**DSA Interview questions for SDE I/II roles**

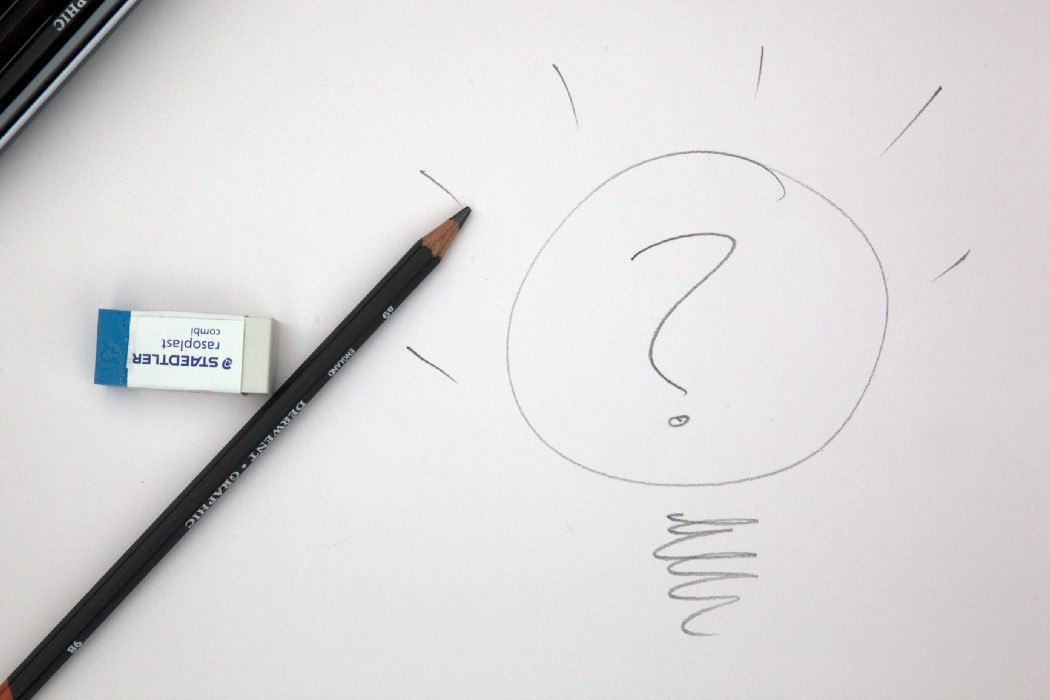


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Hey everyone, If you are preparing for SDE roles and you have experience about 0–4 years then dive in, because i am going to share most importantly asked DSA questions.

I have given interviews for more than 50 companies and cleared many of them some names are like PayTm, PineLabs, InfoEdge, Radware, 6Sense, Cisco.

If you want any help regarding how to clear these companies reach out to me.

Here is the list of questions which we should prepare before going for any DSA interview.

1. Last Stone Weight II

**[Last Stone Weight II - LeetCode](https://leetcode.com/problems/last-stone-weight-ii/" \t "_blank)**

[You are given an array of integers stones where stones[i] is the weight of the stone. We are playing a game with the…](https://leetcode.com/problems/last-stone-weight-ii/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/last-stone-weight-ii/" \t "_blank)

2. Multiply array Elements except itself.

**[Product of Array Except Self - LeetCode](https://leetcode.com/problems/product-of-array-except-self/" \t "_blank)**

[Given an integer array nums, return an array answer such that answer[i] is equal to the product of all the elements of…](https://leetcode.com/problems/product-of-array-except-self/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/product-of-array-except-self/" \t "_blank)

3. Rearrange positive and negative numbers in O(n) time and O(1) extra space

**[Rearrange positive and negative numbers in O(n) time and O(1) extra space - GeeksforGeeks](https://www.geeksforgeeks.org/rearrange-positive-and-negative-numbers-publish/" \t "_blank)**

[An array contains both positive and negative numbers in random order. Rearrange the array elements so that positive and…](https://www.geeksforgeeks.org/rearrange-positive-and-negative-numbers-publish/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/rearrange-positive-and-negative-numbers-publish/" \t "_blank)

4. Minimum Number of Platforms Required for a Railway/Bus Station

**[Minimum Number of Platforms Required for a Railway/Bus Station - GeeksforGeeks](https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/" \l ":~:text=Explanation%3A%20Only%20one%20platform%20is%20needed." \t "_blank)**

