**Plan of Attack (114 problems):**

**String problems (24):**

1. [Reverse an array without affecting special characters](http://www.geeksforgeeks.org/reverse-an-array-without-affecting-special-characters/)
2. [All Possible Palindromic Partitions](http://www.geeksforgeeks.org/given-a-string-print-all-possible-palindromic-partition/)
3. [Count triplets with sum smaller than a given value](http://www.geeksforgeeks.org/count-triplets-with-sum-smaller-that-a-given-value/)
4. [Convert array into Zig-Zag fashion](http://www.geeksforgeeks.org/convert-array-into-zig-zag-fashion/)
5. [Generate all possible sorted arrays from alternate elements of two given sorted arrays](http://www.geeksforgeeks.org/generate-all-possible-sorted-arrays-from-alternate-elements-of-two-given-arrays/)
6. [Pythagorean Triplet in an array](http://www.geeksforgeeks.org/find-pythagorean-triplet-in-an-unsorted-array/)
7. [Length of the largest subarray with contiguous elements](http://www.geeksforgeeks.org/length-largest-subarray-contiguous-elements-set-1/)
8. [Find the smallest positive integer value that cannot be represented as sum of any subset of a given array](http://www.geeksforgeeks.org/find-smallest-value-represented-sum-subset-given-array/)
9. [Smallest subarray with sum greater than a given value](http://www.geeksforgeeks.org/minimum-length-subarray-sum-greater-given-value/)
10. [Stock Buy Sell to Maximize Profit](http://www.geeksforgeeks.org/stock-buy-sell/)
11. Find the first non-repeated character in a String
12. Reverse a String iteratively and recursively
13. Determine if 2 Strings are anagrams
14. Check if String is a palindrome
15. Check if a String is composed of all unique characters
16. Determine if a String is an int or a double
17. HARD: Find the shortest palindrome in a String
18. HARD: Print all permutations of a String
19. HARD: Given a single-line text String and a maximum width value, write the function 'String justify(String text, int maxWidth)' that formats the input text using full-justification, i.e., extra spaces on each line are equally distributed between the words; the first word on each line is flushed left and the last word on each line is flushed right
20. Find the most frequent integer in an array.
21. Find pairs in an integer array whose sum is equal to 10 (bonus: do it in linear time)
22. Given 2 integer arrays, determine of the 2nd array is a rotated version of the 1st array. Ex. Original Array A={1,2,3,5,6,7,8} Rotated Array B={5,6,7,8,1,2,3}
23. Find the only element in an array that only occurs once.
24. Find the common elements of 2 int arrays

**Tree / Binary Search (23):**

1. [Find Minimum Depth of a Binary Tree](http://www.geeksforgeeks.org/find-minimum-depth-of-a-binary-tree/)
2. [Maximum Path Sum in a Binary Tree](http://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/)
3. [Check if a given array can represent Preorder Traversal of Binary Search Tree](http://www.geeksforgeeks.org/check-if-a-given-array-can-represent-preorder-traversal-of-binary-search-tree/)
4. [Check whether a binary tree is a full binary tree or not](http://www.geeksforgeeks.org/check-whether-binary-tree-full-binary-tree-not/)
5. [Bottom View Binary Tree](http://www.geeksforgeeks.org/bottom-view-binary-tree/)
6. [Print Nodes in Top View of Binary Tree](http://www.geeksforgeeks.org/print-nodes-top-view-binary-tree/)
7. [Remove nodes on root to leaf paths of length < K](http://www.geeksforgeeks.org/remove-nodes-root-leaf-paths-length-k/)
8. [Lowest Common Ancestor in a Binary Search Tree](http://www.geeksforgeeks.org/lowest-common-ancestor-in-a-binary-search-tree/)
9. [Check if a binary tree is subtree of another binary tree](http://www.geeksforgeeks.org/check-binary-tree-subtree-another-binary-tree-set-2/)
10. [Reverse alternate levels of a perfect binary tree](http://www.geeksforgeeks.org/reverse-alternate-levels-binary-tree/)
11. 11-Implement a BST with insert and delete functions
12. 12-Print a tree using BFS and DFS
13. 13- Write a function that determines if a tree is a BST
14. 14- Find the smallest element in a BST
15. 15- Find the 2nd largest number in a BST
16. 16- Given a binary tree which is a sum tree (child nodes add to parent), write an algorithm to determine whether the tree is a valid sum tree
17. 17- Find the distance between 2 nodes in a BST and a normal binary tree
18. 18- Print the coordinates of every node in a binary tree, where root is 0,0
19. 19- Print a tree by levels
20. 20- Given a binary tree which is a sum tree, write an algorithm to determine whether the tree is a valid 21- sum tree
21. 22- Given a tree, verify that it contains a subtree.
22. 23- HARD: Find the max distance between 2 nodes in a BST.
23. 24- HARD: Construct a BST given the pre-order and in-order traversal Strings

