DSA THEORY Exercise 4

Q6) **1. Understanding Search Algorithms**

**Linear Search**:

* Sequentially checks each element.
* Time Complexity: O(n).

**Binary Search**:

* Requires sorted data; divides the search space in half iteratively.
* Time Complexity: O(log n).

**4. Analysis**

**Time Complexity**:

* **Linear Search**: O(n).
* **Binary Search**: O(log n).

**Use Cases**:

* **Linear Search**: Suitable for small, unsorted datasets.
* **Binary Search**: Preferred for large, sorted datasets due to efficiency.