[Given the arrival and departure times of all trains that reach a railway station, the task is to find the minimum…](https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/" \l ":~:text=Explanation%3A%20Only%20one%20platform%20is%20needed." \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/" \l ":~:text=Explanation%3A%20Only%20one%20platform%20is%20needed." \t "_blank)

5. Maximum Path Sum in a Binary Tree

**[Maximum Path Sum in a Binary Tree - GeeksforGeeks](https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/" \t "_blank)**

[Given a binary tree, find the maximum path sum. The path may start and end at any node in the tree.Example: Input: Root…](https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/" \t "_blank)

6. Practice Basic operations of Array, LinkedList, Stack Queue, Tree.

7. Invert a Binary Tree

**[Invert Binary Tree - LeetCode](https://leetcode.com/problems/invert-binary-tree/" \t "_blank)**

[Level up your coding skills and quickly land a job. This is the best place to expand your knowledge and get prepared…](https://leetcode.com/problems/invert-binary-tree/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/invert-binary-tree/" \t "_blank)

8. Reverse a Linked List.

**[Reverse a linked list - GeeksforGeeks](https://www.geeksforgeeks.org/reverse-a-linked-list/" \t "_blank)**

[A Computer Science portal for geeks. It contains well written, well thought and well explained computer science and…](https://www.geeksforgeeks.org/reverse-a-linked-list/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/reverse-a-linked-list/" \t "_blank)

9. Permutation of a String.

**[Write a program to print all permutations of a given string - GeeksforGeeks](https://www.geeksforgeeks.org/write-a-c-program-to-print-all-permutations-of-a-given-string/" \t "_blank)**

[A permutation also called an "arrangement number" or "order," is a rearrangement of the elements of an ordered list S…](https://www.geeksforgeeks.org/write-a-c-program-to-print-all-permutations-of-a-given-string/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/write-a-c-program-to-print-all-permutations-of-a-given-string/" \t "_blank)

10. Search element in a sorted rotated array.

**[Search an element in a sorted and rotated array - GeeksforGeeks](https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/" \t "_blank)**

[An element in a sorted array can be found in O(log n) time via binary search. But suppose we rotate an ascending order…](https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/" \t "_blank)

11. Maximum sum such that no two elements are adjacent

**[Maximum sum such that no two elements are adjacent - GeeksforGeeks](https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/" \t "_blank)**

[Given an array arr[] of positive numbers, the task is to find the maximum sum of a subsequence with the constraint that…](https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/" \t "_blank)

12. Best Time to Buy and Sell Stock with Transaction Fee

**[Best Time to Buy and Sell Stock with Transaction Fee - LeetCode](https://leetcode.com/problems/best-time-to-buy-and-sell-stock-with-transaction-fee/" \t "_blank)**

[You are given an array prices where prices[i] is the price of a given stock on the day, and an integer fee representing…](https://leetcode.com/problems/best-time-to-buy-and-sell-stock-with-transaction-fee/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/best-time-to-buy-and-sell-stock-with-transaction-fee/" \t "_blank)

13. Maximum triplet sum in array

**[Maximum triplet sum in array - GeeksforGeeks](https://www.geeksforgeeks.org/maximum-triplet-sum-array/" \t "_blank)**

[Given an array, the task is to find the maximum triplet sum in the array.](https://www.geeksforgeeks.org/maximum-triplet-sum-array/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/maximum-triplet-sum-array/" \t "_blank)

14. Closest Strings

15. Check If Two strings are permutation of each other.

**[Check if two strings are permutation of each other - GeeksforGeeks](https://www.geeksforgeeks.org/check-if-two-strings-are-permutation-of-each-other/" \t "_blank)**

[Write a function to check whether two given strings are Permutation of each other or not. A Permutation of a string is…](https://www.geeksforgeeks.org/check-if-two-strings-are-permutation-of-each-other/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/check-if-two-strings-are-permutation-of-each-other/" \t "_blank)

16. Check if edit distance between two strings is one.

**[Check if edit distance between two strings is one - GeeksforGeeks](https://www.geeksforgeeks.org/check-if-two-given-strings-are-at-edit-distance-one/" \t "_blank)**

