Exercise2\_DSA\_Theory\_Soln

1. Understand Asymptotic Notation:

Big O notation is a powerful tool used in computer science to describe the time complexity or space complexity of algorithms.

Big-O, commonly referred to as “Order of”, is a way to express the upper bound of an algorithm’s time complexity, since it analyses the worst-case situation of algorithm. It provides an upper limit on the time taken by an algorithm in terms of the size of the input. It’s denoted as O(f(n)), where f(n) is a function that represents the number of operations (steps) that an algorithm performs to solve a problem of size n.

The Big O notation can be used to compare the efficiency of different algorithms or data structures.

Linear Search : Best case(O(1)) Average case(O(N)) Worst case(O(N))

Binary Search : Best case(O(1)) Average case(O(logN)) Worst case(O(log(N))

Analysis:

Binary search is more useful since it reduces the time complexity more as compared to linear search.