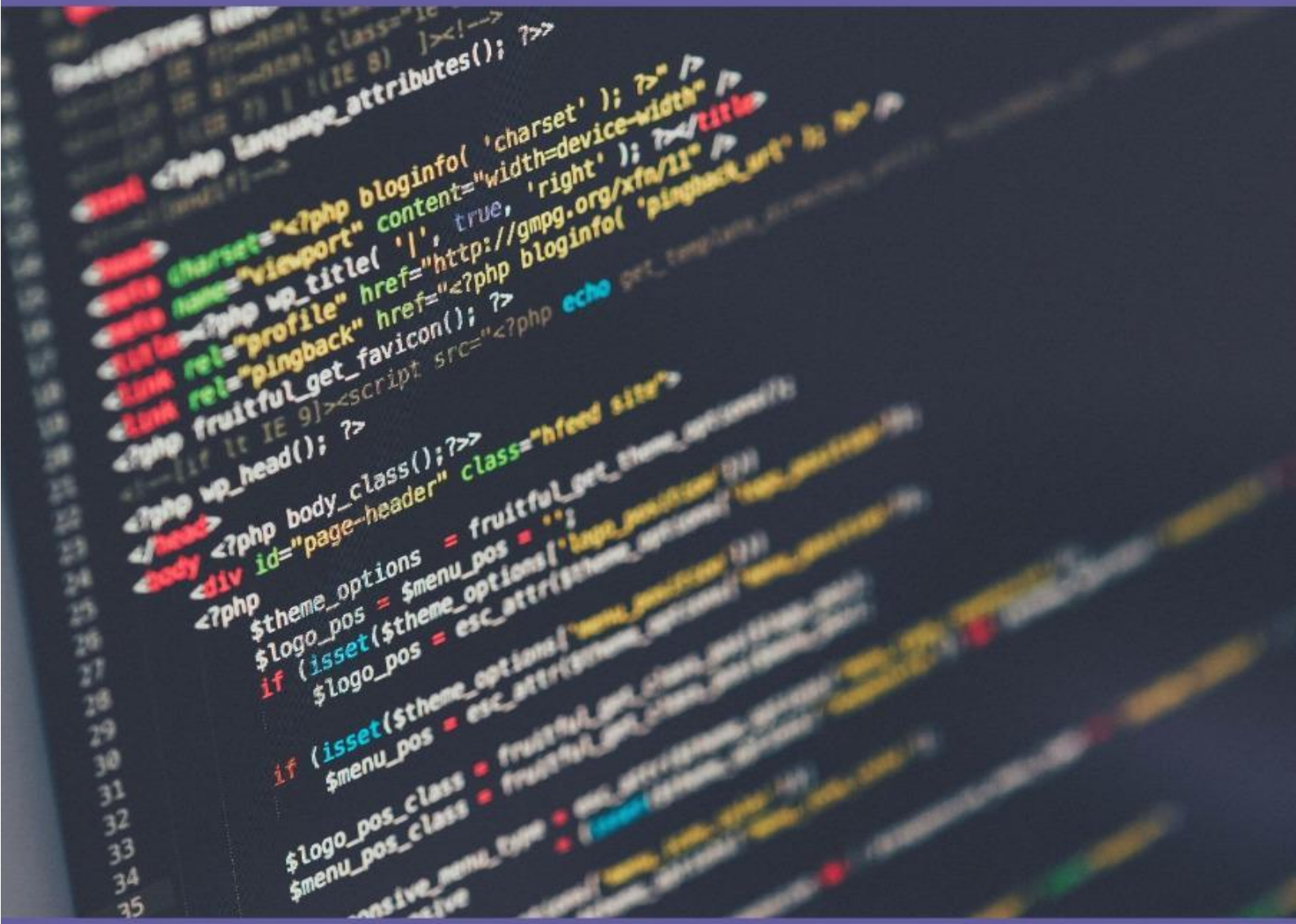
acm - CEG

Student Chapter

C.O.D.E



INTERNSHIP AND PLACEMENT PREPARATION MATERIAL

DAY 1:

Searching Algorithms

Searching Algorithms are designed to check for an element or retrieve an element from any data structure where it is stored. Based on the type of search operation, these algorithms are generally classified into two categories:

1.Sequential Search: In this, the list or array is traversed sequentially and every element is checked. For example, Linear Search.

2.Interval Search: These algorithms are specifically designed for searching in sorted data-structures. These types of search algorithms are much more efficient than Linear Search as they repeatedly target the center of the search structure and divide the search space in half. For Example, Binary Search.

References :

https://www.geeksforgeeks.org/linear-search/
https://www.geeksforgeeks.org/binary-search/
https://www.geeksforgeeks.org/ternary-search/

Problems for practice:

Easy:
https://leetcode.com/problems/missing-number/
https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorte d-array/

Medium:
https://leetcode.com/problems/find-peak-element/

Important Links:
https://www.geeksforgeeks.org/linear-search-vs-binary-search/
https://www.geeksforgeeks.org/binary-search-preferred-ternary-search/

Other Problems:
https://practice.geeksforgeeks.org/explore/?category%5B%5D=Searching&page=1

DAY 2:

Sorting Algorithms

A Sorting Algorithm is used to rearrange a given array or list elements according to a comparison operator on the elements. The comparison operator is used to decide the new order of elements in the respective data structure.

Selection, Bubble, Insertion sort:

https://www.geeksforgeeks.org/selection-sort/
https://www.geeksforgeeks.org/bubble-sort/
https://www.geeksforgeeks.org/insertion-sort/

Quick Sort:

https://www.geeksforgeeks.org/quick-sort/
https://www.youtube.com/watch?v=7h1s2SojIRw

Merge Sort:

https://www.geeksforgeeks.org/merge-sort/
https://www.youtube.com/watch?v=mB5HXBb_HY8

Counting Sort:

https://www.geeksforgeeks.org/counting-sort/
https://www.youtube.com/watch?v=7zuGmKfUt7s

Sort() in STL:

https://www.geeksforgeeks.org/sort-c-stl/

Important Links:

https://www.geeksforgeeks.org/time-complexities-of-all-sorting-algorithms/
https://www.geeksforgeeks.org/why-quick-sort-preferred-for-arrays-and-merge-sort-for-linked-lists/
https://www.geeksforgeeks.org/which-sorting-algorithm-makes-minimum-number-of writes/

Practice Problems:

Easy:
https://www.geeksforgeeks.org/find-index-first-1-sorted-array-0s-1s/

Medium:
https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/
https://leetcode.com/problems/median-of-two-sorted-arrays/

Hard:
https://leetcode.com/problems/sort-colors/

APTITUDE PROBLEMS:
https://www.indiabix.com/non-verbal-reasoning/embedded-images/