25-08-22 Data Structures Lec2

Analysis of Algorithm-Time Complexity

Types of Analysis:

1) Worst case Analysis (Upper bound)
2) Best case Analysis (Lower bound)
3) Average case Analysis (prediction of running time of algorithm)

Lower bound ≤ Running time ≤ Upper bound.

How to compare two or more than two algorithms.

O 1) compare them on basis of execution time.
Ω 2) count number of statements executed at any input.
Θ 3) count number of instructions written by programmers.

Good Approach:

1) compare the algorithms in terms of time at any input n.

e:g $T(n)$ → input size
→ Time in terms of n.

e:g $f(n) = 7n + 100$

The measure of efficiency of approximation of T(n) is called Assymptotic Approach.