SNS COLLEGE OF TECHNOLOGY
Coimbatore-37.
An Autonomous Institution

COURSE NAME : 23CAT602 - DATA STRUCTURES & ALGORITHMS

I YEAR/ I SEMESTER

UNIT – III SORTING & SEARCHING

Topic: General Background

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A sorting algorithm is an algorithm that puts elements of a list in a certain order. The most used orders are numerical order and lexicographical order. Efficient sorting is important to optimizing the use of other algorithms that require sorted lists to work correctly and for producing human - readable input.

Sorting algorithms are often classified by :
* Computational complexity (worst, average and best case) in terms of the size of the list (N).
For typical sorting algorithms good behavior is $O(NlogN)$ and worst case behavior is $O(N2)$ and the average case behavior is $O(N)$.
* Memory Utilization
* Stability - Maintaining relative order of records with equal keys.
* No. of comparisons.
* Methods applied like Insertion, exchange, selection, merging etc.

Sorting is a process of linear ordering of list of objects.
Sorting techniques are categorized into
✓Internal Sorting
✓ External Sorting
Internal Sorting takes place in the main memory of a computer.

Searching is an operation or a technique that helps finds the place of a given element or value in the list. Any search is said to be successful or unsuccessful depending upon whether the element that is being searched is found or not.

Some of the standard searching technique that is being followed in data structure is listed below:

1. Linear Search
2. Binary Search

THANK YOU