of another
Write a Program to check whether a string is a valid shuffle of two strings or not
Count and Say problem
Write a program to find the longest Palindrome in a string.[Longest palindromic Substring]
Find Longest Recurring Subsequence in String
Print all Subsequences of a string.
Print all the permutations of the given string
Split the Binary string into two substring with equal 0's and 1's
Word Wrap Problem [VERY IMP].
EDIT Distance [Very Imp]
Find next greater number with same set of digits. [Very Very IMP]
Balanced Parenthesis problem.[Imp]
Word break Problem[Very Imp]
Rabin Karp Algo
KMP Algo
Convert a Sentence into its equivalent mobile numeric keypad sequence.
Minimum number of bracket reversals needed to make an expression balanced.
Count All Palindromic Subsequence in a given String.
Count of number of given string in 2D character array
Search a Word in a 2D Grid of characters.
Boyer Moore Algorithm for Pattern Searching.
Converting Roman Numerals to Decimal
Longest Common Prefix
Number of flips to make binary string alternate
Find the first repeated word in string.
Minimum number of swaps for bracket balancing.
Find the longest common subsequence between two strings.
Program to generate all possible valid IP addresses from given string.
Write a program tofind the smallest window that contains all characters of string itself.
Rearrange characters in a string such that no two adjacent are same
Minimum characters to be added at front to make string palindrome
Given a sequence of words, print all anagrams together
Find the smallest window in a string containing all characters of another string
Recursively remove all adjacent duplicates
String matching where one string contains wildcard characters
Function to find Number of customers who could not get a computer
Transform One String to Another using Minimum Number of Given Operation
Check if two given strings are isomorphic to each other
Recursively print all sentences that can be formed from list of word lists

Problem Searching And Sorting:

Find first and last positions of an element in a sorted array
Find a Fixed Point (Value equal to index) in a given array
Search in a rotated sorted array
square root of an integer
Maximum and minimum of an array using minimum number of comparisons
Optimum location of point to minimize total distance
Find the repeating and the missing
find majority element

104 Searching in an array where adjacent differ by at most k
105 find a pair with a given difference
106 find four elements that sum to a given value
107 maximum sum such that no 2 elements are adjacent
108 Count triplet with sum smaller than a given value
109 merge 2 sorted arrays
110 print all subarrays with 0 sum
111 Product array Puzzle
112 Sort array according to count of set bits
113 minimum no. of swaps required to sort the array
114 Bishu and Soldiers
115 Rasta and Kheshtak
116 Kth smallest number again
117 Find pivot element in a sorted array
118 K-th Element of Two Sorted Arrays
119 Aggressive cows
120 Book Allocation Problem
121 EKOSPOJ:
122 Job Scheduling Algo
123 Missing Number in AP
124 Smallest number with atleastn trailing zeroes infactorial
125 Painters Partition Problem:
126 ROTI-Prata SPOJ
127 DoubleHelix SPOJ
128 Subset Sums
129 Findthe inversion count
130 Implement Merge-sort in-place
131 Partitioning and Sorting Arrays with Many Repeated Entries
132
133 Problem Linkdlist:
134 Write a Program to reverse the Linked List. (Both Iterative and recursive)
135 Reverse a Linked List in group of Given Size. [Very Imp]
136 Write a program to Detect loop in a linked list.
137 Write a program to Delete loop in a linked list.
138 Find the starting point of the loop.
139 Remove Duplicates in a sorted Linked List.
140 Remove Duplicates in a Un-sorted Linked List.
141 Write a Program to Move the last element to Front in a Linked List.
142 Add “1” to a number represented as a Linked List.
143 Add two numbers represented by linked lists.
144 Intersection of two Sorted Linked List.
145 Intersection Point of two Linked Lists.
146 Merge Sort For Linked lists.[Very Important]
147 Quicksort for Linked Lists.[Very Important]
148 Find the middle Element of a linked list.
149 Check if a linked list is a circular linked list.
150 Split a Circular linked list into two halves.
151 Write a Program to check whether the Singly Linked list is a palindrome or not.
152 Deletion from a Circular Linked List.
153 Reverse a Doubly Linked list.
154 Find pairs with a given sum in a DLL.
155 Count triplets in a sorted DLL whose sum is equal to given value “X”.
156 Sort a “k”sorted Doubly Linked list.[Very IMP]
157 Rotate DoublyLinked list by N nodes.

