Computing Fundamentals using Python

SUBJECT CODE : UQ25CA151A

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Computer Applications

Basic Algorithms

Algorithms:
An algorithm is a step-by-step procedure or set of rules to solve a specific problem or perform a task.In programming, an algorithm describes how the input is transformed into the output.

Example: Steps to find the largest number in a list.

Basic Algorithms

- **Searching Algorithms**
- **Sorting Algorithms**

Searching Algorithms

Searching algorithms are used to **find an element** in a collection (like a list).

- Linear Search
- Binary Search

Linear Search Algorithm

Linear Search is a searching algorithm that checks each element in a list or array sequentially until the target element is found or the list ends.

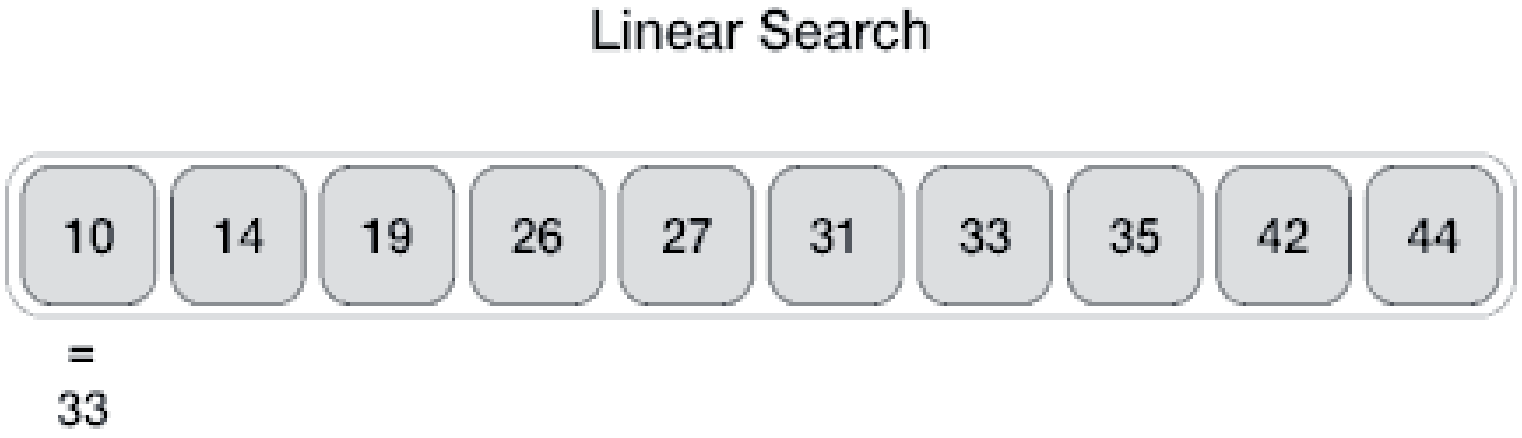
- Works for unsorted and sorted lists.
- Simple but less efficient for large datasets.

Linear Search

Working of Linear search

Consider elements given 10,14,19,26,27,31,33,35,42,44

Key element = 33



Linear Search Algorithm

Algorithm steps:

1. Start from the first element of the list.
2. Compare the current element with the target value.
3. If it matches, return the index (element found).
4. If it does not match, move to the next element.
5. Repeat steps 2–4 until all elements are checked.
6. If the end of the list is reached and the target is not found, return "not found".

THANK YOU

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