**Linked Lists (17):**

1. Given a linked list, which is sorted, how will you insert in a sorted way.
2. [Delete a given node in Linked List (under given constraints)](http://www.geeksforgeeks.org/delete-a-given-node-in-linked-list-under-given-constraints/)
3. [Compare two strings represented as linked lists](http://www.geeksforgeeks.org/compare-two-strings-represented-as-linked-lists/)
4. [Add Two Numbers Represented By Linked Lists](http://www.geeksforgeeks.org/sum-of-two-linked-lists/)
5. [Merge A Linked List Into Another Linked List At Alternate Positions](http://www.geeksforgeeks.org/merge-a-linked-list-into-another-linked-list-at-alternate-positions/)
6. [Reverse A List In Groups Of Given Size](http://www.geeksforgeeks.org/reverse-a-list-in-groups-of-given-size/)
7. [Union And Intersection Of 2 Linked Lists](http://www.geeksforgeeks.org/union-and-intersection-of-two-linked-lists/)
8. [Detect And Remove Loop In A Linked List](http://www.geeksforgeeks.org/detect-and-remove-loop-in-a-linked-list/)
9. [Merge Sort For Linked Lists](http://www.geeksforgeeks.org/merge-sort-for-linked-list/)
10. [Select A Random Node from A Singly Linked List](http://www.geeksforgeeks.org/select-a-random-node-from-a-singly-linked-list/)
11. Implement a linked list (with insert and delete functions)
12. Find the Nth element in a linked list
13. Remove the Nth element of a linked list
14. Check if a linked list has cycles
15. Given a circular linked list, find the node at the beginning of the loop. Example: A-->B-->C --> D-->E -->C, C is the node that begins the loop
16. Check whether a link list is a palindrome
17. Reverse a linked list iteratively and recursively

**General Questions (9):**

1. Implement binary search of a sorted array of integers
2. Implement binary search in a rotated array (ex. {5,6,7,8,1,2,3})
3. Write a function that prints out the binary form of an int
4. Implement parseInt
5. Implement squareroot function
6. Implement an exponent function (bonus: now try in log(n) time)
7. Write a multiply function that multiples 2 integers without using \*
8. HARD: Given a function rand5() that returns a random int between 0 and 5, implement rand7()
9. HARD: Given a 2D array of 1s and 0s, count the number of "islands of 1s" (e.g. groups of connecting 1s)

**Sorting and Searching (13):**

1. [Binary Search](http://geeksquiz.com/binary-search/)

2. [Search an element in a sorted and rotated array](http://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/)

3. [Bubble Sort](http://geeksquiz.com/bubble-sort/) (implement it)

4. [Insertion Sort](http://geeksquiz.com/insertion-sort/) (implement it

5. Selection Sort

6. [Merge Sort](http://geeksquiz.com/merge-sort/) (implement it)

7. [Heap Sort (Binary Heap)](http://geeksquiz.com/heap-sort/)

