Analysis of Algorithm : Idea

→ Algorithm
→ flow chart
} Pseudo code

Algorithm → **Priori Analysis**

- Design
- Basic knowledge
- programming language
- Hardware, OS
- Analysis

- Algorithm
- Independent of Proglangmg
- Independent of H/W
- Time & Space

Program → **Posterior Analysis**

- Implementation
- programmer
- programming language
- H/W and OS
- Testing

- Program
- Dependent of progr. language
- Dependent on H/W & OS
- Time

Characteristics of an Algorithm

- Input → 0/more
- Output → 1/more
- Definite, Unambiguous
- Finite
- Effective → Time & Space

Algorithm Complexity

1. **Time factor**

- Time is measured by counting the number of key operation such as comparisons in the sorting algorithm.

2. **Space factor**

- Space is measured by counting the maximum memory space required by the algorithm.

Asymptotic Notation -

- Asymptotic notation is an analysis of an algorithm refers to defining the mathematical boundaries of its run-time performance

- The time required by an algorithm will classify into 3 different cases -

1- **Best case** - Minimum time required for program execution $\Omega(n)$

2. **Average Case** - Average time required for program execution $\Theta(n)$

3. **Worst case** - Maximum time requird for program execution $O(n)$

Important

Big Oh