[An edit between two strings is one of the following changes. Add a character Delete a character Change a character…](https://www.geeksforgeeks.org/check-if-two-given-strings-are-at-edit-distance-one/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/check-if-two-given-strings-are-at-edit-distance-one/" \t "_blank)

17. Questions related to Priority Queue.

18. Check if two nodes are on same path in tree.

**[Check if two nodes are on same path in a tree - GeeksforGeeks](https://www.geeksforgeeks.org/check-if-two-nodes-are-on-same-path-in-a-tree/" \t "_blank)**

[Given a tree (not necessarily a binary tree) and a number of queries such that every query takes two nodes of the tree…](https://www.geeksforgeeks.org/check-if-two-nodes-are-on-same-path-in-a-tree/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/check-if-two-nodes-are-on-same-path-in-a-tree/" \t "_blank)

19. Level Order traversal of binary Tree.

**[Level Order Binary Tree Traversal - GeeksforGeeks](https://www.geeksforgeeks.org/level-order-tree-traversal/" \t "_blank)**

[Level order traversal of a tree is breadth first traversal for the tree. Level order traversal of the above tree is 1 2…](https://www.geeksforgeeks.org/level-order-tree-traversal/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/level-order-tree-traversal/" \t "_blank)

20. Print Left view, Right view, Bottom View of a Binary Tree.

21. Shortest Pallindromic Substring.

**[Shortest Palindromic Substring - GeeksforGeeks](https://www.geeksforgeeks.org/shortest-palindromic-substring/" \t "_blank)**

[A Computer Science portal for geeks. It contains well written, well thought and well explained computer science and…](https://www.geeksforgeeks.org/shortest-palindromic-substring/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/shortest-palindromic-substring/" \t "_blank)

22. Most Frequent element in an array.

**[Most frequent element in an array - GeeksforGeeks](https://www.geeksforgeeks.org/frequent-element-array/" \t "_blank)**

[Given an array, find the most frequent element in it. If there are multiple elements that appear a maximum number of…](https://www.geeksforgeeks.org/frequent-element-array/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/frequent-element-array/" \t "_blank)

23. Sort elements by frequency.

**[Sort elements by frequency | Set 1 - GeeksforGeeks](https://www.geeksforgeeks.org/sort-elements-by-frequency/" \t "_blank)**

[Print the elements of an array in the decreasing frequency if 2 numbers have same frequency then print the one which…](https://www.geeksforgeeks.org/sort-elements-by-frequency/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/sort-elements-by-frequency/" \t "_blank)

24. Recaman’s Sequence.

**[Recaman's sequence - GeeksforGeeks](https://www.geeksforgeeks.org/recamans-sequence/" \t "_blank)**

[Given an integer n. Print first n elements of Recaman's sequence. Examples: Input : n = 6 Output : 0, 1, 3, 6, 2, 7…](https://www.geeksforgeeks.org/recamans-sequence/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/recamans-sequence/" \t "_blank)

25. Find next Greater number with same set of digits.

**[Find next greater number with same set of digits - GeeksforGeeks](https://www.geeksforgeeks.org/find-next-greater-number-set-digits/" \t "_blank)**

[Given a number n, find the smallest number that has same set of digits as n and is greater than n. If n is the greatest…](https://www.geeksforgeeks.org/find-next-greater-number-set-digits/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/find-next-greater-number-set-digits/" \t "_blank)

26. Implement LRU, LFU using Java all operations.

27. Largest sum contiguous subarray.

**[Largest Sum Contiguous Subarray - GeeksforGeeks](https://www.geeksforgeeks.org/largest-sum-contiguous-subarray/" \t "_blank)**

[Write an efficient program to find the sum of contiguous subarray within a one-dimensional array of numbers that has…](https://www.geeksforgeeks.org/largest-sum-contiguous-subarray/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/largest-sum-contiguous-subarray/" \t "_blank)

28. Converting a Roman to Decimal.

**[Converting Roman Numerals to Decimal lying between 1 to 3999 - GeeksforGeeks](https://www.geeksforgeeks.org/converting-roman-numerals-decimal-lying-1-3999/" \t "_blank)**

[Given a Roman numeral, the task is to find its corresponding decimal value. Example : Input: IXOutput: 9 IX is a Roman…](https://www.geeksforgeeks.org/converting-roman-numerals-decimal-lying-1-3999/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/converting-roman-numerals-decimal-lying-1-3999/" \t "_blank)

