Analysis of Algorithms

- An algorithm is clearly a specified set of instructions to be followed to solve a problem.

- The step by step procedure of an algorithm defines a set of instructions to be executed in a certain order to get a desired output.

- Algorithms are generally created independent of the underlying of the languages.

- In simple words, it is the core logic of a problem.

Characteristics of an Algorithm

- Unambiguos
- Input
- Output
- Finiteness
- Feasibility
- Correctness
- Independent

Space Complexity

- The space complexity is the amount of memory it needs to run to completion.

- The space needed by the program has the following components

  ➢ Instruction Space

  ➢ Data Space

  ➢ Environment Stack Space

Time Complexity

- Amount of computer time required to it needs run to completion.

- To approaches to estimating run time are:
  - ➢ Operation count
  - ➢ Step count