8. [Quick Sort](http://geeksquiz.com/quick-sort/) (implement it)

9. [Interpolation Search](https://en.wikipedia.org/wiki/Interpolation_search)

10. [Find Kth Smallest/Largest Element In Unsorted Array](http://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array-set-2-expected-linear-time/)

11. [Given a sorted array and a number x, find the pair in array whose sum is closest to x](http://geeksquiz.com/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/)

12. Implement binary search of a sorted array of integers

13.  Implement binary search in a rotated array (ex. {5,6,7,8,1,2,3})

**Stacks, Queues, and Heaps (6):**

1. Implement a stack with push and pop functions
2. Implement a queue with queue and dequeue functions
3. Find the minimum element in a stack in O(1) time
4. Write a function that sorts a stack (bonus: sort the stack in place without extra memory)
5. Implement a binary min heap. Turn it into a binary max heap.
6. HARD: Implement a queue using 2 stacks

**Dynamic Programming (12):**

1. [Longest Common Subsequence](http://www.geeksforgeeks.org/dynamic-programming-set-4-longest-common-subsequence/)

2. [Longest Increasing Subsequence](http://www.geeksforgeeks.org/dynamic-programming-set-3-longest-increasing-subsequence/)

3. [Edit Distance](http://www.geeksforgeeks.org/dynamic-programming-set-5-edit-distance/)

4. [Minimum Partition](http://www.geeksforgeeks.org/partition-a-set-into-two-subsets-such-that-the-difference-of-subset-sums-is-minimum/)

5. [Ways to Cover a Distance](http://www.geeksforgeeks.org/count-number-of-ways-to-cover-a-distance/)

6. [Longest Path In Matrix](http://www.geeksforgeeks.org/find-the-longest-path-in-a-matrix-with-given-constraints/)

7. [Subset Sum Problem](http://www.geeksforgeeks.org/dynamic-programming-subset-sum-problem/)

8. [Optimal Strategy for a Game](http://www.geeksforgeeks.org/dynamic-programming-set-31-optimal-strategy-for-a-game/)

9. [0-1 Knapsack Problem](http://www.geeksforgeeks.org/dynamic-programming-set-10-0-1-knapsack-problem/)

10. [Boolean Parenthesization Problem](http://www.geeksforgeeks.org/dynamic-programming-set-37-boolean-parenthesization-problem/)

11. Write fibbonaci iteratively and recursively (bonus: use dynamic programming).

12. Use dynamic programming to find the first X prime numbers

**Graphs (10):**

1. [Breadth First Search (BFS)](http://www.geeksforgeeks.org/breadth-first-traversal-for-a-graph/)

2. [Depth First Search (DFS)](http://www.geeksforgeeks.org/depth-first-traversal-for-a-graph/)

3. [Shortest Path from source to all vertices \*\*Dijkstra\*\*](http://www.geeksforgeeks.org/greedy-algorithms-set-6-dijkstras-shortest-path-algorithm/)

4. [Shortest Path from every vertex to every other vertex \*\*Floyd Warshall\*\*](http://www.geeksforgeeks.org/dynamic-programming-set-16-floyd-warshall-algorithm/)

5. [To detect cycle in a Graph \*\*Union Find\*\*](http://www.geeksforgeeks.org/union-find/)

6. [Minimum Spanning tree \*\*Prim\*\*](http://www.geeksforgeeks.org/greedy-algorithms-set-5-prims-minimum-spanning-tree-mst-2/)

7. [Minimum Spanning tree \*\*Kruskal\*\*](http://www.geeksforgeeks.org/greedy-algorithms-set-2-kruskals-minimum-spanning-tree-mst/)

8. [Topological Sort](http://www.geeksforgeeks.org/topological-sorting/)

9. [Boggle (Find all possible words in a board of characters)](http://www.geeksforgeeks.org/boggle-find-possible-words-board-characters/)

10. [Bridges in a Graph](http://www.geeksforgeeks.org/bridge-in-a-graph/)