29. Given a String find first non repeating character.

**[Given a string, find its first non-repeating character - GeeksforGeeks](https://www.geeksforgeeks.org/given-a-string-find-its-first-non-repeating-character/" \t "_blank)**

[Given a string, find the first non-repeating character in it. For example, if the input string is "GeeksforGeeks", then…](https://www.geeksforgeeks.org/given-a-string-find-its-first-non-repeating-character/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/given-a-string-find-its-first-non-repeating-character/" \t "_blank)

30. Calculate the angle between hour hand and minute hand.

**[Calculate the angle between hour hand and minute hand - GeeksforGeeks](https://www.geeksforgeeks.org/calculate-angle-hour-hand-minute-hand/" \t "_blank)**

[This problem is known as Clock angle problem where we need to find angle between hands of an analog clock at a given…](https://www.geeksforgeeks.org/calculate-angle-hour-hand-minute-hand/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/calculate-angle-hour-hand-minute-hand/" \t "_blank)

31. BFS and DFS implementation.

32. Find the element that appears once.

**[Find the element that appears once - GeeksforGeeks](https://www.geeksforgeeks.org/find-the-element-that-appears-once/" \t "_blank)**

[Given an array where every element occurs three times, except one element which occurs only once. Find the element that…](https://www.geeksforgeeks.org/find-the-element-that-appears-once/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/find-the-element-that-appears-once/" \t "_blank)

33. Rearrange characters in a string such that no two adjacent are same.

**[Rearrange characters in a string such that no two adjacent are same - GeeksforGeeks](https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/" \t "_blank)**

[Given a string with repeated characters, the task is to rearrange characters in a string so that no two adjacent…](https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/" \t "_blank)

34. Two Sum Problem.

35. Merge two sorted arrays.

**[Merge two sorted arrays - GeeksforGeeks](https://www.geeksforgeeks.org/merge-two-sorted-arrays/" \t "_blank)**

[Given two sorted arrays, the task is to merge them in a sorted manner. Examples: Method 1 (O(n1 \* n2) Time and O(n1+n2)…](https://www.geeksforgeeks.org/merge-two-sorted-arrays/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/merge-two-sorted-arrays/" \t "_blank)

36. Design a Data Structure that supports insert, delete, search and getRandom in constant time.

**[Design a data structure that supports insert, delete, search and getRandom in constant time …](https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/" \t "_blank)**

[Design a data structure that supports the following operations in Θ(1) time.insert(x): Inserts an item x to the data…](https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/" \t "_blank)

37. Count distinct elements in every window of size k.

**[Count distinct elements in every window of size k - GeeksforGeeks](https://www.geeksforgeeks.org/count-distinct-elements-in-every-window-of-size-k/" \t "_blank)**

[Given an array of size n and an integer k, return the count of distinct numbers in all windows of size k.](https://www.geeksforgeeks.org/count-distinct-elements-in-every-window-of-size-k/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/count-distinct-elements-in-every-window-of-size-k/" \t "_blank)

38. Level order traversal in spiral form.

**[Level order traversal in spiral form - GeeksforGeeks](https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/" \t "_blank)**

[Write a function to print spiral order traversal of a tree. For below tree, function should print 1, 2, 3, 4, 5, 6, 7…](https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/" \t "_blank)

39. Find the only repeating element in a sorted array of size n.

**[Find the only repeating element in a sorted array of size n - GeeksforGeeks](https://www.geeksforgeeks.org/find-repeating-element-sorted-array-size-n/" \t "_blank)**

[Given a sorted array of n elements containing elements in range from 1 to n-1 i.e. one element occurs twice, the task…](https://www.geeksforgeeks.org/find-repeating-element-sorted-array-size-n/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/find-repeating-element-sorted-array-size-n/" \t "_blank)

40. Rotate a matrix by 90 degree in clockwise direction without using any extra space.

**[Rotate a matrix by 90 degree in clockwise direction without using any extra space - GeeksforGeeks](https://www.geeksforgeeks.org/rotate-a-matrix-by-90-degree-in-clockwise-direction-without-using-any-extra-space/" \t "_blank)**