158 Rotate a Doubly Linked list in group of Given Size.[Very IMP]
159 Can we reverse a linked list in less than O(n) ?
160 Why Quicksort is preferred for. Arrays and Merge Sort for LinkedLists ?
161 Flatten a Linked List
162 Sort a LL of 0's, 1's and 2's
163 Clone a linked list with next and random pointer
164 Merge K sorted Linked list
165 Multiply 2 no. represented by LL
166 Delete nodes which have a greater value on right side
167 Segregate even and odd nodes in a Linked List
168 Program for n'th node from the end of a Linked List
169 Find the first non-repeating character from a stream of characters
170
171 Problem BT:
172 level order traversal
173 Reverse Level Order traversal
174 Height of a tree
175 Diameter of a tree
176 Mirror of a tree
177 Inorder Traversal of a tree both using recursion and Iteration
178 Preorder Traversal of a tree both using recursion and Iteration
179 Postorder Traversal of a tree both using recursion and Iteration
180 Left View of a tree
181 Right View of Tree
182 Top View of a tree
183 Bottom View of a tree
184 Zig-Zag traversal of a binary tree
185 Check if a tree is balanced or not
186 Diagnol Traversal of a Binary tree
187 Boundary traversal of a Binary tree
188 Construct Binary Tree from String with Bracket Representation
189 Convert Binary tree into Doubly Linked List
190 Convert Binary tree into Sum tree
191 Construct Binary tree from Inorder and preorder traversal
192 Find minimum swaps required to convert a Binary tree into BST
193 Check if Binary tree is Sum tree or not
194 Check if all leaf nodes are at same level or not
195 Check if a Binary Tree contains duplicate subtrees of size 2 or more [IMP]
196 Check if 2 trees are mirror or not
197 Sum of Nodes on the Longest path from root to leaf node
198 Check if given graph is tree or not. [IMP]
199 Find Largest subtree sum in a tree
200 Maximum Sum of nodes in Binary tree such that no two are adjacent
201 Print all "K" Sum paths in a Binary tree
202 Find LCA in a Binary tree
203 Find distance between 2 nodes in a Binary tree
204 Kth Ancestor of node in a Binary tree
205 Find all Duplicate subtrees in a Binary tree [IMP]
206 Tree Isomorphism Problem
207
208 Problem BST:
209 Fina a value in a BST
210 Deletion of a node in a BST
211 Find min and max value in a BST

212 Find inorder successor and inorder predecessor in a BST
213 Check if a tree is a BST or not
214 Populate Inorder successor of all nodes
215 Find LCA of 2 nodes in a BST
216 Construct BST from preorder traversal
217 Convert Binary tree into BST
218 Convert a normal BST into a Balanced BST
219 Merge two BST [V.V.V>IMP]
220 Find Kth largest element in a BST
221 Find Kth smallest element in a BST
222 Count pairs from 2 BST whose sum is equal to given value "X"
223 Find the median of BST in O(n) time and O(1) space
224 Count BST ndoes that lie in a given range
225 Replace every element with the least greater element on its right
226 Given "n" appointments, find the conflicting appointments
227 Check preorder is valid or not
228 Check whether BST contains Dead end
229 Largest BST in a Binary Tree [V.V.V.V.V IMP]
230 Flatten BST to sorted list
231
232 Problem Greedy:
233 Activity Selection Problem
234 Job SequencingProblem
235 Huffman Coding
236 Water Connection Problem
237 Fractional Knapsack Problem
238 Greedy Algorithm to find Minimum number of Coins
239 Maximum trains for which stoppage can be provided
240 Minimum Platforms Problem
241 Buy Maximum Stocks if i stocks can be bought on i-th day
242 Find the minimum and maximum amount to buy all N candies
243 Minimize Cash Flow among a given set of friends who have borrowed money from each other
244 Minimum Cost to cut a board into squares
245 Check if it is possible to survive on Island
246 Find maximum meetings in one room
247 Maximum product subset of an array
248 Maximize array sum after K negations
249 Maximize the sum of arr[i]*i
250 Maximum sum of absolute difference of an array
251 Maximize sum of consecutive differences in a circular array
252 Minimum sum of absolute difference of pairs of two arrays
253 Program for Shortest Job First (or SJF) CPU Scheduling
254 Program for Least Recently Used (LRU) Page Replacement algorithm
255 Smallest subset with sum greater than all other elements
256 Chocolate Distribution Problem
257 DEFKIN -Defense of a Kingdom
258 DIEHARD -DIE HARD
259 GERGOVIA -Wine trading in Gergovia
260 Picking Up Chicks
261 CHOCOLA –Chocolate
262 ARRANGE -Arranging Amplifiers
263 K Centers Problem
264 Minimum Cost of ropes
265 Find smallest number with given number of digits and sum of digits

