Freshers Coding Test - Interview Questions & Answers

Basic Programming Questions

- Find the largest of three numbers. (Use ternary operator)
- Check if a number is prime. (Loop till √n for efficiency)
- Reverse a string. (Use StringBuilder or manual loop)
- Check if a string is palindrome.
- Swap two numbers without a third variable.

Arrays

- Find second largest element in an array.
- Remove duplicates from a sorted array using two-pointer technique.
- Find the missing number in a 1 to N array using sum formula.
- Sort an array without library function (Bubble/Selection Sort).
- Find pair of elements with a given sum using HashSet.

Strings

- Count vowels and consonants in a string.
- Find the first non-repeating character using LinkedHashMap.
- Check if two strings are anagrams.
- Reverse words in a sentence.
- Find the longest substring without repeating characters (Sliding window).

Number/Math Problems

- Fibonacci series up to N terms (Iterative).
- Factorial of a number using recursion.
- Armstrong number check.
- Find GCD/LCM of two numbers using Euclid's algorithm.
- Count digits of a number by dividing by 10.

Data Structures

- Implement a Stack using array/LinkedList.
- Implement a Queue using two Stacks.
- Detect a cycle in a linked list (Floyd's algorithm).
- Reverse a linked list using three pointers.
- Find middle element of a linked list (slow & fast pointers).

Sample Code (Binary Search)

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```
int binarySearch(int[] arr, int target) { int low = 0, high = arr.length - 1; while(low <= high){ int mid = low + (high - low)/2; if(arr[mid] == target) return mid; else if(arr[mid] < target) low = mid + 1; else high = mid - 1; } return -1; // not found }
```