[Given a square matrix, turn it by 90 degrees in a clockwise direction without using any extra space. Examples: Input: 1…](https://www.geeksforgeeks.org/rotate-a-matrix-by-90-degree-in-clockwise-direction-without-using-any-extra-space/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/rotate-a-matrix-by-90-degree-in-clockwise-direction-without-using-any-extra-space/" \t "_blank)

41. Program to find transpose of a matrix.

**[Program to find transpose of a matrix - GeeksforGeeks](https://www.geeksforgeeks.org/program-to-find-transpose-of-a-matrix/" \t "_blank)**

[Transpose of a matrix is obtained by changing rows to columns and columns to rows. In other words, transpose of A[][]…](https://www.geeksforgeeks.org/program-to-find-transpose-of-a-matrix/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/program-to-find-transpose-of-a-matrix/" \t "_blank)

42. 3 Sum

**[3Sum - LeetCode](https://leetcode.com/problems/3sum/" \t "_blank)**

[Level up your coding skills and quickly land a job. This is the best place to expand your knowledge and get prepared…](https://leetcode.com/problems/3sum/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/3sum/" \t "_blank)

43. Merge K Sorted LinkedLists.

44. Count all possible paths between two vertices.

**[Count all possible paths between two vertices - GeeksforGeeks](https://www.geeksforgeeks.org/count-possible-paths-two-vertices/" \t "_blank)**

[Count the total number of ways or paths that exist between two vertices in a directed graph. These paths don't contain…](https://www.geeksforgeeks.org/count-possible-paths-two-vertices/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/count-possible-paths-two-vertices/" \t "_blank)

45. Print all paths from root with a specified sum in Binary Tree.

**[Print all the paths from root, with a specified sum in Binary tree - GeeksforGeeks](https://www.geeksforgeeks.org/print-paths-root-specified-sum-binary-tree/" \t "_blank)**

[Given a Binary tree and a sum S, print all the paths, starting from root, that sums upto the given sum.Note that this…](https://www.geeksforgeeks.org/print-paths-root-specified-sum-binary-tree/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/print-paths-root-specified-sum-binary-tree/" \t "_blank)

46. Clone an Undirected Graph.

**[Clone an Undirected Graph - GeeksforGeeks](https://www.geeksforgeeks.org/clone-an-undirected-graph/" \t "_blank)**

[Cloning of a LinkedList and a Binary Tree with random pointers has already been discussed. The idea behind cloning a…](https://www.geeksforgeeks.org/clone-an-undirected-graph/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/clone-an-undirected-graph/" \t "_blank)

47. Find length of largest region in Boolean Matrix.

**[Find length of the largest region in Boolean Matrix - GeeksforGeeks](https://www.geeksforgeeks.org/find-length-largest-region-boolean-matrix/" \t "_blank)**

[Consider a matrix with rows and columns, where each cell contains either a '0' or a '1' and any cell containing a 1 is…](https://www.geeksforgeeks.org/find-length-largest-region-boolean-matrix/" \t "_blank)

[www.geeksforgeeks.org](https://www.geeksforgeeks.org/find-length-largest-region-boolean-matrix/" \t "_blank)

48. Longest Pallindromic Substring.

49. Group Anagrams.

**[Group Anagrams - LeetCode](https://leetcode.com/problems/group-anagrams/" \t "_blank)**

[Given an array of strings strs, group the anagrams together. You can return the answer in any order. An Anagram is a…](https://leetcode.com/problems/group-anagrams/" \t "_blank)

[leetcode.com](https://leetcode.com/problems/group-anagrams/" \t "_blank)

50. Kth Largest Element in List.

1. What is a Data Structure?
2. What are linear and non-linear data Structures?
3. Explain about Linked List Data Structure.
4. What are the basic operations performed on various data structures?
5. What are infixes, prefixes, and postfix in data structure?
6. Define what is an array.
7. How would you implement a queue using a stack?
8. Name some applications of data structures.
9. What are the advantages of a Linked list over an array?
10. What are the different types of traversal techniques in a tree?
11. What is the minimum number of Queues needed to implement the priority queue?
12. What are the applications of Graph DS?
13. Why it is said that searching a node in a binary search tree is more efficient than that of a simple binary tree?
14. Which data structure is used to perform recursion?
15. How will you check if a given Binary Tree is a Binary Search Tree or not?