266 Rearrange characters in a string such that no two adjacent are same
267 Find maximum sum possible equal sum of three stacks
268
269 Problem Backtracking:
270 Rat in a maze Problem
271 Printing all solutions in N-Queen Problem
272 Word Break Problem using Backtracking
273 Remove Invalid Parentheses
274 Sudoku Solver
275 m Coloring Problem
276 Print all palindromic partitions of a string
277 Subset Sum Problem
278 The Knight's tour problem
279 Tug of War
280 Find shortest safe route in a path with landmines
281 Combinational Sum
282 Find Maximum number possible by doing at-most K swaps
283 Print all permutations of a string
284 Find if there is a path of more than k length from a source
285 Longest Possible Route in a Matrix with Hurdles
286 Print all possible paths from top left to bottom right of a mXn matrix
287 Partition of a set intoK subsets with equal sum
288 Find the K-th Permutation Sequence of first N natural numbers
289
290 Problem Stack And Queues:
291 Implement Stack from Scratch
292 Implement Queue from Scratch
293 Implement 2 stack in an array
294 find the middle element of a stack
295 Implement "N" stacks in an Array
296 Check the expression has valid or Balanced parenthesis or not.
297 Reverse a String using Stack
298 Design a Stack that supports getMin() in O(1) time and O(1) extra space.
299 Find the next Greater element
300 The celebrity Problem
301 Arithmetic Expression evaluation
302 Evaluation of Postfix expression
303 Implement a method to insert an element at its bottom without using any other data structure.
304 Reverse a stack using recursion
305 Sort a Stack using recursion
306 Merge Overlapping Intervals
307 Largest rectangular Area in Histogram
308 Length of the Longest Valid Substring
309 Expression contains redundant bracket or not
310 Implement Stack using Queue
311 Implement Stack using Deque
312 Stack Permutations (Check if an array is stack permutation of other)
313 Implement Queue using Stack
314 Implement "n" queue in an array
315 Implement a Circular queue
316 LRU Cache Implementationa
317 Reverse a Queue using recursion
318 Reverse the first "K" elements of a queue
319 Interleave the first half of the queue with second half

Find the first circular tour that visits all Petrol Pumps
Minimum time required to rot all oranges
Distance of nearest cell having 1 in a binary matrix
First negative integer in every window of size “k”
Check if all levels of two trees are anagrams or not.
Sum of minimum and maximum elements of all subarrays of size “k”.
Minimum sum of squares of character counts in a given string after removing “k” characters.
Queue based approach or first non-repeating character in a stream.
Next Smaller Element

Problem Heap:

Implement a Maxheap/MinHeap using arrays and recursion.
Sort an Array using heap. (HeapSort)
Maximum of all subarrays of size k.
“k” largest element in an array
Kth smallest and largest element in an unsorted array
Merge “K” sorted arrays. [IMP]
Merge 2 Binary Max Heaps
Kth largest sum continuous subarrays
Leetcode- reorganize strings
Merge “K” Sorted Linked Lists [V.IMP]
Smallest range in “K” Lists
Median in a stream of Integers
Check if a Binary Tree is Heap
Connect “n” ropes with minimum cost
Convert BST to Min Heap
Convert min heap to max heap
Rearrange characters in a string such that no two adjacent are same.
Minimum sum of two numbers formed from digits of an array

Problem Graph:

Create a Graph, print it
Implement BFS algorithm
Implement DFS Algo
Detect Cycle in Directed Graph using BFS/DFS Algo
Detect Cycle in UnDirected Graph using BFS/DFS Algo
Search in a Maze
Minimum Step by Knight
flood fill algo
Clone a graph
Making wired Connections
word Ladder
Dijkstra algo
Implement Topological Sort
Minimum time taken by each job to be completed given by a Directed Acyclic Graph
Find whether it is possible to finish all tasks or not from given dependencies
Find the no. of Isalnds
Given a sorted Dictionary of an Alien Language, find order of characters
Implement Kruksal’sAlgorithm
Implement Prim’s Algorithm
Total no. of Spanning tree in a graph
Implement Bellman Ford Algorithm
Implement Floyd warshallAlgorithm
Travelling Salesman Problem

374 Graph ColouringProblem
375 Snake and Ladders Problem
376 Find bridge in a graph
377 Count Strongly connected Components(Kosaraju Algo)
378 Check whether a graph is Bipartite or Not
379 Detect Negative cycle in a graph
380 Longest path in a Directed Acyclic Graph
381 Journey to the Moon
382 Cheapest Flights Within K Stops
383 Oliver and the Game
384 Water Jug problem using BFS
385 Water Jug problem using BFS
386 Find if there is a path of more thank length from a source
387 M-ColouringProblem
388 Minimum edges to reverse o make path from source to destination
389 Paths to travel each nodes using each edge(Seven Bridges)
390 Vertex Cover Problem
391 Chinese Postman or Route Inspection
392 Number of Triangles in a Directed and Undirected Graph
393 Minimise the cashflow among a given set of friends who have borrowed money from each other
394 Two Clique Problem
395
396 Problem Trie:
397 Construct a trie from scratch
398 Find shortest unique prefix for every word in a given list
399 Word Break Problem | (Trie solution)
400 Given a sequence of words, print all anagrams together
401 Implement a Phone Directory
402 Print unique rows in a given boolean matrix
403
404 Problem DP:
405 Coin ChangeProblem
406 Knapsack Problem
407 Binomial CoefficientProblem
408 Permutation CoefficientProblem
409 Program for nth Catalan Number
410 Matrix Chain Multiplication
411 Edit Distance
412 Subset Sum Problem
413 Friends Pairing Problem
414 Gold Mine Problem
415 Assembly Line SchedulingProblem
416 Painting the Fenceproblem
417 Maximize The Cut Segments
418 Longest Common Subsequence
419 Longest Repeated Subsequence
420 Longest Increasing Subsequence
421 Space Optimized Solution of LCS
422 LCS (Longest Common Subsequence) of three strings
423 Maximum Sum Increasing Subsequence
424 Count all subsequences having product less than K
425 Longest subsequence such that difference between adjacent is one
426 Maximum subsequence sum such that no three are consecutive
427 Egg Dropping Problem

428 Maximum Length Chain of Pairs
429 Maximum size square sub-matrix with all 1s
430 Maximum sum of pairs with specific difference
431 Min Cost PathProblem
432 Maximum difference of zeros and ones in binary string
433 Minimum number of jumps to reach end
434 Minimum cost to fill given weight in a bag
435 Minimum removals from array to make max –min <= K
436 Longest Common Substring
437 Count number of ways to reacha given score in a game
438 Count Balanced Binary Trees of Height h
439 LargestSum Contiguous Subarray [V>V>V>V IMP]
440 Smallest sum contiguous subarray
441 Unbounded Knapsack (Repetition of items allowed)
442 Word Break Problem
443 Largest Independent Set Problem
444 Partition problem
445 Longest Palindromic Subsequence
446 Count All Palindromic Subsequence in a given String
447 Longest Palindromic Substring
448 Longest alternating subsequence
449 Weighted Job Scheduling
450 Coin game winner where every player has three choices
451 Count Derangements (Permutation such that no element appears in its original position) [IMPORTANT]
452 Maximum profit by buying and selling a share at most twice [IMP]
453 Optimal Strategy for a Game
454 Optimal Binary Search Tree
455 Palindrome PartitioningProblem
456 Word Wrap Problem
457 Mobile Numeric Keypad Problem [IMP]
458 Boolean Parenthesization Problem
459 Largest rectangular sub-matrix whose sum is 0
460 Largest area rectangular sub-matrix with equal number of 1's and 0's [IMP]
461 Maximum sum rectangle in a 2D matrix
462 Maximum profit by buying and selling a share at most k times
463 Find if a string is interleaved of two other strings
464 Maximum Length of Pair Chain
465
466 Problem BITmanipulation:
467 Count set bits in an integer
468 Find the two non-repeating elements in an array of repeating elements
469 Count number of bits to be flipped to convert A to B
470 Count total set bits in all numbers from 1 to n
471 Program to find whether a no is power of two
472 Find position of the only set bit
473 Copy set bits in a range
474 Divide two integers without using multiplication, division and mod operator
475 Calculate square of a number without using *, / and pow()
476 Power Set